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Our Ref : P221002-BMR-R7-VR
Date : 11th July 2023

Binnies Hong Kong Limited
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100 How Ming Street,
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Attn: Wilson CK Lam

Agreement No. DHSR/IEC/001

Consultancy Service of Independent Environmental Checker (IEC) for Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns under Contract No. 21/WSD/21

Baseline Monitoring Report

Dear Sir,

Pursuant to Condition 3.3 of Environmental Permit (EP) No. EP-602/2021, please note the Baseline Monitoring Report Revision 7.0, dated 10 July 2023 submitted under the EP, certified by the Environmental Team Leader on 10 July 2023, had been reviewed and is hereby verified.

Should you have any query, please feel free to contact the undersigned at 3756 9590 or ivanting@umwelt.consulting .

Your faithfully,
For and on behalf of:
Umwelt Consulting Limited

Ting Po Chung Ivan
Independent Environmental Checker

Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Baseline Monitoring Report

Prepared for:

Water Supplies Department

Prepared by:

Acuity Sustainability Consulting Limited

Date: 10 July 2023

Project No.: ASCL-230168321

Reference No.: BMR-7.0

Certified by: _____

F. C. Tsang
Environmental Team Leader

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EXECUTIVE SUMMARY

In accordance with the approved Environmental Monitoring and Audit (EM&A) Manual for the Project (AEIAR-232/2021), baseline monitoring for air quality and noise should be conducted prior to the commencement of major construction works. Pursuant to Environmental Permit (EP-602/2021) Condition 3.3, Baseline Monitoring Report shall be submitted to the Director of Environmental Protection at least 2 weeks before the commencement of construction of the Project.

The baseline monitoring for 1-hour Total Suspended Particulate (TSP) monitoring was carried out between 27 February and 12 March 2023 and between 2 May and 16 May 2023. Baseline 1-hour TSP monitoring was conducted at least three times per day at each monitoring station during the daytime. Data collected were reviewed and analysed to establish the background air quality at five monitoring stations. **Table A1** summarizes the results of the baseline 1-hour TSP monitoring.

Table A1 Summary of Baseline 1-hour TSP Monitoring Results

Stations	Average (μg/m^3)	Range (μg/m^3)	Sampling Parameter
DM-1	77	68 - 88	1-hour TSP
DM-2	60	49 - 69	
DM-3	61	53 - 69	
DM-4	69	49 - 85	
DM-4a	64	55 - 73	

The baseline 1-hour TSP monitoring results form the basis for determining the air quality criteria for the impact monitoring. Table A2 presents the Action and Limit Levels for impact monitoring of 1-hour TSP.

Table A2 Calculated Action and Limit Levels for 1-hour TSP

Stations	Action Level (μg/m^3)	Limit Level (μg/m^3)
DM-1	300.1	500
DM-2	289.0	
DM-3	289.7	
DM-4	294.9	
DM-4a	291.6	

The baseline noise monitoring was carried out at three noise monitoring stations (NM-2, NM-3, NM-4a) between 27 February and 12 March 2023 according to the approved EM&A Manual. The baseline noise monitoring was carried out at the other three noise monitoring stations (NM-4, NM-5, NM-6) between 2 May and 16 May 2023. Data collected were reviewed and analysed to establish the background noise at these three monitoring stations. **Table A3** summarizes the results of the baseline noise monitoring.

Table A3 Summary of Daytime Baseline Noise Monitoring Results

Monitoring Station	Noise Level, dB(A)		
	$L_{eq(30\text{-}min)}$		
	Mean	Minimum	Maximum
NM-2	70.6	68.8	72.8
NM-3	65.2	63.6	66.8
NM-4	64.6	60.6	65.5
NM-4a	72.6	71.3	73.7
NM-5	65.3	63.9	67.6
NM-6	72.6	71.4	74.4

The Action and Limit Levels for construction noise monitoring are presented in **Table A4**.

Table A4 Action and Limit Levels for Construction Noise Monitoring

Monitoring Stations	Action Level	Limit Level	Time Period
NM-2	When one documented complaint is received	75 dB(A)	0700 - 1900 hours on normal weekdays
NM-3		70/ 65 dB(A) *	
NM-4		75 dB(A)	
NM-4a		75 dB(A)	

Note:
* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

1. INTRODUCTION

1.1 Project Background

1.1.1 The relocated Diamond Hill Fresh Water and Salt Water Service Reservoirs (DHSRs) will be constructed in a series of caverns linked by access tunnels and adits. The relocated Diamond Hill Fresh Water Service Reservoirs (DHFWSR) and Diamond Hill Salt Water Service Reservoirs (DHSWSR) will be compartmented while the existing Diamond Hill Pumping Station (DHPS) will be split into two (2) pump houses for fresh and salt water supply when relocated.

1.1.2 Ancillary facilities to be constructed near the tunnel portal may include transformer room, switch room, emergency generator room, control room, ventilation building, and pumping station control room, which will be constructed in an above-ground building outside the tunnel.

1.1.3 The scope of the Project comprises the following:

a) Construction of the relocated DHSRs and associated pumping stations and water main laying works;

b) Construction of tunnels, adits, ventilation system and caverns for accommodating the relocated DHSRs and the associated facilities;

c) Terminating the operation of the existing DHSRs and the associated facilities; and

d) All other associated works that are incidental to and necessary for the completion of the Project.

1.1.4 The major construction activities of the Project include earthworks, drilling and blasting, construction of concrete structures, handling and transportation of excavated materials, water mains laying, installation of electrical and mechanical (E&M) equipment and material transportation. The operation of the existing DHSRs and the associated facilities will be terminated after the completion of the testing and commissioning of the relocated DHSRs. Under the Project, the existing DHSRs and associated facilities will be retained after termination of the operation. The subsequent demolition works will be carried out by other government departments/ project proponents.

1.1.5 The Project is a Designated Project under Item Q.2, Part I of Schedule 2 of the Environmental Impact Assessment Ordinance, "Underground Rock Caverns", which requires an environmental permit from the Environmental Protection Department for its construction and operation.

1.1.6 Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection Department (EPD) granted the Environmental Permits (EP-602/2021) to the Water Supplies Department (WSD) for the Project.

1.1.7 Acuity Sustainability Consulting Limited (ASCL) is commissioned by Chun Wo – Sinohydro Joint Venture to undertake the role of Environmental Team (ET) under

the Environmental Permit (EP) EP-602/2021, and to carry out the EM&A programme in fulfilment of the EM&A Manual, and other requirements stipulated in the associated EIA Report.

1.2 Purpose of Baseline Monitoring Report

1.2.1 The Baseline Monitoring Report is prepared in accordance with condition 3.2 of Environmental Permit No. EP-602/2021 and to fulfil the requirements of EM&A Manual for the Project. This Report presents the baseline monitoring requirement, methodologies, monitoring locations, parameter, criteria of air quality and noise monitoring and the baseline monitoring results collected at the air quality monitoring stations DM-1, DM-2, DM3, DM4 and DM-4a (**Table 2.2**), and noise monitoring stations NM-2, NM-3, NM-4, NM-4a, NM5 and NM6 (**Table 3.2**). Noise monitoring was not conducted at NM-1 due to access not granted by the management office of the premises.

2. AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the EM&A Manual, baseline air quality monitoring shall be carried out at all of the designated monitoring locations for at least 14 consecutive days prior to the commissioning of major construction works to obtain 1-hour Total Suspended Particulates (TSP) samples. The selected baseline monitoring stations should reflect baseline conditions at the impact stations. One-hour sampling should be done at least 3 times per day while the highest dust impact is expected.

2.1.2 During the baseline monitoring, there should not be any major construction or dust generation activities in the vicinity of the monitoring stations.

2.2 Monitoring Locations

2.2.1 The proposed air quality monitoring locations during the baseline air quality monitoring are listed in **Table 2.1** and shown in **Figure 2.1**.

Table 2.1 Designated Air Quality Monitoring Locations proposed in the approved EM&A Manual

ID	ASR ID	Description
DM-1	ASR 2	Tennis Court near Tin Ma Court
DM-2	ASR 5	Chun Sing House, Tin Ma Court
DM-3	ASR 7	Grace Methodist Church Kindergarten
DM-4	ASR 9	Block 6, Tsui Chuk Garden

2.2.2 The Environmental Team (ET) had issued letters to the property management offices (MO) of the concerned premises to seek approval for setting up monitoring stations at the designated locations. While permissions of access have been obtained for ASR2, ASR5 and ASR7, no response was received from the MO of Tsui Chuk Garden before the deadline. To avoid delay in monitoring programme, air quality monitoring station DM-4 was proposed to relocate to Wang King House, Tin Wang Court (**Figure 2.2**) about 130 m south-east from DM-4. The alternative monitoring location (DM-4a) meets the following criteria of alternative monitoring location as stated in Section 4.6.3 of the EM&A Manual:

i. At the site boundary or such locations close to the major dust emission source;

ii. Close to the (planned) air sensitive receivers as defined in the EIAO-TM;

iii. Proper position/ sitting and orientation of the monitoring equipment; and

iv. Take into account the prevailing meteorological conditions.

2.2.3 Permission of access was later obtained from the Incorporated Owners of Tsui Chuk Garden in late February 2023, and the ET was advised to resume the baseline air quality monitoring at Block 6, Tsui Chuk Garden (DM-4), which was agreed by the EPD, the Engineer (ER) and the Independent Environmental Checker (IEC).

2.2.4 The updated air quality monitoring locations for baseline monitoring are listed in **Table 2.2** and presented in **Figure 2.2**.

Table 2.2 Updated Baseline Air Quality Monitoring Stations

ID	ASR ID	Description
DM-1	ASR 2	Tennis Court near Tin Ma Court
DM-2	ASR 5	Chun Sing House, Tin Ma Court
DM-3	ASR 7	Grace Methodist Church Kindergarten
DM-4	ASR 9	Block 6, Tsui Chuk Garden
DM-4a	ASR 8	Road pavement near Wang King House, Tin Wang Court

2.3 Air Quality Monitoring Parameter, Frequency and Duration

2.3.1 **Table 2.3** summarized the monitoring parameter, duration and frequency of baseline air quality monitoring.

Table 2.3 Baseline Monitoring Parameter, Frequency and Duration

Parameter	Frequency	Duration
1-hour TSP	3 times per day	Consecutive days of at least 2 weeks

2.4 Monitoring Equipment and Methodology and QA/ QC Procedure

Proposal of Using Portable Direct Reading Dust Meter

2.4.1 Direct reading dust meter were used for measuring 1-hour TSP levels during the baseline air quality monitoring. According to Section 4.4.1 of the EM&A Manual, the proposed use of direct reading dust meter was submitted to and agreed by the IEC.

2.4.2 Direct reading dust meters have been calibrated against high volume samplers (HVSs) annually. A 2-day, three 3-hour measurement results per day from direct reading dust meters were taken to compare the sampling results from the HVS. The correlation between the direct reading dust meters and the HVSs were then concluded. By accounting for the correlation factor, the direct reading dust meter is considered to achieve comparable results as those of the HVS.

2.4.3 The 1-hour TSP measurement follows the instruction provided in the manufacturer's manual. Before initiating a measurement, zeroing the portable dust meter was carried out to ensure the accuracy of each measurement.

2.4.4 Sufficient number of monitoring instruments were prepared by the ET for carrying out the baseline monitoring. All equipment and associated instrumentation were clearly labelled.

2.4.5 Equipment used in the baseline air quality monitoring programme is summarised in **Table 2.4.** Calibration certificates for the baseline air quality monitoring equipment are attached in **Appendix A**.

2.4.6 Wind data were collected from the records of Hong Kong Observatory Kai Tak Wind Station (22.30966N, 114.21336E), which is located at the south-eastern side of runway of the former Kai Tak Airport about 4.5 km south-east from the project site.

Table 2.4 Baseline Air Quality Monitoring Equipment

Equipment	Brand and Model	Serial No.	Calibration Due Date
Direct Reading Dust Meter	Sibata LD-5R	851820	15 October 2023
		882109	15 October 2023
	PC-3A(E)	JC-220710221	15 October 2023
		JC-2110283	15 October 2023

2.5 Results and Observation

2.5.1 The baseline air quality monitoring period for different monitoring stations are summarised in **Table 2.5** and the baseline monitoring schedules are presented in **Appendix B**.

Table 2.5 Baseline Air Quality Monitoring Period

Stations	Date
DM-1, DM-2, DM-3 and DM-4a	From 27 February to 12 March 2023
DM-4	From 2 May to 16 May 2023

Remark: Due to the inclement weather on 14 May 2023, baseline air quality monitoring at DM-4 was cancelled.

2.5.2 The baseline air quality monitoring results are summarized in **Table 2.6**. Details of air quality results are presented in **Appendix C**.

Table 2.6 Summary of Baseline 1-hour TSP Monitoring Results

Monitoring Stations	TSP Concentration, µg/m^3		
	Average	Minimum	Maximum
DM-1	77	68	88
DM-2	60	49	69
DM-3	61	53	69
DM-4	69	49	85
DM-4a	64	55	73

2.5.3 During the baseline monitoring, no construction activity of the Project was conducted in the vicinity of the monitoring locations and in the Project site.

Table 2.7 Influencing Factors at / near Air Quality Monitoring Stations

Monitoring Stations	Influencing Factors
DM-1	Road Traffic
DM-2	Road Traffic
DM-3	Road Traffic
DM-4	Not identified
DM-4a	Road Traffic

2.5.4 Extracts of wind data recorded at Kai Tak Wind Station available from the Hong Kong Observatory are presented in **Appendix E**.

2.6 Action and Limit Levels

2.6.1 The baseline 1-hour TSP monitoring results form the basis of determining the air quality criteria for the impact monitoring. **Table 2.8** shows the criteria for establishing the action and limit levels for air quality monitoring.

Table 2.8 Action and Limit Levels for Air Quality during Construction Period

Parameter	Action Level	Limit Level
1-hour TSP level in $\mu g/m^3$	For baseline level 384 $\mu g/m^3$, action level = (baseline level × 1.3 + limit level) ÷ 2 For baseline level > 384 $\mu g/m^3$, action level = limit level.	500 $\mu g/m^3$

2.6.2 Following the above guidelines, the action and limit levels for 1-hour TSP impact monitoring have been set and presented in **Table 2.9**.

Table 2.9 Calculated Action and Limit Levels for 1-hour TSP

Monitoring Stations	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
DM-1	300.1	500
DM-2	289.0	
DM-3	289.7	
DM-4	294.9	
DM-4a	291.6	

3. NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 Baseline noise monitoring shall be carried out daily in all of the identified monitoring stations for at least 2 weeks prior to the commissioning of the construction works. During the baseline monitoring, there shall not be any construction activities in the vicinity of the monitoring stations. Any non-project related construction activities in the vicinity of the monitoring stations during the baseline monitoring should be noted and the source(s) and location(s) of such activities should be properly recorded.

3.2 Monitoring Locations

3.2.1 The proposed noise monitoring location during the baseline noise monitoring are listed in **Table 3.1** and shown in **Figure 3.1**.

Table 3.1 Designated Noise Monitoring Station proposed in the Approved EM&A Manual

ID	NSR ID	Description
NM-1	NSR 2	Block 1, Meridian Hill
NM-2	NSR 3	Chun Sing House, Tin Ma Court
NM-3	NSR 5	Grace Methodist Church Kindergarten
NM-4	NSR 7	Block 6, Tsui Chuk Garden

3.2.2 The ET has issued letters to the MO of the concerned premises to seek approval for setting up monitoring stations at the designated locations. While permission of access were obtained for NM-2 and NM-3, no response was received from the MO of Tsui Chuk Garden before the deadline. To avoid delay in monitoring programme, alternate monitoring location NM-4a, which is a road pavement near Wang King House, Tin Wang Court (**Figure 3.2**) about 130 m south-east from NM-4, was proposed.

3.2.3 The MO of Meridian Hill had rejected the ET's request to set up and carry out noise monitoring at Block 1, Meridian Hill (NM-1). Noise monitoring station at NM-1 was cancelled following discussion and agreement with the EPD and the IEC.

3.2.4 Permission of access has been obtained from the Incorporated Owners of Tsui Chuk Garden in late February 2023. The ET was advised to resume the baseline noise monitoring at Block 6, Tsui Chuk Garden (NM-4), which was agreed by the EPD, the ER and the IEC. Additional noise monitoring stations were also proposed by the ET at Wo Tin House, Shatin Pass Estate (NM-5) and Sheung Fung Street Customs Staff Quarter (NM-6) and were agreed by the IEC, the ER and the EPD.

3.2.5 The noise monitoring locations for baseline monitoring are listed in **Table 3.2**.

Table 3.2 Updated Baseline Noise Monitoring Station

ID	NSR ID	Description
NM-2	NSR 3	Chun Sing House, Tin Ma Court
NM-3	NSR 5	Grace Methodist Church Kindergarten
NM-4	NSR 7	Block 6, Tsui Chuk Garden
NM-4a	NSR 6	Road pavement near Wang King House, Tin Wang Court
NM-5	NSR 25	Wo Tin House, Shatin Pass Estate
NM-6	NSR P1	Sheung Fung Street Customs Staff Quarters

3.3 Noise Monitoring Parameter, Frequency and Duration

3.3.1 Baseline noise level was measured by the ET and measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}) over a 30-minute interval.

3.3.2 As supplementary information for data auditing, statistical results such as L_{10} and L_{90} were also obtained for reference.

3.3.3 **Table 3.3** summarized the monitoring parameters, duration, and frequency of baseline noise monitoring.

Table 3.3 Baseline Monitoring Parameter, Frequency and Duration

Parameters	Frequency and Duration
$L_{eq(30\text{-min})}$ $L_{10(5\text{-min})}$ $L_{90(5\text{-min})}$	At least once per day between 07:00 and 19:00 for 14 consecutive days - ($L_{eq(30\text{-min})}$ as an average of six consecutive L_{eq} over 5 minutes)

3.4 Monitoring Equipment, Methodology and QA / QC Procedure

3.4.1 As referred to the technical memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications were used for carrying out the baseline noise monitoring.

3.4.2 Noise measurements were not made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed was checked with a portable wind speed meter capable of measuring the wind speed in m/s.

3.4.3 Sufficient numbers of noise measuring equipment and associated instrumentation were prepared by the ET. All the equipment and associated instrumentation were clearly labelled.

3.4.4 Wind data were collected from the records of Hong Kong Observatory Kai Tak Wind Station (22.30966N, 114.21336E), which is located at the south-eastern side

of runway of the former Kai Tak Airport about 4.5 km south-east from the project site.

3.4.5 The monitoring procedures are as follows:

- For façade measurement, the monitoring station was set at a point 1 m from the exterior of the sensitive receivers building façade and set at a position 1.2 m above the ground. For free-field measurement, the monitoring station was set at a position 1.2 m above the ground.
- The battery condition was checked to ensure good functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the interval were set as follows:
  - Frequency weighting: A
  - Time weighting : Fast
  - Interval : 30 minutes ($L_{eq(30\text{-min})}$) would be determined for daytime noise by calculating the logarithmic average of six $L_{eq(5\text{-min})}$ data
- Prior to and after each noise measurement, the meter was calibrated using an acoustic calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement is more than 1.0 dB, the measurement was considered invalid and repeat of noise measurement will be required after re-calibration or repair of the equipment.
- At the end of the monitoring period, the values of L_{eq}, L_{90} and L_{10} were recorded. In addition, noise sources were recorded on a standard record sheet.

3.4.6 **Table 3.4** summarized the type of measurement undertaken in the six noise monitoring stations.

Table 3.4 Type of Noise Measurement

Monitoring Stations	Measurement
NM-2	Façade
NM-3	Façade
NM-4	Façade
NM-4a	Free field
NM-5	Façade
NM-6	Free field

3.4.7 **Table 3.5** summarized the noise monitoring equipment used during the baseline noise monitoring. Calibration certificates for the baseline noise monitoring equipment are attached in **Appendix A**.

Table 3.5 Baseline Noise Monitoring Equipment

Equipment	Model (Serial Number)	Calibration Due Date
Sound Level Meter	XL2 (A2A-09696-E0)	25 March 2023
		3 April 2024
Sound Calibrator	NC 75 (34724243)	4 July 2023

3.5 Maintenance and Calibration

3.5.1 Maintenance and calibration procedures are as follows:

- The microphone head of the sound level meter and calibrator were cleaned with a soft cloth; and
- The sound level meter and calibrator were calibrated annually by a HOKLAS laboratory or the manufacturer.

3.6 Results and Observations

3.6.1 The baseline noise monitoring period for different monitoring stations are summarised in **Table 3.6** and the baseline monitoring schedules are presented in **Appendix B**.

Table 3.6 Baseline Noise Monitoring Period

Stations	Date
NM-2, NM-3, and NM-4a	From 27 February to 12 March 2023
NM-4, NM-5, and NM-6	From 2 May to 16 May 2023

Remark: Due to the inclement weather on 14 May 2023, baseline noise monitoring at NM-4, NM5 and NM-6 were cancelled.

3.6.2 The baseline noise monitoring results are summarised in **Table 3.7**. Details of baseline noise monitoring results and graphic presentation of the data are given in **Appendix D**. Weather conditions recorded during the baseline monitoring period area shown in **Appendix E**.

Table 3.7 Summary of Daytime Baseline Noise Monitoring Results

Monitoring Station	Noise Level, dB(A)		
	$L_{eq(30\text{-}min)}$		
	Mean	Minimum	Maximum
NM-2	70.6	68.8	72.8
NM-3	65.2	63.6	66.8
NM-4	64.6	60.6	65.5
NM-4a	72.6	71.3	73.7
NM-5	65.3	63.9	67.6
NM-6	72.6	71.4	74.4

3.6.3 During the baseline noise monitoring period, the influencing factors which may affect the results are summarized in **Table 3.8**.

Table 3.8 Influencing Factors at Noise Monitoring Stations

Monitoring Stations	Influencing Factors
NM-2	Road Traffic, other construction noise (Breaker)
NM-3	Road Traffic
NM-4	Road Traffic (fire truck alarm)
NM-4a	Road Traffic
NM-5	Road Traffic
NM-6	Road Traffic

3.7 Action and Limit Levels

3.7.1 The action and limit levels were established in accordance with the EM&A Manual. **Table 3.9** presents the Action and Limit Level for construction noise.

Table 3.9 Action and Limit Levels for Construction Noise Monitoring

Monitoring Stations	Action Level	Limit Level	Time Period
NM-2	When one documented complaint is received	75 dB(A)	0700 - 1900 hours on normal weekdays
NM-3		70/ 65 dB(A) *	
NM-4		75 dB(A)	
NM-4a		75 dB(A)	
NM-5		75 dB(A)	
NM-6		75 dB(A)	

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.
* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

4. CONCULSION

4.1 Revision for inclusion in the EM&A Manual

4.1.1 The baseline monitoring was conducted according to the EM&A Manual for air quality and noise.

4.1.2 The monitoring methodology, parameters monitored, and monitoring location are all generally in line with the EM&A Manual for the Project.

4.1.3 Summary of revisions for inclusion in the EM&A Manual are shown in **Table 4.1**.

Table 4.1 Summary of Revisions for Inclusion in the EM&A Manual

Revision(s)	Details	Relevant Section(s) in this Baseline Monitoring Report
1	Due to no response was received from the MO of DM-4 - Block 6, Tsui Chuk Garden before the deadline, an alternative air quality monitoring station was proposed at road pavement near Wang King House, Tin Wang Court (DM-4a).	Section 2.2
2	Due to objection from MO of NM-1 - Block 1, Meridian Hill for setting up a noise monitoring station, noise monitoring was not conducted at the monitoring location.	Section 3.2
3	Due to no response was received from the MO of NM-4 - Block 6, Tsui Chuk Garden before the deadline, an alternative noise monitoring station was proposed at road pavement near Wang King House, Tin Wang Court (NM-4a).	Section 3.2
4	Permission of access has been obtained from the Incorporated Owners of Tsui Chuk Garden in late February 2023, air quality and noise monitoring were resumed at Block 6, Tsui Chuk Garden.	Sections 2.2 and 3.2
5	Two additional noise monitoring stations were proposed by the ET at Shatin Pass Estate and Sheung Fung Street Customs Staff Quarters, where the open trench method would be adopted in some of the watermains construction works.	Sections 2.2 and 3.2

4.2 Air Quality

4.2.1 Baseline air quality monitoring at monitoring stations DM-1, DM-2, DM-3 and DM-4a were carried out between 27 February and 12 March 2023, and at monitoring station DM-4 between 2 May and 16 May 2023.

4.2.2 No major construction activity of the Project was conducted in the vicinity of the monitoring locations and in the Project site. Other influencing factors could be referred to **Table 2.7**.

4.2.3 The baseline air quality monitoring results were considered representative to the ambient air quality condition of the respective sensitive receivers.

4.2.4 Action and limit levels were derived based on the baseline 1-hour TSP monitoring results according to the EM&A Manual.

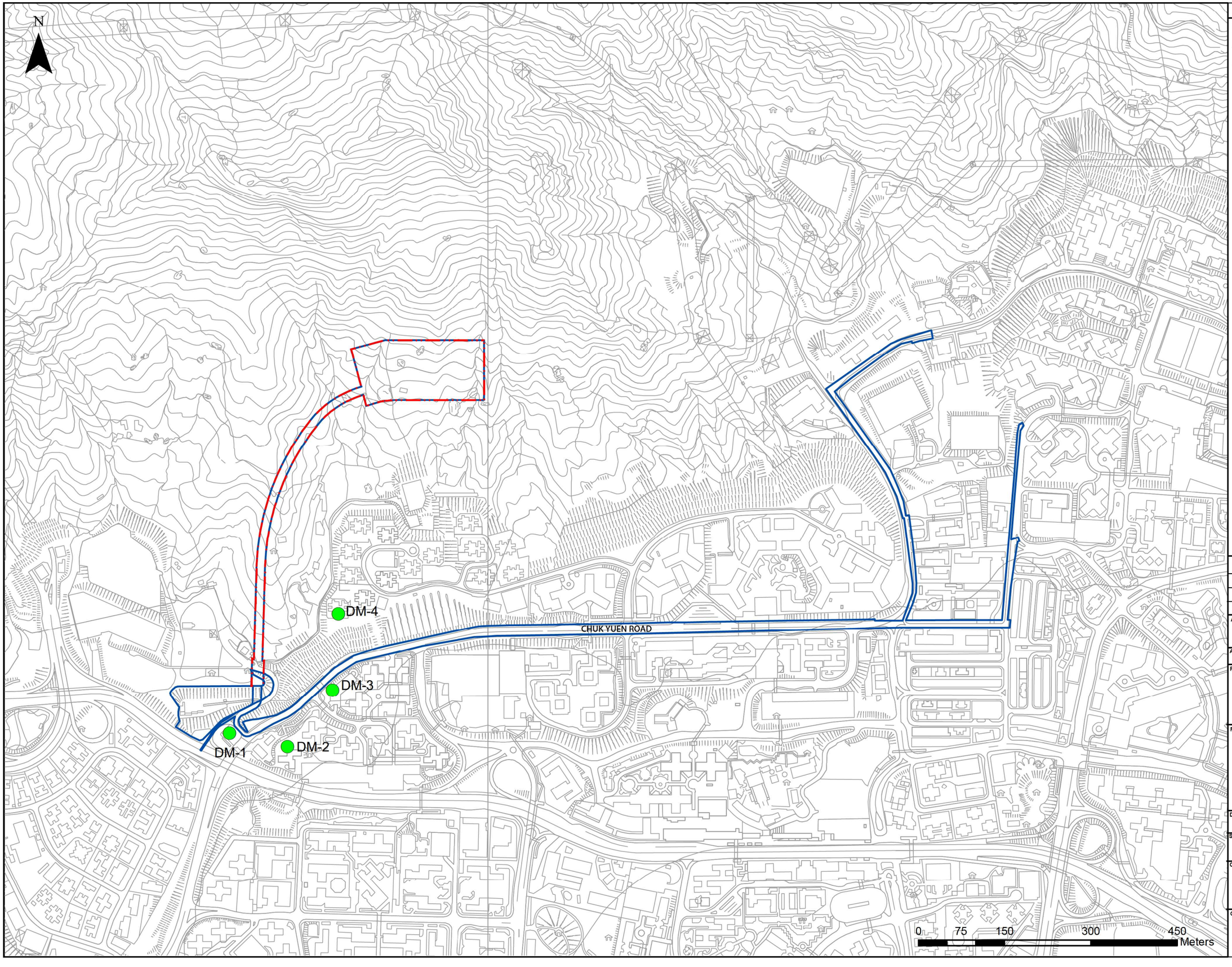
4.3 Noise

4.3.1 Baseline noise monitoring for noise monitoring stations NM-2, NM-3 and NM-4a were carried out between 27 February and 12 March, and at monitoring stations NM-4, NM-5 and NM-6 between 2 May 2023 and 16 May 2023.

4.3.2 No major construction activity of the Project was conducted in the vicinity of the monitoring locations and in the project site. Other influencing factors could be referred to **Table 3.8**.

4.3.3 The action and limit levels to be adopted for impact noise monitoring are presented in **Table 3.9**.

4.3.4 The baseline noise monitoring results are considered representative to the ambient noise level at all monitoring stations.



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION DUST MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	05/21	05/21	05/21	05/21

Approved

-

Agreement No.

CE15/2018 (WS)

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

LOCATION OF PROPOSED AIR QUALITY MONITORING STATION (CONSTRUCTION PHASE)

Drawing No. Figure 2.1

Revision -

Scale

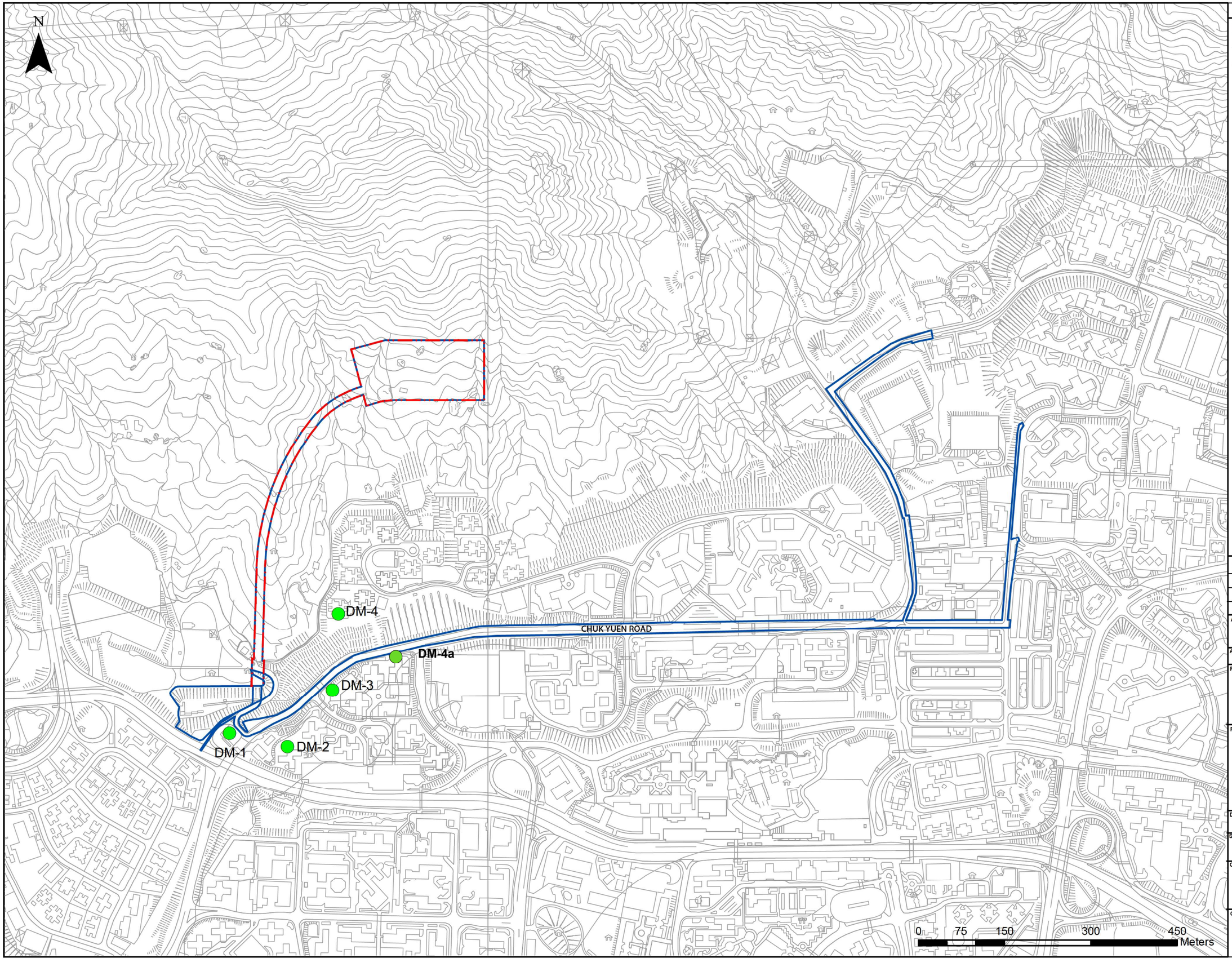
A3: 1:6,000

Client

水務署 Water Supplies Department

Consultant

BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION DUST MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	05/21	05/21	05/21	05/21

Approved: -

Agreement No.: CE15/2018 (WS)

Project Title: **RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION**

Figure Title: Location of Updated Air Quality Monitoring Stations

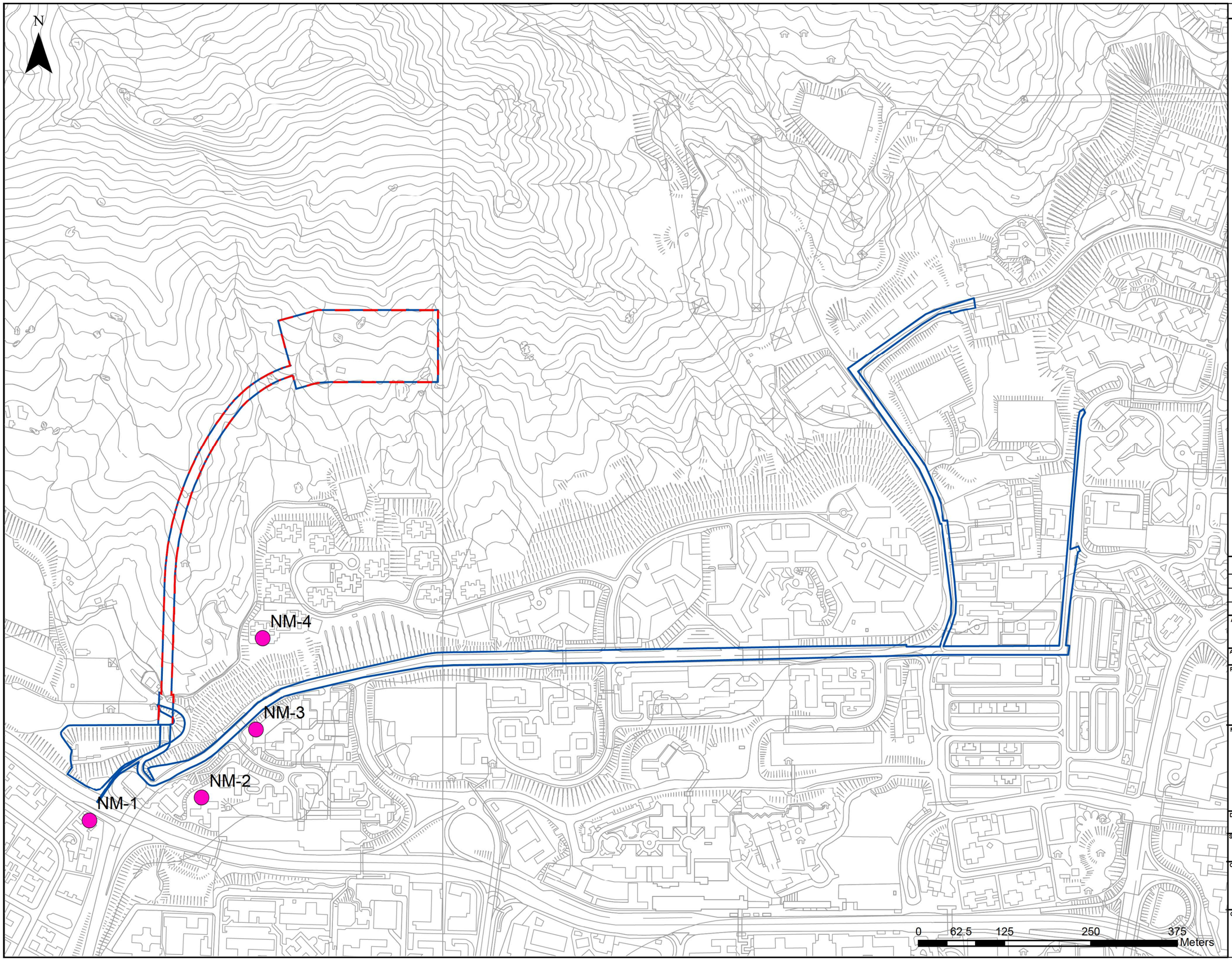
Drawing No.: Figure 2.2

Revision: -

Scale: A3: 1:6,000

Client: 水務署 Water Supplies Department

Consultant: BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION NOISE MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	03/21	03/21	03/21	03/21

Approved

-

Agreement No.

CE15/2018 (WS)

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

LOCATIONS OF PROPOSED CONSTRUCTION NOISE MONITORING STATIONS

Drawing No. Figure 3.1

Revision B

Scale

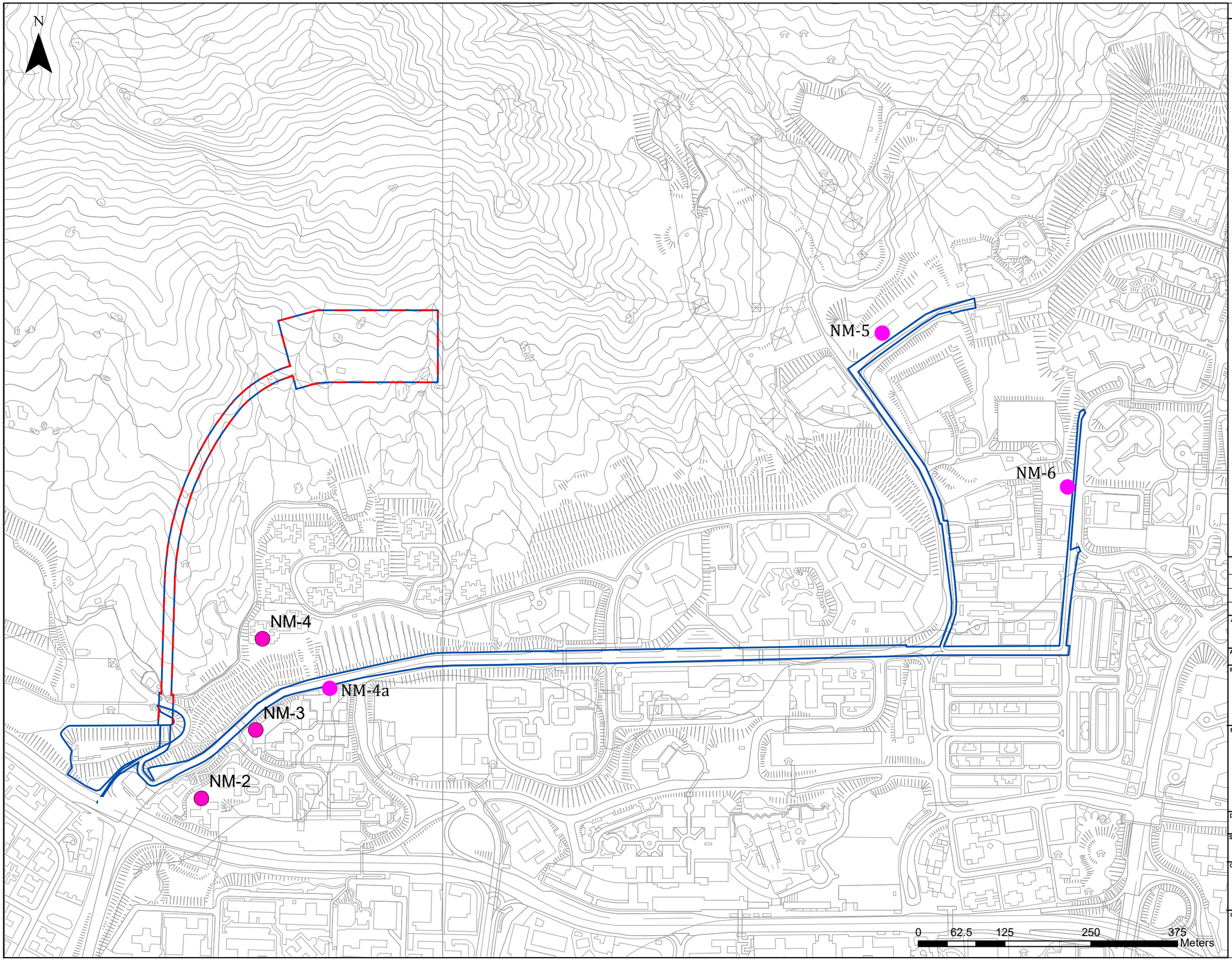
A3: 1:5,000

Client

水務署 Water Supplies Department

Consultant

BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION NOISE MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	03/21	03/21	03/21	03/21

Approved: -

Agreement No.: CE15/2018 (WS)

Project Title: RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title: Locations of Updated Noise Monitoring Station

Drawing No.: Figure 3.2

Revision: B

Scale: A3: 1:5,000

Client: 水務署 Water Supplies Department

Consultant: BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司

Appendix A

Air Quality and Noise Monitoring Equipment Calibration Certificates

ACUITY SUSTAINABILITY CONSULTING LIMITED

Website: www.acuityhk.com

Unit C, 11/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon.

Tel. : (852) 2698 6833
Fax.: (852) 2698 9383

Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

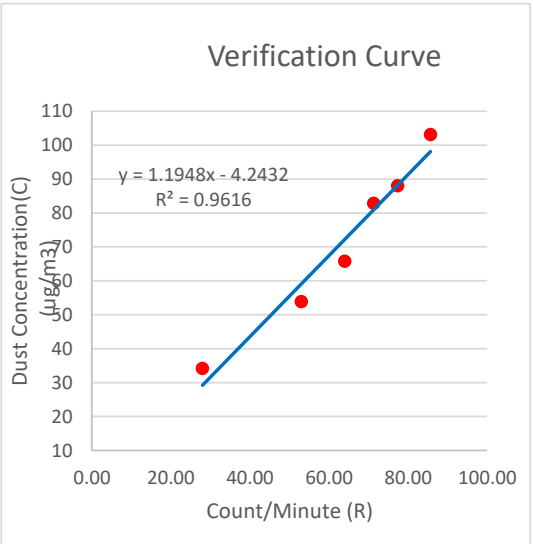
Verification Test Date: 9-Oct-22 to 16-Oct-22
Next Verification Test Date: 15-Oct-23
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 851820
Our Report Refrence No. RPT-22-HVS-0019

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1049	3465
Last Calibration Date		28-Sep-22	28-Jun-22
Next Calibration Date		28-Nov-22	29-Jun-23

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	9/10/2022	6210.34	6213.34	180.00	0.00122	28.00	5040	R221670/1	34
2	9/10/2022	6213.34	6216.36	181.20	0.00103	64.00	11597	R221670/2	66
3	9/10/2022	6216.36	6221.78	325.20	0.00120	85.67	27859	R221670/3	103
4	16/10/2022	6249.91	6252.92	180.60	0.00102	53.00	9571.8	R221671/1	54
5	16/10/2022	6252.92	6255.92	180.00	0.00114	77.33	13920	R221671/2	88
6	16/10/2022	6255.92	6261.94	361.20	0.00116	71.33	25766	R221671/3	83
					0.00113				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.1

By Linear Regression of y on x:
slope, mh= 1.1948
intercept,ch= -4.2432
*Correlation Coefficient,R= 0.9806
Verification Test Result: Strong Correlation, Results were accepted.
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 19-10-2022
Field Supervisor

ACUITY SUSTAINABILITY CONSULTING LIMITED

Website: www.acuityhk.com
Unit C, 11/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon.
Tel. : (852) 2698 6833
Fax.: (852) 2698 9383

Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

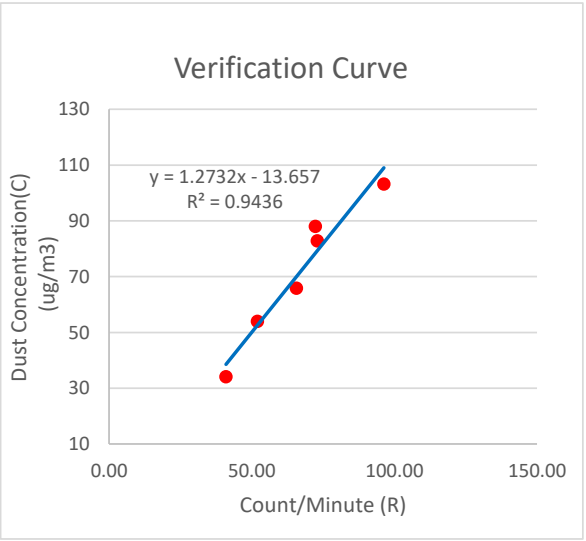
Verification Test Date: 9-Oct-22 to 16-Oct-22
Next Verification Test Date: 15-Oct-23
Unit-under-Test- Model No. Sibata LD-5R
Unit-under-Test Serial No. 882109
Our Report Refrence No. RPT-22-HVS-0015

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1049	3465
Last Calibration Date		28-Sep-22	28-Jun-22
Next Calibration Date		28-Nov-22	29-Jun-23

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	9/10/2022	6210.34	6213.34	180.00	0.00083	41.00	7380	R221670/1	34
2	9/10/2022	6213.34	6216.36	181.20	0.00100	65.67	11899	R221670/2	66
3	9/10/2022	6216.36	6221.78	325.20	0.00107	96.33	31328	R221670/3	103
4	16/10/2022	6249.91	6252.92	180.60	0.00104	52.00	9391.2	R221671/1	54
5	16/10/2022	6252.92	6255.92	180.00	0.00122	72.33	13020	R221671/2	88
6	16/10/2022	6255.92	6261.94	361.20	0.00113	73.00	26368	R221671/3	83
					0.00105				

K-Factor to be inputted in LD-5R (corrected 1 decimal point): 1.0

By Linear Regression of y on x:
slope, mh= 1.2732
intercept,ch= -13.6573
*Correlation Coefficient,R= 0.9714
Verification Test Result: Strong Correlation, Results were accepted.
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 19-10-2022
Field Supervisor

ACUITY SUSTAINABILITY CONSULTING LIMITED

Website: www.acuityhk.com

Unit C, 11/F, Ford Glory Plaza,
Nos. 37-39 Wing Hong Street,
Cheung Sha Wan, Kowloon.

Tel. : (852) 2698 6833
Fax.: (852) 2698 9383

PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

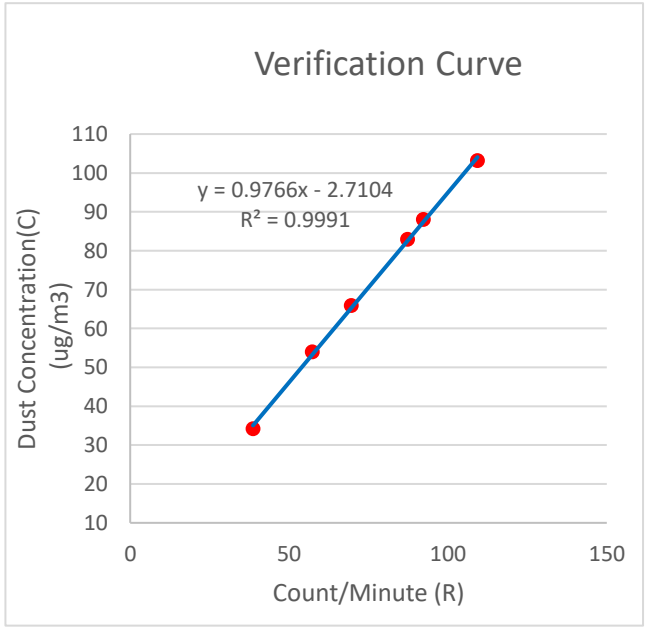
Verification Test Date: 9-Oct-22 to 16-Oct-22
Next Verification Test Date: 8-Oct-23
Unit-under-Test- Model No. PC-3A(E)
Unit-under-Test Serial No. JC-220710221
Our Report Refrence No. RPT-22-HVS-0033
Calibration Location: Emax

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1049	3465
Last Calibration Date		28-Sep-22	28-Jun-22
Next Calibration Date		28-Nov-22	29-Jun-23

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	9/10/2022	6210.34	6213.34	180.00	0.00088	39	6960	R221670/1	34
2	9/10/2022	6213.34	6216.36	181.20	0.00094	70	12624	R221670/2	66
3	9/10/2022	6216.36	6221.78	325.20	0.00094	109	35555	R221670/3	103
4	16/10/2022	6249.91	6252.92	180.60	0.00094	57	10354	R221671/1	54
5	16/10/2022	6252.92	6255.92	180.00	0.00095	92	16620	R221671/2	88
6	16/10/2022	6255.92	6261.94	361.20	0.00095	87	31545	R221671/3	83
					0.00094				

K-Factor to be inputted in PC-3A(E) (corrected 1 decimal point): 0.94

By Linear Regression of y on x:
slope, mh= 0.9766
intercept,ch= -2.7104
*Correlation Coefficient,R= 0.9996
Verification Test Result: Strong Correlation, Results were accepted.
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 19-10-2022
Field Supervisor

ACUITY SUSTAINABILITY CONSULTING LIMITED

Website: www.acityhk.com
Unit C, 11/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon.
Tel. : (852) 2698 6833
Fax.: (852) 2698 9383

PC-3A(E) K-Factor Verification Test by Total Suspended Particulates HVS Test Report

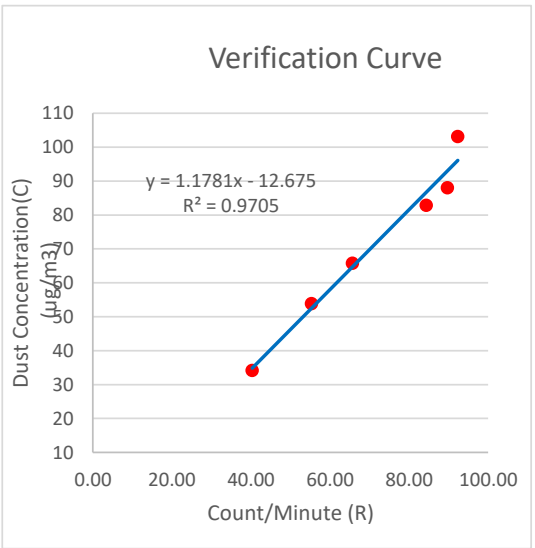
Verification Test Date: 9-Oct-22 to 16-Oct-22
Next Verification Test Date: 15-Oct-23
Unit-under-Test- Model No. PC-3A(E)
Unit-under-Test Serial No. JC-2110283
Our Report Refrence No. RPT-22-HVS-0022

Standard Equipment Information			
Verification Equipment Type		Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.		TE-5170X	TE-5025A
Equipment serial no.	MFC	1049	3465
Last Calibration Date		28-Sep-22	28-Jun-22
Next Calibration Date		28-Nov-22	29-Jun-23

Verification Test No.	Date	Time			K-Factor	Counts/ Minute (R)	Total Counts (TC)	TSP Sample ID No.	Dust Concentration (ug/m3), (C)
		Start-time	End-time	Elapsed Time (in min)	K-Factor (K=C/R)	x-axis			y axis
1	9/10/2022	6210.34	6213.34	180.00	0.00085	40.33	7260	R221670/1	34
2	9/10/2022	6213.34	6216.36	181.20	0.00100	65.67	11899	R221670/2	66
3	9/10/2022	6216.36	6221.78	325.20	0.00112	92.33	30027	R221670/3	103
4	16/10/2022	6249.91	6252.92	180.60	0.00097	55.33	9993.2	R221671/1	54
5	16/10/2022	6252.92	6255.92	180.00	0.00098	89.67	16140	R221671/2	88
6	16/10/2022	6255.92	6261.94	361.20	0.00098	84.33	30461	R221671/3	83
					0.00098				

K-Factor to be inputted in PC-3A(E) (corrected 1 decimal point): 1.0

By Linear Regression of y on x:
slope, mh= 1.1781
intercept,ch= -12.6747
*Correlation Coefficient,R= 0.9852
Verification Test Result: Strong Correlation, Results were accepted.
* If the Correlation Coefficient, R is <0.5. Checking and Re-verification are required.



Verified By: _____ Date: 19-10-2022
Field Supervisor

Certificate of Calibration

for

Description:	*Sound Level Meter*
Manufacturer:	*NTi Audio*
Type No.:	*XL2 (Serial No.: A2A-09696-E0)*
Microphone:	*ACO 7052 (Serial No.:68840)*
Preamplifier:	*NTi Audio M2211 MA220 (Serial No.:5287)*

Submitted by:

Customer:	*Acumen Environmental Engineering and Technologies Co. Ltd.*
Address:	*Unit D, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong*

Upon receipt for calibration, the instrument was found to be:

☑ **Within**
☐ **Outside**

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 24 March 2022

Date of calibration: 26 March 2022

Calibrated by: _____
Calibration Technician

Certified by: _____
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 26 March 2022

ACOUSTICS AND AIR TESTING LABORATORY CO. LTD. (A+A)*L

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

1. *Calibration Precaution:*

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

- The results presented are the mean of 3 measurements at each calibration point.

2. *Calibration Conditions:*

Air Temperature:	22.6 °C
Air Pressure:	1006 hPa
Relative Humidity:	74.5 %

3. *Calibration Equipment:*

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	HOKLAS

4. *Calibration Results*

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
			104		104.1	±0.3
			114		114.1	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
		Slow			94.1	±0.3

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dB SPL	Fast	94	31.5	94.0	±2.0
				63	94.1	±1.5
				125	94.1	±1.5
				250	94.0	±1.4
				500	94.1	±1.4
				1000	94.1	Ref
				2000	94.3	±1.6
				4000	94.9	±1.6
				8000	93.6	+2.1; -3.1

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBA SPL	Fast	94	31.5	54.7	-39.4 ±2.0
				63	67.9	-26.2 ±1.5
				125	78.0	-16.1 ±1.5
				250	85.4	-8.6 ±1.4
				500	90.9	-3.2 ±1.4
				1000	94.1	Ref
				2000	95.5	+1.2 ±1.6
				4000	95.9	+1.0 ±1.6
				8000	92.5	-1.1+2.1; -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
30-130	dBC SPL	Fast	94	31.5	91.0	-3.0 ±2.0
				63	93.2	-0.8 ±1.5
				125	93.9	-0.2 ±1.5
				250	94.0	-0.0 ±1.4
				500	94.1	-0.0 ±1.4
				1000	94.1	Ref
				2000	94.1	-0.2 ±1.6
				4000	94.1	-0.8 ±1.6
				8000	90.6	−3.0 +2.1: −3.1

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

5. *Calibration Results Applied*

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.05
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

(A+A)*L Acoustics and Air Testing Laboratory Co. Ltd.
聲學及空氣測試實驗室有限公司

Certificate of Calibration

for

Description:	*Sound Level Meter*
Manufacturer:	*NTi Audio*
Type No.:	*XL2 (Serial No.: A2A-09696-E0)*
Microphone:	*ACO 7052 (Serial No.:68914)*
Preamplifier:	*NTi Audio MA220 (Serial No.:10390)*

Submitted by:

Customer:	*Acuity Sustainability Consulting Limited*
Address:	*Unit E, 12/F, Ford Glory Plaza,*
	Nos. 37-39 Wing Hong Street,
	Cheung Sha Wan, Kowloon, Hong Kong

Upon receipt for calibration, the instrument was found to be:

☑ **Within (31.5Hz – 4kHz)**
☐ **Outside**

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 30 March 2023

Date of calibration: 04 April 2023

Date of NEXT calibration: 03 April 2024

Calibrated by: _____
Calibration Technician

Certified by: _____
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 04 April 2023

Certificate No.: APJ22-164-CC002

ACOUSTICS AND AIR TESTING LABORATORY CO. LTD. (A+A)*L

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

1. *Calibration Precaution:*

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

- The results presented are the mean of 3 measurements at each calibration point.

2. *Calibration Conditions:*

Air Temperature:	21.5 °C
Air Pressure:	1005 hPa
Relative Humidity:	71.4 %

3. *Calibration Equipment:*

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS

4. *Calibration Results*

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	±0.4

Linearity

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
			104		104.1	±0.3
			114		114.1	±0.3

Time Weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	1000	94.1	Ref
		Slow			94.1	±0.3

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dB SPL	Fast	94	31.5	94.3	±2.0
				63	94.3	±1.5
				125	94.3	±1.5
				250	94.2	±1.4
				500	94.2	±1.4
				1000	94.1	Ref
				2000	93.8	±1.6
				4000	93.1	±1.6

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBA SPL	Fast	94	31.5	55.0	-39.4 ±2.0
				63	68.2	-26.2 ±1.5
				125	78.2	-16.1 ±1.5
				250	85.6	-8.6 ±1.4
				500	91.0	-3.2 ±1.4
				1000	94.1	Ref
				2000	95.0	+1.2 ±1.6
				4000	94.1	+1.0 ±1.6

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz		
30-130	dBC SPL	Fast	94	31.5	91.3	-3.0 ±2.0
				63	93.5	-0.8 ±1.5
				125	94.1	-0.2 ±1.5
				250	94.2	-0.0 ±1.4
				500	94.2	-0.0 ±1.4
				1000	94.1	Ref
				2000	93.6	-0.2 ±1.6
				4000	92.3	-0.8 ±1.6

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

5. *Calibration Results Applied*

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.15
	63 Hz	± 0.10
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:
The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946
Homepage: http://www.aa-lab.com E-mail : inquiry@aa-lab.com

Certificate No. D224349E

JCSS 0197

CALIBRATION CERTIFICATE

Product	:	SOUND CALIBRATOR
Type	:	NC-75
Serial number	:	34724243
Manufacturer	:	RION CO., LTD.
Calibration quantities	:	Sound pressure level (with reference standard microphone)
Calibration method	:	Measured by specified secondary standard microphone according to JCSS calibration procedure specified by RION.
Ambient conditions	:	Temperature 23.9 ℃, Relative humidity 49 %, Static pressure 99.9 kPa
Calibration date	:	05/07/2022 (DD/MM/YYYY)
Calibration location	:	3-20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan RION CO., LTD. Calibration Room

We hereby certify that the results of this calibration were as follows.

Issue date : 11/07/2022 (DD/MM/YYYY)

Junichi Kawamura
Manager
Quality Assurance Section,
Quality Assurance Department,
Environmental Instrument Division,
RION CO., LTD.
3-20-41 Higashimotomachi, Kokubunji,
Tokyo 185-8533, Japan

Certificate No. D224349E

CALIBRATION RESULT

1. Sound pressure level (with reference standard microphone)

Measured value	Expanded uncertainty *1
93.99 dB	0.09 dB

Specified secondary standard microphone:
Type : 4160
Serial number : 2973341
Reference Sound pressure : 2×10^{-5} Pa

*1 Defines an interval estimated to have a level of confidence of approximately 95 %.
Coverage factor k=2

Calibration result is the calibration value in ambient conditions during calibration.

BE OUT OF JCSS CALIBRATION

1. Frequency

Measured value	Measurement uncertainty (k=2)
1000.0 Hz	3.9×10^{-4} Hz

Working measurement standard universal counter:
Type : 53132A
Serial number : MY40005574
(JCSS Calibration Certificate No. 21081499079575510)

2. Total distortion

Measured value
0.2 %

Working measurement standard distortion meter:
Type : VA-2230A
Serial number : 11076061
(A2LA Calibration Certificate No. 1501-03080)

- closing -

RION

Appendix B

Baseline Monitoring Schedule

Contract No. 21/WSD/21
Relocation of Diamond Hill Fresh Water and
Salt Water Service Reservoirs to Caverns

Baseline Environmental Monitoring Schedule

February 2023

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	28 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)				

March 2023

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			1 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	2 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	3 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	4 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)
5 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	6 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	7 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	8 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	9 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	10 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	11 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)
12 Baseline Air Quality and Noise Monitoring (DM-1, DM-2, DM-3, DM-4a, NM-2, NM-3, NM-4a)	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Air Quality Monitoring Station:
DM-1 - Tennis Court near Tin Ma Court
DM-2 - Chun Sing House, Tin Ma Court
DM-3 - Grace Methodist Church Kindergarten
DM-4a - Road pavement near Wang King House, Tin Wang Court

Noise Monitoring Station:
NM-2 - Chun Sing House, Tin Ma Court
NM-3 - Grace Methodist Church Kindergarten
NM-4a - Road pavement near Wang King House, Tin Wang Court

Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Baseline Environmental Monitoring Schedule (for Additional Air Quality Monitoring at DM-4 and Noise Monitoring at NM-4, NM-5 and NM-6) (Version 1.1)

May 2023

Sun	Mon	Tue	Wed	Thur	Fri	Sat
	1	2 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	3 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	4 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	5 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	6 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)
7 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	8 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	9 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	10 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	11 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	12 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	13 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)
14 (**Cancelled due to inclement weathe**r)	15 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	16 Baseline Air Quality and Noise Monitoring (DM-4, NM-4, NM-5, NM-6)	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Remark: Due to inclement weather on 14 May 2023, the baseline monitoring was cancelled and rescheduled to 16 May 2023.

Air Quality Monitoring Station:
DM-4 - Block 6, Tsui Chuk Garden

Noise Monitoring Stations:
NM-4 - Block 6, Tsui Chuk Garden
NM-5 - Wo Tin House, Shatin Pass Estate
NM-6 - Sheung Fung Street Customs Staff Quarter

Appendix C

Baseline 1-hour TSP Monitoring Results and Graphical Presentation

Appendix C - 1-hour TSP Monitoring Results

DM-1 - Tennis Court near Tin Ma Court			
Date	Time	Weather	Particulate Concentration ($\mu g/m^3$)
27 February 2023	11:00	Sunny	68
	12:00		74
	13:00		77
28 February 2023	9:42	Sunny	72
	10:42		80
	11:42		79
1 March 2023	9:35	Sunny	73
	10:35		76
	11:35		83
2 March 2023	9:29	Sunny	77
	10:29		79
	11:29		84
3 March 2023	9:57	Sunny	68
	10:57		75
	11:57		74
4 March 2023	9:52	Fine	72
	10:52		78
	11:52		83
5 March 2023	9:56	Sunny	70
	10:56		72
	11:56		77
6 March 2023	10:47	Sunny	83
	11:47		74
	12:47		85
7 March 2023	10:43	Sunny	84
	11:43		78
	12:43		74
8 March 2023	11:49	Sunny	84
	12:49		72
	13:49		88
9 March 2023	10:39	Sunny	83
	11:39		73
	12:39		85
10 March 2023	13:13	Sunny	76
	14:13		84
	15:13		88
11 March 2023	9:57	Sunny	68
	10:57		76
	11:57		80
12 March 2023	15:30	Cloudy	69
	16:30		72
	17:30		73
		Minimum	68
		Maximum	88
		Average	77

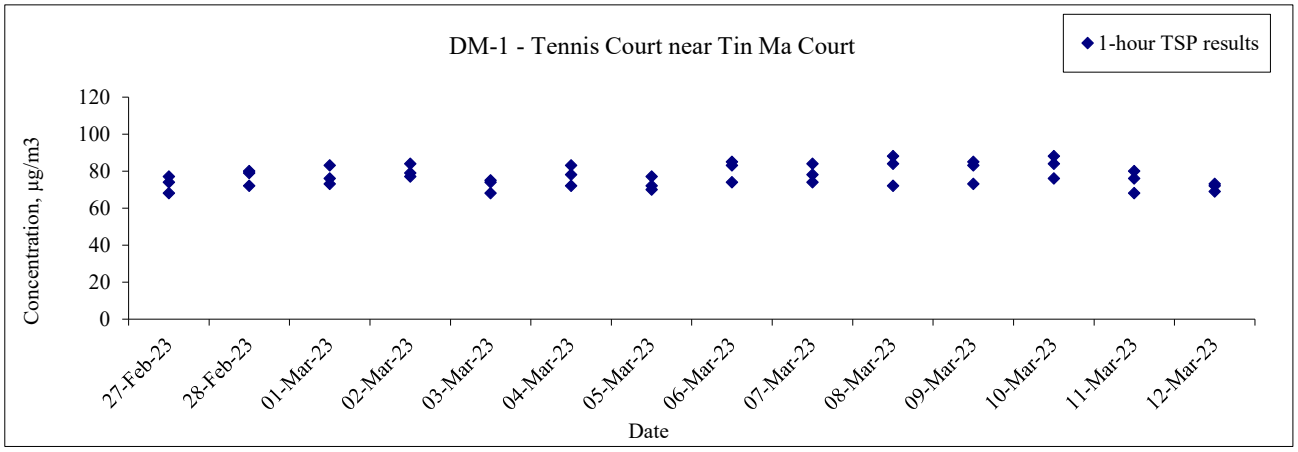
DM-2 - Chun Sing House, Tin Ma Court			
Date	Time	Weather	Particulate Concentration (μg/m^3)
27 February 2023	10:14	Sunny	58
	11:14		65
	12:14		61
28 February 2023	9:55	Sunny	54
	10:55		59
	11:55		67
1 March 2023	9:52	Sunny	53
	10:52		59
	11:52		64
2 March 2023	10:08	Sunny	59
	11:08		64
	12:08		67
3 March 2023	10:19	Sunny	54
	11:19		64
	12:19		55
4 March 2023	10:11	Fine	51
	11:11		56
	12:11		65
5 March 2023	10:17	Sunny	52
	11:17		64
	12:17		59
6 March 2023	9:59	Sunny	64
	10:59		55
	11:59		62
7 March 2023	9:54	Sunny	62
	10:54		69
	11:54		55
8 March 2023	9:55	Sunny	64
	10:55		54
	11:55		52
9 March 2023	9:51	Sunny	55
	10:51		67
	11:51		59
10 March 2023	9:57	Sunny	55
	10:57		68
	11:57		60
11 March 2023	10:12	Sunny	68
	11:12		65
	12:12		69
12 March 2023	15:09	Cloudy	50
	16:09		52
	17:09		49
		Minimum	49
		Maximum	69
		Average	60

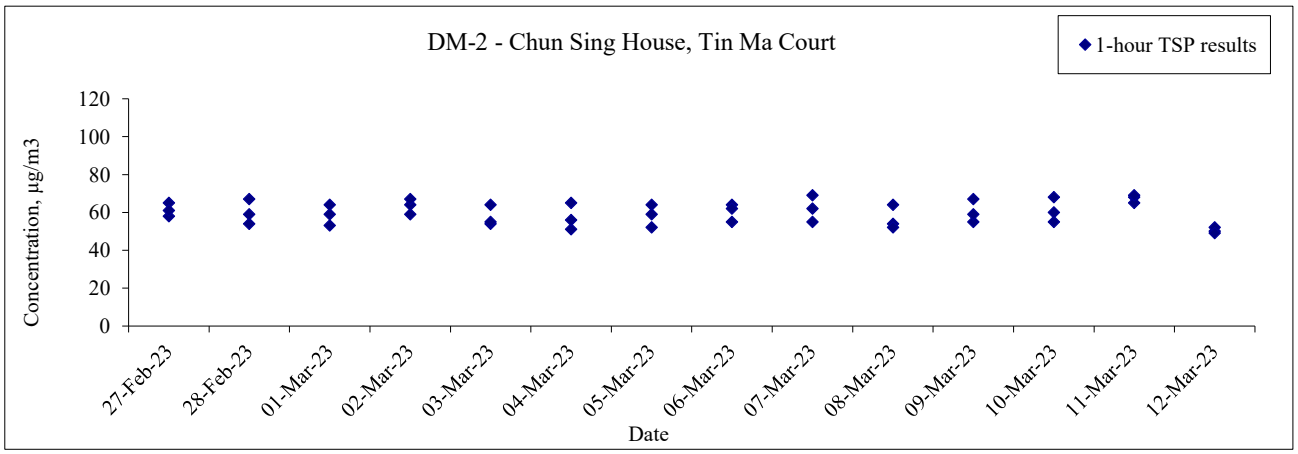
DM-3 - Grace Methodist Church Kindergarten			
Date	Time	Weather	Particulate Concentration (μg/m^3)
27 February 2023	9:02	Sunny	64
	10:02		54
	11:02		69
28 February 2023	8:54	Sunny	56
	9:54		66
	10:54		69
1 March 2023	8:50	Sunny	57
	9:50		61
	10:50		62
2 March 2023	9:04	Sunny	56
	10:04		69
	11:04		68
3 March 2023	9:07	Sunny	67
	10:07		59
	11:07		66
4 March 2023	9:01	Fine	62
	10:01		54
	11:01		59
5 March 2023	9:10	Sunny	54
	10:10		60
	11:10		59
6 March 2023	9:08	Sunny	55
	10:08		59
	11:08		63
7 March 2023	9:10	Sunny	53
	10:10		57
	11:10		65
8 March 2023	9:09	Sunny	58
	10:09		60
	11:09		68
9 March 2023	9:05	Sunny	63
	10:05		67
	11:05		56
10 March 2023	9:09	Sunny	55
	10:09		65
	11:09		64
11 March 2023	9:15	Sunny	60
	10:15		67
	11:15		63
12 March 2023	10:06	Cloudy	61
	11:06		62
	12:06		60
		Minimum	53
		Maximum	69
		Average	61

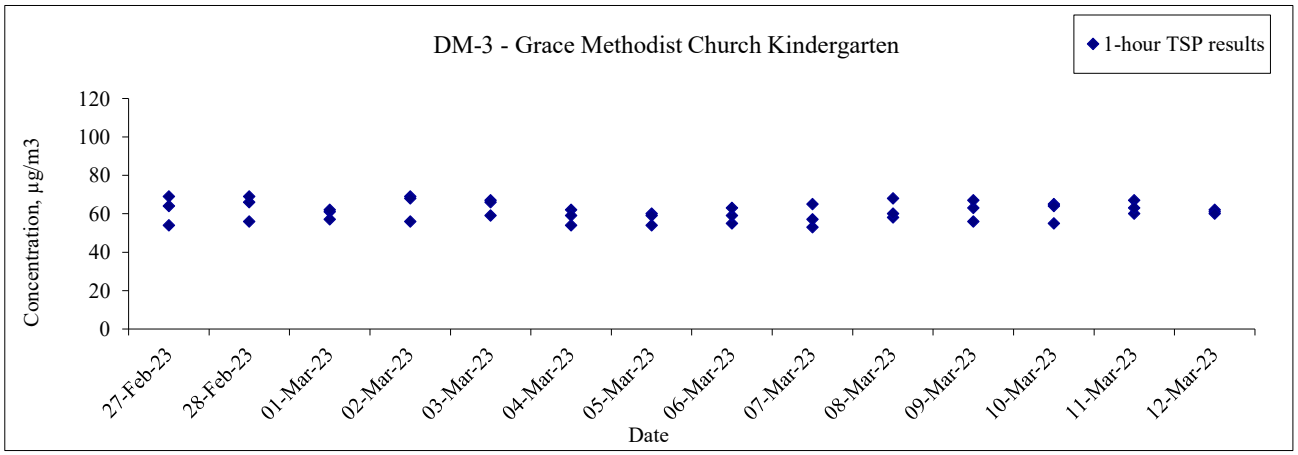
DM-4a - Road pavement near Wang King House, Tin Wang Court			
Date	Time	Weather	Particulate Concentration (μg/m^3)
27 February 2023	9:33	Sunny	60
	10:33		66
	11:33		61
28 February 2023	12:27	Sunny	63
	13:27		58
	14:27		68
1 March 2023	12:37	Sunny	70
	13:37		59
	14:37		66
2 March 2023	12:47	Sunny	64
	13:47		55
	14:47		71
3 March 2023	12:55	Sunny	62
	13:55		69
	14:55		72
4 March 2023	12:56	Fine	68
	13:56		65
	14:56		60
5 March 2023	12:49	Sunny	58
	13:49		67
	14:49		59
6 March 2023	12:17	Sunny	68
	13:17		66
	14:17		73
7 March 2023	12:15	Sunny	57
	13:15		61
	14:15		68
8 March 2023	12:26	Sunny	59
	13:26		61
	14:26		67
9 March 2023	12:17	Sunny	63
	13:17		57
	14:17		60
10 March 2023	13:28	Sunny	73
	14:28		62
	15:28		58
11 March 2023	13:01	Sunny	55
	14:01		60
	15:01		72
12 March 2023	14:05	Cloudy	69
	15:05		61
	16:05		66
		Minimum	55
		Maximum	73
		Average	64

DM-4 - Block 6, Tsui Chuk Garden			
Date	Time	Weather	Particulate Concentration (μg/m^3)
2 May 2023	11:14	Fine	67
	12:14		62
	13:14		78
3 May 2023	10:31	Fine	73
	11:31		85
	12:31		79
4 May 2023	10:44	Sunny	79
	11:44		84
	12:44		85
5 May 2023	12:40	Sunny	68
	13:40		74
	14:40		82
6 May 2023	11:01	Fine	75
	12:01		66
	13:01		68
7 May 2023	8:10	Cloudy	52
	9:10		61
	10:10		58
8 May 2023	12:25	Cloudy	49
	13:25		56
	14:25		52
9 May 2023	14:06	Fine	75
	15:06		68
	16:06		63
10 May 2023	12:33	Fine	79
	13:33		83
	14:33		72
11 May 2023	11:24	Fine	67
	12:24		75
	13:24		78
12 May 2023	9:23	Cloudy	60
	10:23		67
	11:23		74
13 May 2023	10:37	Cloudy	64
	11:37		58
	12:37		61
15 May 2023	11:02	Fine	65
	12:02		78
	13:02		70
16 May 2023	12:34	Fine	65
	13:34		72
	14:34		69
		Minimum	49
		Maximum	85
		Average	69

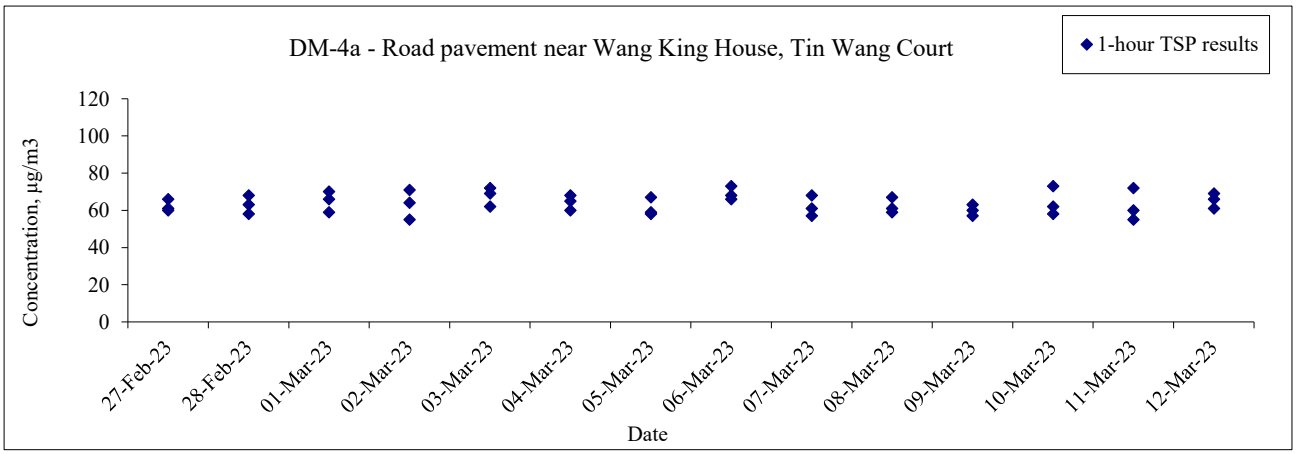
Baseline 1-hour TSP Concentration Level

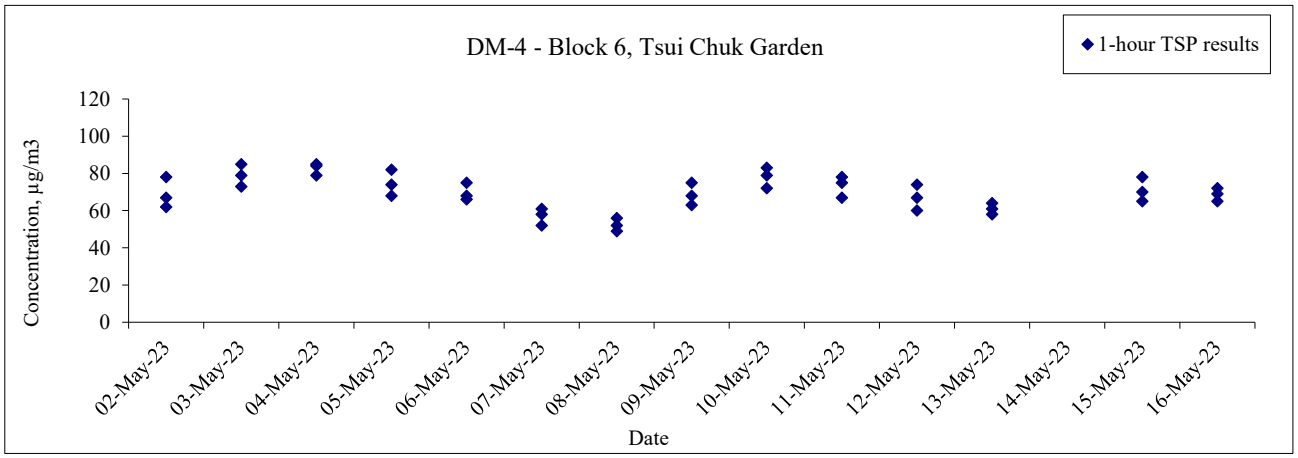






Baseline 1-hour TSP Concentration Level





Appendix D

Baseline Noise Monitoring Results and Graphical Presentation

Appendix D - Baseline Noise Monitoring Results

Daytime Noise Level at Chun Sing House, Tin Ma Court (NM-2)

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
27 Feb 2023	Sunny	10:15	71.3	72.4	69.9	71.3
		10:20	70.8	72.3	69.3	
		10:25	71.4	72.8	70.0	
		10:30	71.8	73.2	70.6	
		10:35	71.0	73.0	69.4	
		10:40	71.5	74.1	70.2	
28 Feb 2023	Sunny	9:57	71.9	74.3	69.4	72.8
		10:02	72.7	75.5	70.2	
		10:07	71.6	74.2	69.3	
		10:12	73.3	75.3	70.0	
		10:17	73.1	76.0	70.4	
		10:22	73.9	75.9	71.1	
1 Mar 2023	Sunny	9:54	71.3	73.8	68.2	70.2
		9:59	69.0	71.8	67.7	
		10:04	71.4	73.5	68.5	
		10:09	70.6	72.7	68.1	
		10:14	68.7	71.4	67.5	
		10:19	69.1	72.7	68.4	
2 Mar 2023	Sunny	10:12	69.6	72.3	67.1	71.7
		10:17	71.3	73.4	68.8	
		10:22	71.9	74.5	68.1	
		10:27	73.4	75.6	69.4	
		10:32	72.3	75.0	69.2	
		10:37	70.4	73.6	67.7	
3 Mar 2023	Sunny	10:23	70.5	72.6	68.4	70.6
		10:28	72.1	74.1	69.5	
		10:33	69.8	73.4	67.7	
		10:38	69.5	72.8	67.1	
		10:43	69.9	72.4	67.6	
		10:48	71.2	74.3	68.0	
4 Mar 2023	Fine	10:16	69.1	71.5	67.8	69.9
		10:21	69.6	72.1	67.4	
		10:26	71.1	73.5	68.2	
		10:31	70.3	72.8	67.4	
		10:36	69.2	71.8	68.0	
		10:41	69.7	72.0	67.7	
5 Mar 2023	Sunny	10:20	68.6	71.2	66.5	68.8
		10:25	68.3	70.7	66.1	
		10:30	68.0	71.1	66.7	
		10:35	70.2	72	67.2	
		10:40	68.9	71.5	66.9	
		10:45	68.4	70.6	65.6	

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
6 Mar 2023	Sunny	10:05	71.1	73.4	68.5	70.5
		10:10	72.2	73.9	69.8	
		10:15	70.7	72.8	68.4	
		10:20	69.5	72.0	68.1	
		10:25	69.6	72.7	67.5	
		10:30	69.3	71.9	67.3	
7 Mar 2023	Sunny	10:01	70.2	72.0	67.9	70.5
		10:06	69.9	71.5	67.5	
		10:11	70.9	71.9	68.1	
		10:16	70.4	72.2	68.2	
		10:21	70.6	71.8	68.0	
		10:26	70.7	72.1	68.7	
8 Mar 2023	Sunny	10:03	70.6	72.8	68.5	71.5
		10:08	71.4	73.1	68.9	
		10:13	72.1	73.4	69.0	
		10:18	72.4	73.8	69.5	
		10:23	71.7	73.3	68.8	
		10:28	70.6	72.0	68.1	
9 Mar 2023	Sunny	9:53	71.2	72.8	68.9	71.4
		9:58	70.4	71.8	68.5	
		10:03	71.6	72.7	69.2	
		10:08	72.8	73.6	68.1	
		10:13	71.7	73.1	68.1	
		10:18	70.2	72.9	68.6	
10 Mar 2023	Sunny	10:02	70.0	71.6	67.6	69.7
		10:07	69.4	70.8	66.9	
		10:12	69.6	71.0	67.4	
		10:17	69.8	70.8	67.6	
		10:22	69.3	71.5	67.5	
		10:27	70.2	71.3	67.7	
11 Mar 2023	Sunny	10:16	69.6	71.0	66.9	70.8
		10:21	70.3	72.4	67.7	
		10:26	71.5	72.7	68.0	
		10:31	70.4	72.0	68.1	
		10:36	70.8	72.3	67.5	
		10:41	71.9	72.8	66.4	
12 Mar 2023	Cloudy	16:10	67.3	70.2	63.6	69.1
		16:15	68.4	72.4	64.9	
		16:20	68.9	73.6	64.3	
		16:25	70.2	72.4	66.2	
		16:30	69.2	73.1	64.5	
		16:35	70.1	73.6	63.6	
					Min:	68.8
					Max:	72.8
					Average:	70.6

Daytime Noise Level at Grace Methodist Church Kindergarten (NM-3)

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
27 Feb 2023	Sunny	9:07	65.4	68.9	57.9	66.2
		9:12	66.1	69.6	58.4	
		9:17	66.4	69.8	58.6	
		9:22	65.8	69.0	59.2	
		9:27	66.1	69.3	58.2	
		9:32	67.0	70.1	58.9	
28 Feb 2023	Sunny	9:01	66.4	68.5	56.6	66.8
		9:06	65.8	67.9	56.1	
		9:11	66.1	68.3	56.5	
		9:16	67.6	70.0	57.4	
		9:21	67.2	69.7	58.0	
		9:26	67.4	70.3	57.8	
1 Mar 2023	Sunny	8:54	65.8	68.5	56.2	66.8
		8:59	67.5	69.9	58.5	
		9:04	67.1	69.3	57.1	
		9:09	66.0	68.8	56.7	
		9:14	67.7	70.0	58.4	
		9:19	66.4	68.9	58.7	
2 Mar 2023	Sunny	9:10	65.9	68.6	56.1	65.9
		9:15	66.3	68.3	56.6	
		9:20	65.6	68.2	56.0	
		9:25	66.7	67.9	55.8	
		9:30	64.9	67.0	55.3	
		9:35	65.7	67.4	55.9	
3 Mar 2023	Sunny	9:15	65.9	68.0	56.9	64.9
		9:20	64.1	67.3	54.4	
		9:25	65.5	67.6	55.7	
		9:30	63.3	66.8	54.9	
		9:35	65.2	67.9	56.4	
		9:40	64.8	67.2	54.7	
4 Mar 2023	Fine	9:09	63.8	67.1	54.4	64.9
		9:14	65.5	67.8	55.7	
		9:19	64.0	66.9	54.8	
		9:24	65.2	67.4	55.5	
		9:29	64.7	67.6	55.8	
		9:34	65.8	68.1	56.2	
5 Mar 2023	Sunny	9:17	64.4	68.1	55.4	63.6
		9:22	63.1	66.9	54.0	
		9:27	63.8	66.4	53.8	
		9:32	62.3	65.9	54.2	
		9:37	64.1	66.8	54.9	
		9:42	63.5	67.5	53.3	

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
6 Mar 2023	Sunny	9:12	64.1	67.9	54.8	65.1
		9:17	65.4	68.7	55.5	
		9:22	64.8	68.4	53.5	
		9:27	65.5	68.6	54.6	
		9:32	64.7	68.2	55.2	
		9:37	65.9	67.7	54.7	
7 Mar 2023	Sunny	9:17	65.8	68.3	56.7	64.8
		9:22	64.1	67.7	55.1	
		9:27	65.8	68.0	55.3	
		9:32	64.0	67.2	54.9	
		9:37	64.7	67.5	55.0	
		9:42	64.2	66.9	54.6	
8 Mar 2023	Sunny	9:13	64.7	67.7	55.1	65.1
		9:18	65.8	69.5	56.4	
		9:23	65.0	68.3	55.9	
		9:28	64.9	68.1	55.5	
		9:33	65.6	68.6	56.0	
		9:38	64.3	67.8	55.4	
9 Mar 2023	Sunny	9:09	64.0	67.4	54.2	65.0
		9:14	65.2	68.1	55.0	
		9:19	64.8	67.9	55.8	
		9:24	65.2	68.7	55.9	
		9:29	65.7	68.9	56.5	
		9:34	65.2	68.2	56.1	
10 Mar 2023	Sunny	9:14	64.0	67.4	55.0	64.8
		9:19	64.9	68.4	55.6	
		9:24	64.5	68.1	54.7	
		9:29	64.2	67.3	54.9	
		9:34	65.1	68.7	55.7	
		9:39	65.8	69.4	55.4	
11 Mar 2023	Sunny	9:18	64.7	68.1	54.6	65.1
		9:23	65.9	68.4	55.1	
		9:28	64.2	67.5	54.3	
		9:33	66.0	68.9	55.6	
		9:38	65.5	68.3	55.2	
		9:43	64.1	67.6	54.7	
12 Mar 2023	Cloudy	10:23	63.6	68.1	58.1	64.0
		10:28	64.5	69.4	60.2	
		10:33	63.1	67.1	58.2	
		10:38	64.7	69.6	59.2	
		10:43	63.6	68.4	60.2	
		10:48	64.1	68.8	58.1	
					Min:	63.6
					Max:	66.8
					Average:	65.2

Daytime Noise Level at Road pavement near Wang King House, Tin Wang Court (NM-4a)

Date	Weather	Start Time	dB(A)				
			Leq	L10	L90	Leq(30min)	With Free-Field correction
27 Feb 2023	Sunny	9:33	68.5	70.0	57.8	70.0	73.0
		9:38	70.4	71.6	60.2		
		9:43	70.9	72.7	60.0		
		9:48	68.3	69.9	57.4		
		9:53	71.0	72.8	60.5		
		9:58	69.9	71.8	58.5		
28 Feb 2023	Sunny	12:28	69.4	71.7	57.0	69.0	72.0
		12:33	68.7	70.6	56.6		
		12:38	68.1	70.4	56.9		
		12:43	69.6	72.0	58.4		
		12:48	69.3	71.4	57.7		
		12:53	68.8	71.6	57.2		
1 Mar 2023	Sunny	12:40	69.1	71.6	59.0	68.8	71.8
		12:45	68.6	70.8	57.9		
		12:50	68.3	70.3	57.8		
		12:55	68.8	71.4	58.1		
		13:00	68.3	71.1	57.5		
		13:05	69.4	72.0	58.9		
2 Mar 2023	Sunny	12:49	68.8	72.1	56.2	68.5	71.5
		12:54	67.7	71.3	55.6		
		12:59	69.5	72.7	57.0		
		13:04	69.1	72.0	56.4		
		13:09	67.9	71.4	55.5		
		13:14	67.5	71.7	54.8		
3 Mar 2023	Sunny	12:58	68.5	72.4	55.7	69.8	72.8
		13:03	69.5	72.5	56.8		
		13:08	69.2	72.1	57.1		
		13:13	71.8	73.3	56.2		
		13:18	69.3	72.8	56.0		
		13:23	69.5	73.1	56.5		
4 Mar 2023	Fine	12:58	69.6	72.5	56.4	69.8	72.8
		13:03	70.7	73.2	57.1		
		13:08	68.5	72.1	55.9		
		13:13	69.1	72.5	55.7		
		13:18	70.6	73.7	56.1		
		13:23	69.9	73.6	55.3		
5 Mar 2023	Sunny	12:53	70.4	72.3	56.0	69.2	72.2
		12:58	69.6	71.8	55.6		
		13:03	68.5	72.5	55.1		
		13:08	68.3	71.9	54.7		
		13:13	69.3	72.8	54.1		
		13:18	69.0	72.1	54.5		

Date	Weather	Start Time	dB(A)				
			Leq	L10	L90	Leq(30min)	With Free-Field correction
6 Mar 2023	Sunny	12:20	69.7	72.2	57.5	70.5	73.5
		12:25	70.2	73.7	57.9		
		12:30	70.6	72.5	58.3		
		12:35	71.3	73.8	57.0		
		12:40	70.0	72.1	56.5		
		12:45	70.9	73.0	56.8		
7 Mar 2023	Sunny	12:21	71.8	73.0	56.8	70.7	73.7
		12:26	71.0	72.2	56.6		
		12:31	70.1	71.4	55.1		
		12:36	68.4	71.2	54.8		
		12:41	70.5	72.0	55.4		
		12:46	71.5	72.6	55.9		
8 Mar 2023	Sunny	12:27	70.6	71.0	56.6	69.9	72.9
		12:32	69.7	72.9	56.3		
		12:37	68.4	72.1	55.8		
		12:42	71.9	73.8	56.1		
		12:47	68.3	72.7	55.4		
		12:52	69.6	73.5	56.0		
9 Mar 2023	Sunny	12:21	69.3	72.5	56.4	69.4	72.4
		12:26	68.2	71.4	56.2		
		12:31	69.8	73.9	57.5		
		12:36	70.5	73.3	55.8		
		12:41	68.6	70.9	55.7		
		12:46	69.4	71.8	56.7		
10 Mar 2023	Sunny	13:31	68.1	72.0	55.2	70.4	73.4
		13:36	68.8	72.7	56.6		
		13:41	71.9	73.6	58.7		
		13:46	70.5	74.1	57.9		
		13:51	71.0	74.6	56.0		
		13:56	70.8	73.9	56.5		
11 Mar 2023	Sunny	13:03	70.7	72.5	56.2	70.0	73.0
		13:08	71.0	73.3	57.5		
		13:13	70.1	72.8	56.5		
		13:18	68.8	72.4	56.4		
		13:23	69.5	71.9	55.2		
		13:28	69.2	72.7	55.5		
12 Mar 2023	Cloudy	14:10	67.1	70.4	64.3	68.3	71.3
		14:15	68.1	71.6	63.1		
		14:20	68.4	71.9	63.9		
		14:25	68.0	71.4	63.4		
		14:30	68.9	72.6	64.1		
		14:35	69.0	73.1	63.6		
					Min:	68.3	71.3
					Max:	70.7	73.7
					Average:	69.6	72.6

Daytime Noise Level at Block 6, Tsui Chuk Garden (NM-4)

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
2 May 2023	Fine	11:15	65.1	66.2	63.9	65.3
		11:20	65.7	66.7	64.3	
		11:25	65.4	66.6	64.0	
		11:30	65.3	66.4	64.3	
		11:35	65.0	66.1	63.6	
		11:40	65.4	67.1	63.1	
3 May 2023	Fine	10:35	64.4	66.0	63.1	65.0
		10:40	65.2	66.8	63.4	
		10:45	64.7	65.9	63.5	
		10:50	65.0	66.4	63.5	
		10:55	64.9	66.8	62.9	
		11:00	65.5	67.0	63.6	
4 May 2023	Sunny	10:47	64.6	66.2	63.5	64.8
		10:52	64.6	66.8	63.9	
		10:57	64.1	65.2	63.3	
		11:02	64.9	65.8	63.4	
		11:07	65.1	66.4	64.2	
		11:12	65.3	66.1	63.9	
5 May 2023	Sunny	12:44	65.7	66.6	63.0	64.8
		12:49	65.1	66.5	63.4	
		12:54	64.6	65.8	63.2	
		12:59	64.2	65.3	63.0	
		13:04	65.0	67.2	62.7	
		13:09	63.8	65.1	62.6	
6 May 2023	Fine	11:05	65.1	66.6	64.0	64.9
		11:10	65.4	67.0	63.9	
		11:15	64.7	65.9	63.7	
		11:20	64.6	65.5	62.8	
		11:25	64.9	66.1	63.3	
		11:30	64.5	65.8	62.7	
7 May 2023	Cloudy	8:14	60.2	61.6	58.6	60.6
		8:19	60.9	62.4	59.0	
		8:24	60.5	62.2	59.1	
		8:29	60.2	62.5	58.4	
		8:34	61.1	63.0	59.5	
		8:39	60.8	62.5	58.7	
8 May 2023	Cloudy	12:27	64.0	66.6	63.1	64.7
		12:32	65.3	65.9	62.5	
		12:37	65.1	66.4	63.7	
		12:42	65.4	66.1	63.6	
		12:47	64.0	66.0	63.0	
		12:52	64.4	66.2	62.7	

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
9 May 2023	Fine	14:10	64.4	65.7	62.9	64.6
		14:15	65.0	66.1	63.1	
		14:20	64.1	65.9	62.8	
		14:25	65.0	66.4	63.5	
		14:30	64.8	65.6	63.3	
		14:35	63.9	65.2	63.0	
10 May 2023	Fine	12:39	64.9	65.8	63.0	65.5
		12:44	65.2	66.7	63.3	
		12:49	66.6	66.9	64.4	
		12:54	66.0	66.5	64.0	
		12:59	64.8	65.9	63.5	
		13:04	65.0	65.8	63.2	
11 May 2023	Fine	11:29	64.8	66.0	63.4	64.8
		11:34	64.7	66.1	64.0	
		11:39	65.1	66.5	63.7	
		11:44	64.7	65.8	63.8	
		11:49	64.9	65.7	63.5	
		11:54	64.4	65.2	63.1	
12 May 2023	Cloudy	9:26	64.0	66.7	63.6	64.6
		9:31	64.7	65.3	63.1	
		9:36	64.5	66.1	63.4	
		9:41	65.4	66.6	62.9	
		9:46	64.0	65.8	62.7	
		9:51	65.1	65.4	63.0	
13 May 2023	Cloudy	10:39	65.4	66.7	64.1	64.8
		10:44	64.8	66.2	63.3	
		10:49	64.1	65.9	63.4	
		10:54	64.7	66.0	62.9	
		10:59	65.7	66.4	63.8	
		11:04	64.1	65.8	63.5	
15 May 2023	Fine	11:06	64.6	65.9	63.3	65.4
		11:11	65.1	65.8	64.3	
		11:16	65.1	65.9	64.1	
		11:21	65.5	66.1	64.7	
		11:26	66.5	67.8	64.8	
		11:31	65.1	66.2	63.8	
16 May 2023	Fine	12:38	64.2	65.2	63.0	64.4
		12:43	64.4	65.5	63.2	
		12:48	64.3	65.4	62.9	
		12:53	64.3	65.6	62.8	
		12:58	64.6	65.7	63.3	
		13:03	64.4	65.6	63.2	
					Min:	60.6
					Max:	65.5
					Average:	64.6

Daytime Noise Level at Wo Tin House, Shatin Pass Estate (NM-5)

Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
2 May 2023	Fine	9:14	65.3	68.8	56.2	64.4
		9:19	63.9	67.6	55.9	
		9:24	64.5	68.1	54.1	
		9:29	62.5	67.9	56.4	
		9:34	65.3	69.0	54.9	
		9:39	64.1	68.3	56.7	
3 May 2023	Fine	8:48	68.1	70.0	55.1	67.6
		8:53	69.2	71.1	55.5	
		8:58	67.1	70.8	53.8	
		9:03	66.5	69.9	52.4	
		9:08	65.8	68.2	53.3	
		9:13	67.9	71.4	53.6	
4 May 2023	Sunny	9:03	68.4	70.5	56.7	65.5
		9:08	63.2	68.4	53.9	
		9:13	64.1	67.7	52.8	
		9:18	64.9	68.1	55.2	
		9:23	64.5	67.6	54.1	
		9:28	65.6	68.3	54.9	
5 May 2023	Sunny	14:08	63.9	67.3	56.8	64.9
		14:13	63.3	66.9	56.0	
		14:18	67.1	70.8	57.4	
		14:23	65.4	68.5	56.1	
		14:28	65.1	68.8	55.9	
		14:33	63.0	66.4	55.4	
6 May 2023	Fine	9:11	65.3	67.1	58.5	64.7
		9:16	64.1	68.8	57.1	
		9:21	63.8	68.9	56.7	
		9:26	65.6	67.7	56.4	
		9:31	65.2	67.4	54.2	
		9:36	63.6	66.9	53.0	
7 May 2023	Cloudy	9:08	62.3	65.8	52.8	63.9
		9:13	64.9	66.2	53.6	
		9:18	64.4	66.1	54.7	
		9:23	63.7	65.5	52.6	
		9:28	65.0	68.4	53.9	
		9:33	62.5	66.0	52.5	
8 May 2023	Cloudy	9:22	67.5	70.4	54.6	65.3
		9:27	64.5	67.0	53.8	
		9:32	66.2	68.5	54.7	
		9:37	63.4	67.9	54.4	
		9:42	63.1	66.8	52.3	
		9:47	65.2	67.9	54.9	

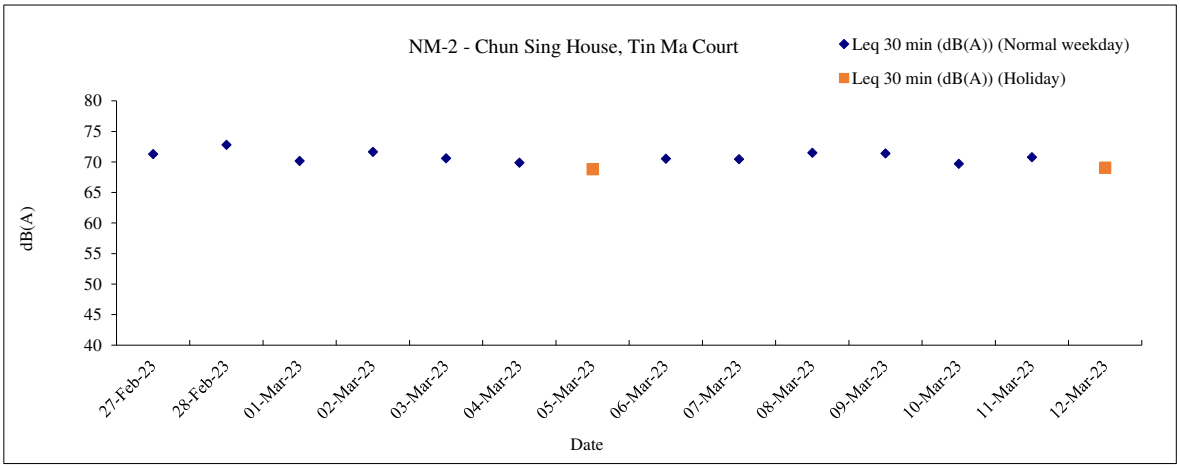
Date	Weather	Start Time	dB(A)			
			Leq	L10	L90	Leq(30min)
9 May 2023	Fine	15:19	65.8	68.4	54.0	65.6
		15:24	66.9	70.1	55.1	
		15:29	64.2	68.9	55.6	
		15:34	66.0	68.5	54.2	
		15:39	65.9	69.0	53.7	
		15:44	63.9	67.9	54.1	
10 May 2023	Fine	14:01	66.0	69.1	54.7	65.2
		14:06	63.9	68.5	54.8	
		14:11	64.4	68.9	53.5	
		14:16	63.9	67.5	54.6	
		14:21	65.4	68.0	55.1	
		14:26	66.7	70.3	55.5	
11 May 2023	Fine	9:05	65.3	68.0	56.6	65.6
		9:10	65.2	69.1	57.9	
		9:15	65.0	67.7	55.7	
		9:20	64.3	68.3	56.1	
		9:25	67.2	70.6	56.4	
		9:30	66.1	69.2	55.3	
12 May 2023	Cloudy	10:28	69.8	70.7	56.2	66.4
		10:33	65.3	68.1	54.9	
		10:38	64.7	67.5	55.2	
		10:43	64.3	67.2	54.4	
		10:48	66.4	68.7	56.1	
		10:53	64.9	67.5	56.0	
13 May 2023	Cloudy	8:54	66.6	68.2	52.3	65.6
		8:59	64.5	69.4	53.9	
		9:04	65.7	68.4	54.8	
		9:09	64.9	67.0	54.3	
		9:14	65.3	67.5	53.6	
		9:19	66.0	67.8	54.0	
15 May 2023	Fine	9:27	65.3	68.3	56.3	65.0
		9:32	64.9	67.6	56.3	
		9:37	62.5	65.3	55.9	
		9:42	64.9	67.2	55.9	
		9:47	66.1	69.3	56.7	
		9:52	65.6	68.8	54.8	
16 May 2023	Fine	13:42	65.1	69.2	53.4	64.8
		13:47	63.9	68.6	52.3	
		13:52	64.0	67.4	51.5	
		13:57	62.7	66.8	51.8	
		14:02	66.3	69.5	54.8	
		14:07	65.9	68.0	56.8	
					Min:	63.9
					Max:	67.6
					Average:	65.3

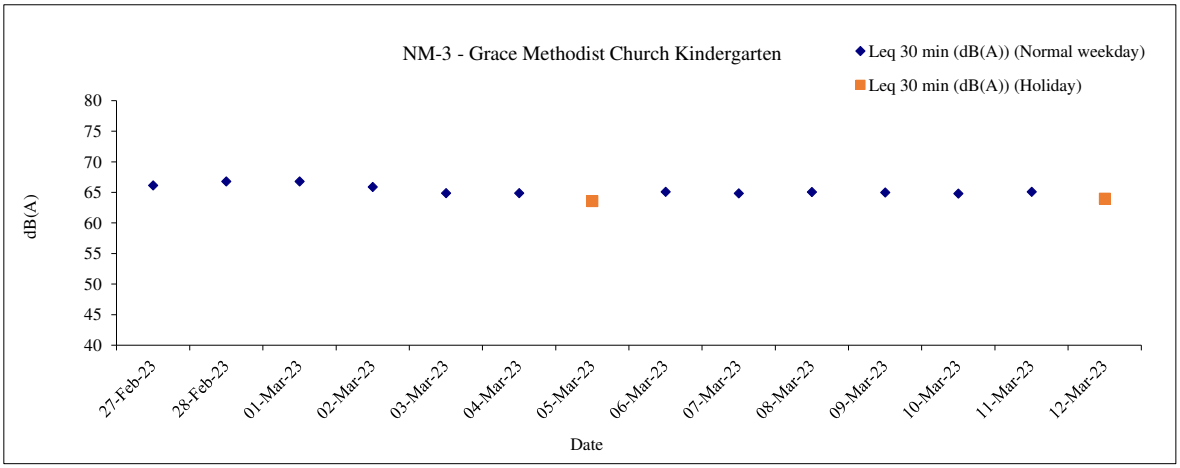
Daytime Noise Level at Sheung Fung Street Customs Staff Quarter (NM-6)

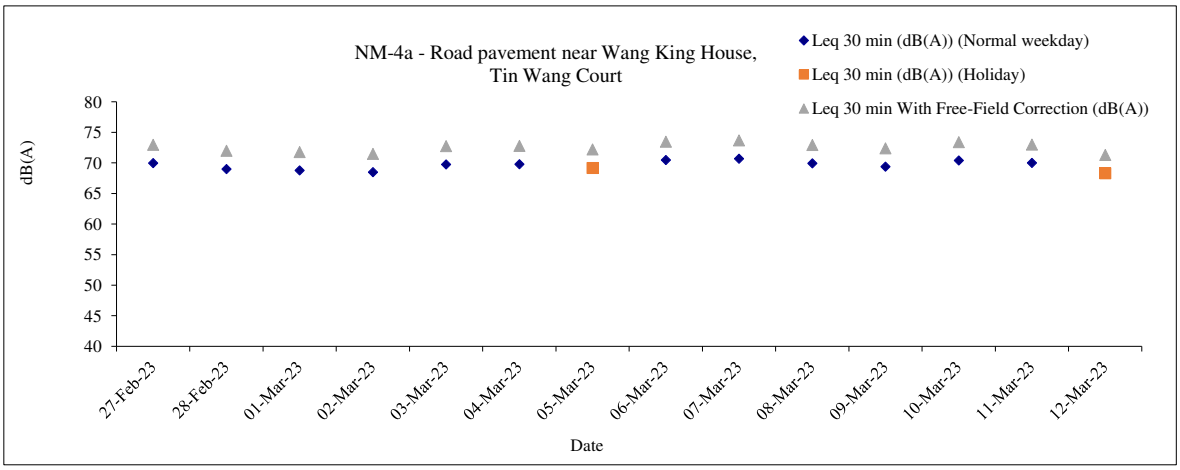
Date	Weather	Start Time	dB(A)				
			Leq	L10	L90	Leq(30min)	With Free-Field correction
2 May 2023	Fine	10:02	69.2	72.3	56.4	70.2	73.2
		10:07	70.2	73.5	56.1		
		10:12	69.5	73.1	57.0		
		10:17	72.5	75.9	57.7		
		10:22	70.7	74.9	57.5		
		10:27	67.3	71.2	55.9		
3 May 2023	Fine	9:30	70.1	73.3	66.4	69.6	72.6
		9:35	69.8	72.3	66.2		
		9:40	71.1	74.5	64.9		
		9:45	68.4	72.0	56.4		
		9:50	69.0	72.6	55.8		
		9:55	68.9	72.1	55.6		
4 May 2023	Sunny	9:45	66.0	71.4	56.3	69.6	72.6
		9:50	70.8	73.5	55.5		
		9:55	70.2	72.9	57.0		
		10:00	71.7	73.1	56.2		
		10:05	68.8	72.0	56.9		
		10:10	67.6	70.3	55.2		
5 May 2023	Sunny	14:50	71.6	73.8	55.1	71.4	74.4
		14:55	74.0	76.2	56.9		
		15:00	69.4	72.8	55.4		
		15:05	70.5	73.3	54.9		
		15:10	69.0	72.1	55.2		
		15:15	71.8	74.2	57.0		
6 May 2023	Fine	9:58	67.5	71.4	56.5	69.3	72.3
		10:03	66.1	70.9	55.6		
		10:08	71.4	73.7	55.9		
		10:13	69.8	72.6	58.1		
		10:18	70.2	74.5	59.0		
		10:23	69.1	72.9	57.9		
7 May 2023	Cloudy	9:59	67.7	70.7	53.0	68.4	71.4
		10:04	68.2	71.4	54.2		
		10:09	70.6	73.5	55.5		
		10:14	66.9	70.2	53.6		
		10:19	68.4	72.7	54.0		
		10:24	67.5	71.9	55.7		
8 May 2023	Cloudy	14:38	69.0	70.9	56.4	69.4	72.4
		14:43	68.8	72.6	57.1		
		14:48	71.3	73.8	57.2		
		14:53	70.6	73.0	56.9		
		14:58	67.5	71.6	57.5		
		15:03	68.2	70.5	58.1		

Date	Weather	Start Time	dB(A)				
			Leq	L10	L90	Leq(30min)	With Free-Field correction
9 May 2023	Fine	16:01	71.9	73.8	58.5	69.5	72.5
		16:06	67.0	72.4	59.1		
		16:11	67.8	70.7	56.4		
		16:16	69.5	71.8	57.2		
		16:21	69.1	72.3	55.0		
		16:26	70.1	73.0	55.8		
10 May 2023	Fine	14:48	67.3	70.7	56.0	69.2	72.2
		14:53	70.4	73.8	56.2		
		14:58	69.7	73.3	57.1		
		15:03	69.5	74.1	55.9		
		15:08	68.6	71.3	56.0		
		15:13	69.1	70.8	55.5		
11 May 2023	Fine	9:56	69.6	72.8	57.3	69.0	72.0
		10:01	70.6	75.0	59.4		
		10:06	69.3	73.1	58.6		
		10:11	66.9	70.4	56.5		
		10:16	69.0	74.6	57.0		
		10:21	67.7	72.1	55.4		
12 May 2023	Cloudy	11:21	67.4	71.1	56.0	69.4	72.4
		11:26	70.8	71.7	57.3		
		11:31	70.8	72.4	57.0		
		11:36	69.5	72.0	57.8		
		11:41	67.7	71.5	56.4		
		11:46	68.9	70.4	56.9		
13 May 2023	Cloudy	9:41	68.2	70.9	59.5	69.0	72.0
		9:46	67.1	71.4	60.1		
		9:51	70.1	70.9	58.4		
		9:56	70.5	71.2	60.3		
		10:01	69.3	70.8	59.9		
		10:06	67.8	70.2	59.3		
15 May 2023	Fine	10:06	70.6	73.8	58.9	70.0	73.0
		10:11	69.2	72.2	57.7		
		10:16	69.6	72.8	58.4		
		10:21	69.4	73.5	59.6		
		10:26	71.9	74.3	61.0		
		10:31	68.1	72.1	58.9		
16 May 2023	Fine	14:25	67.5	71.7	54.6	70.3	73.3
		14:30	68.2	71.9	55.2		
		14:35	72.5	75.6	57.5		
		14:40	69.0	73.0	57.4		
		14:45	72.5	75.6	56.8		
		14:50	69.3	72.3	57.5		
					Min:	68.4	71.4
					Max:	71.4	74.4
					Average:	69.6	72.6

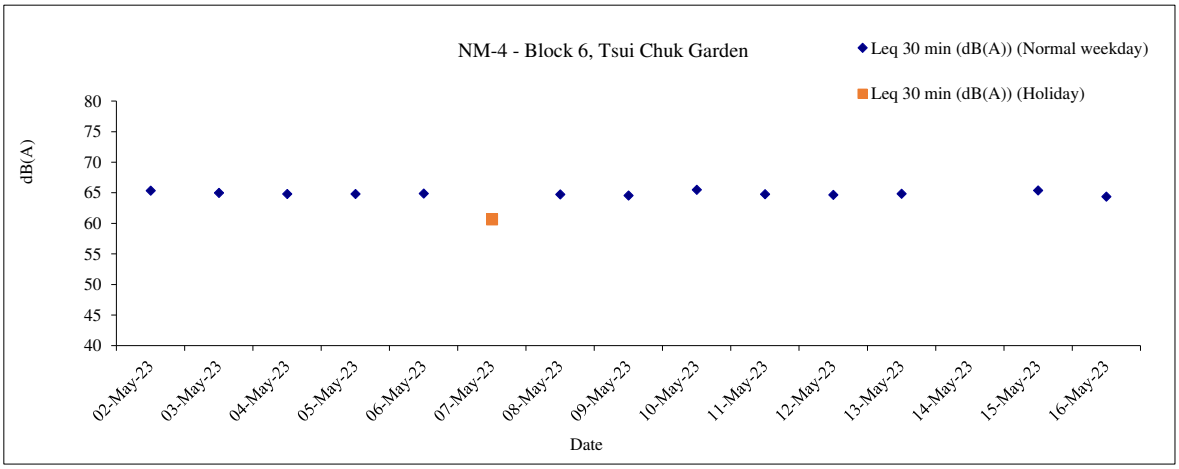
Baseline Noise Monitoring Results

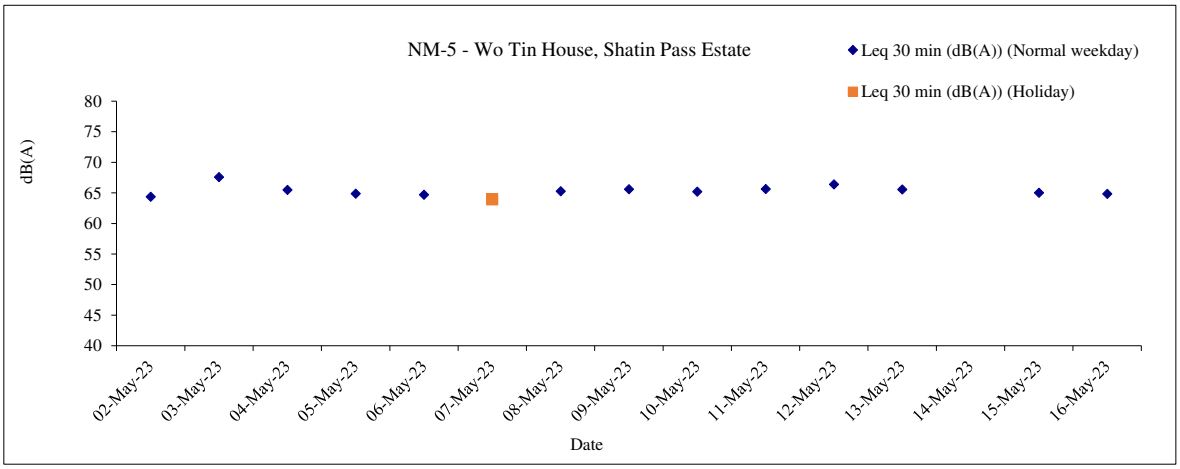


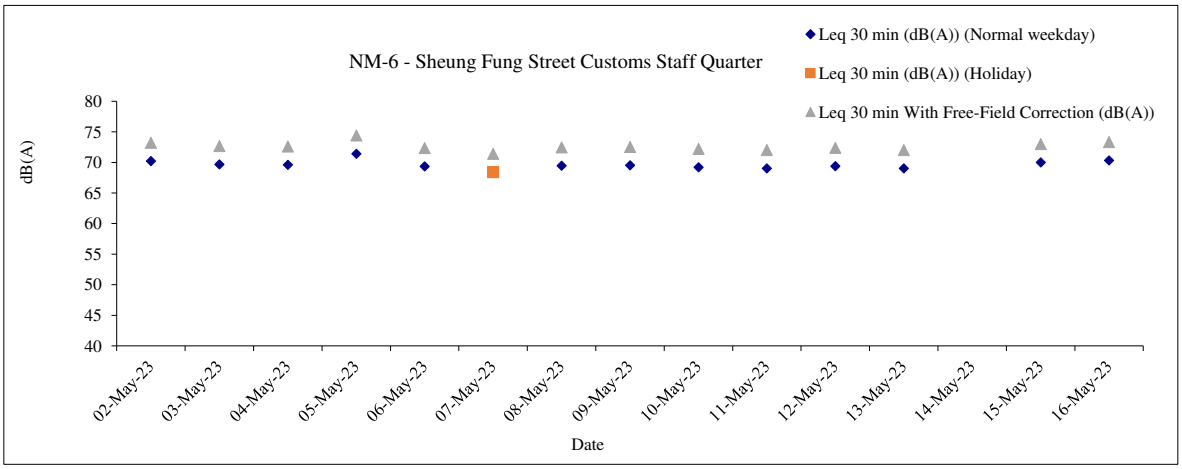




Baseline Noise Monitoring Results





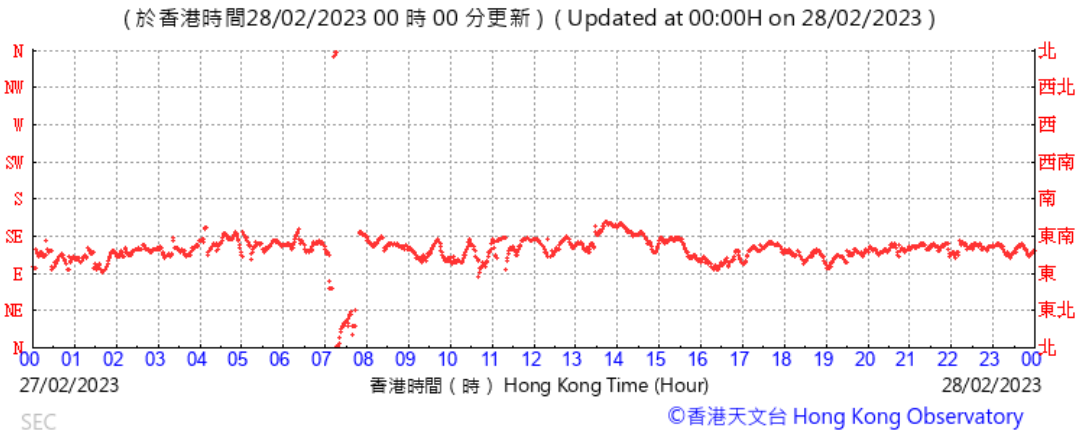


Appendix E

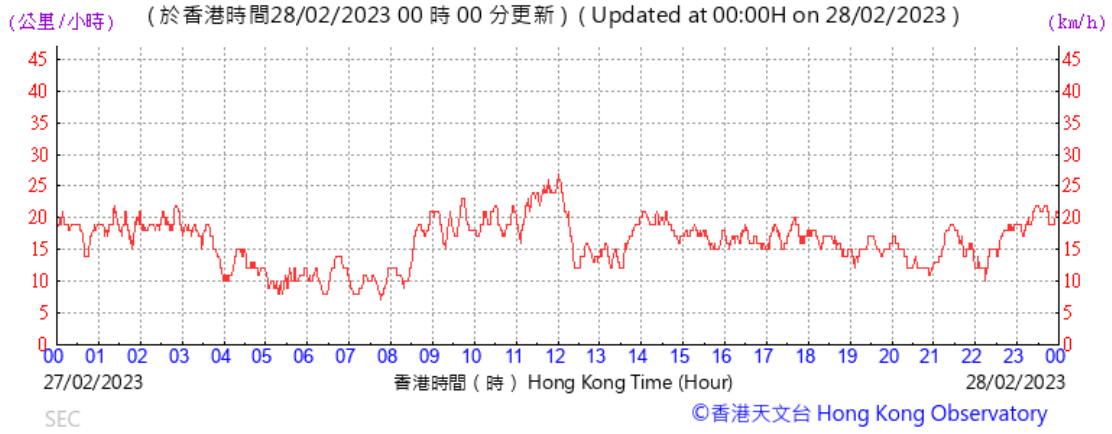
Extract of Meteorological Observations for Hong Kong (Kai Tak Wind Station)

Appendix E - Extract of Meteorological Observations for Hong Kong (Kai Tak Wind Station)

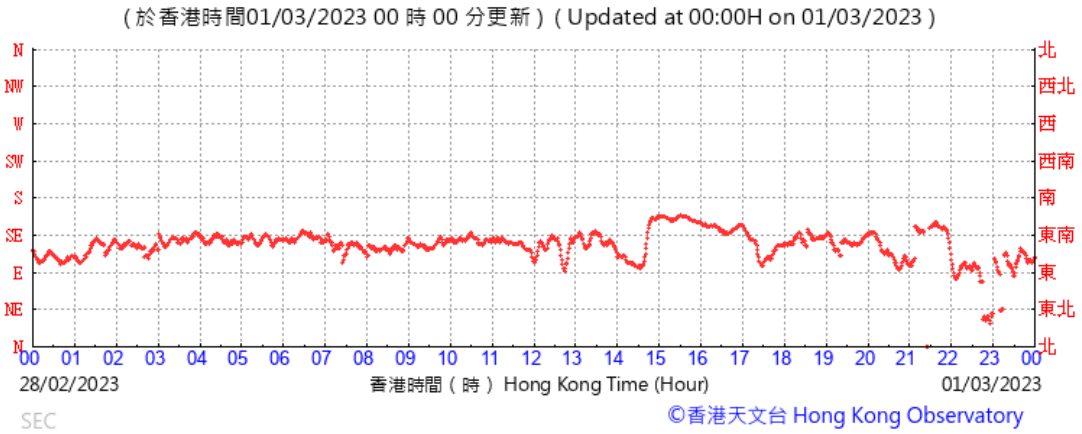
Wind Direction



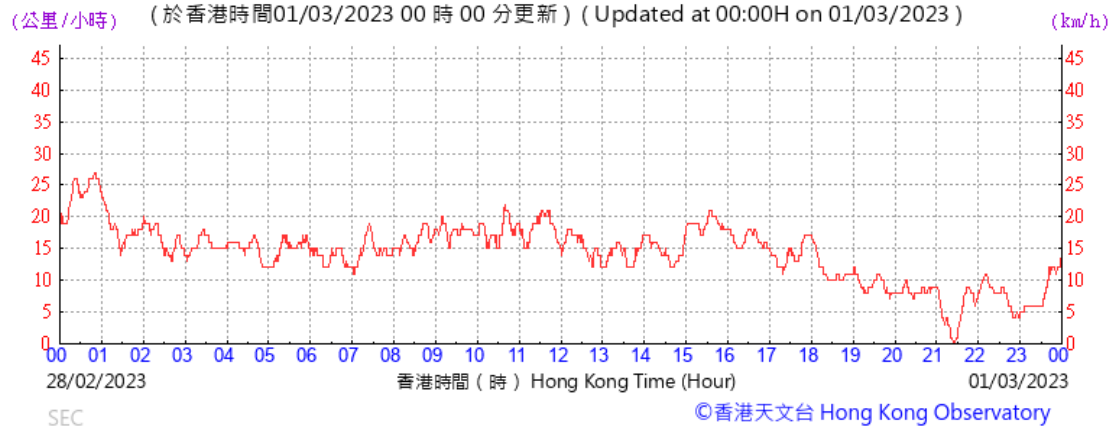
Wind Speed



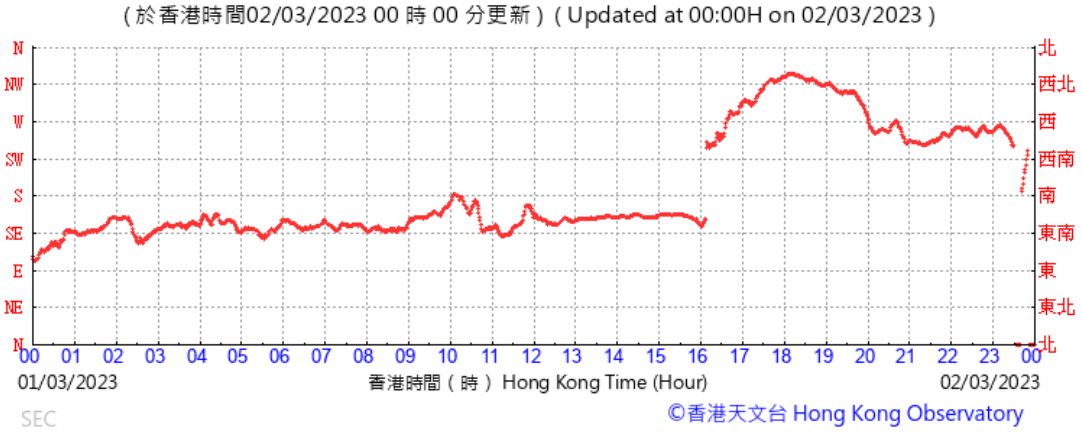
Wind Direction



Wind Speed

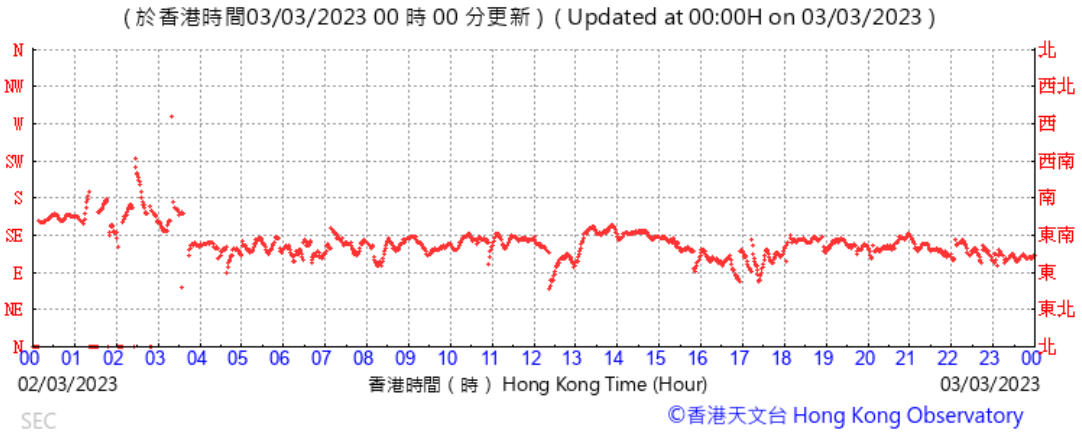


Wind Direction

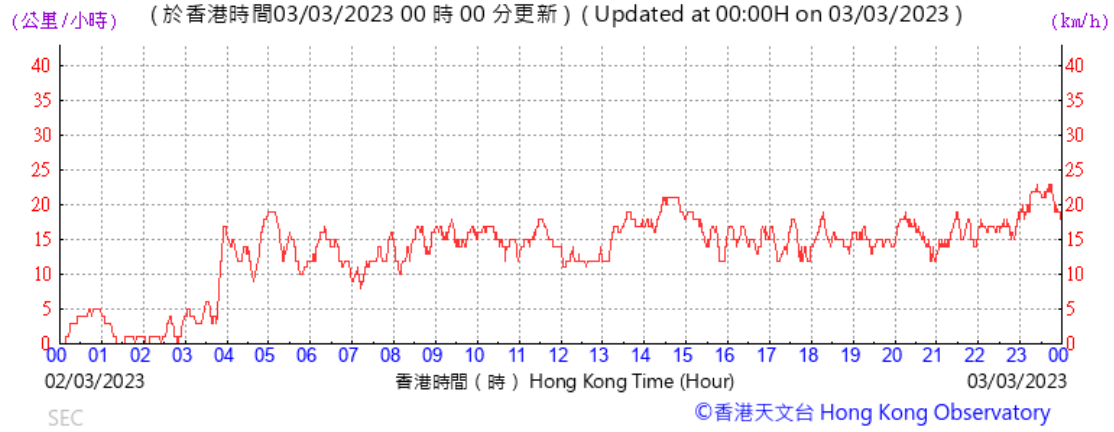


Wind Speed

Wind Direction



Wind Speed



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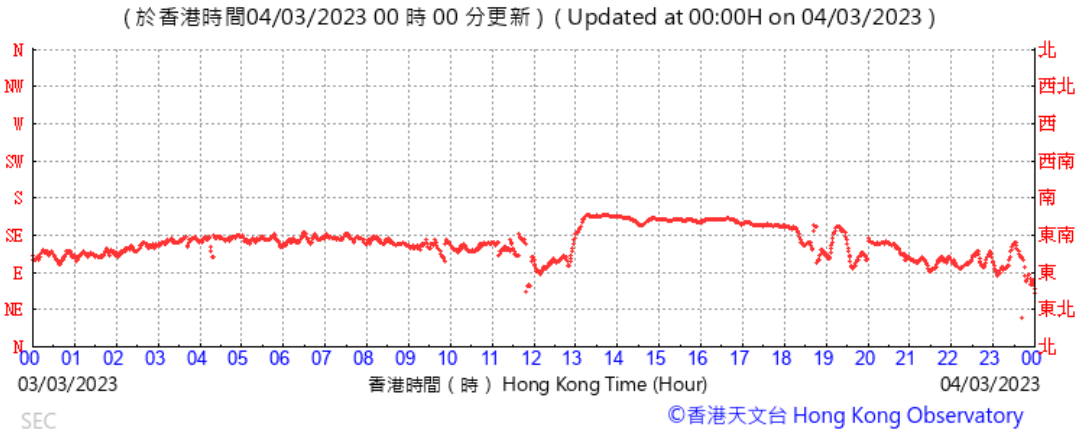
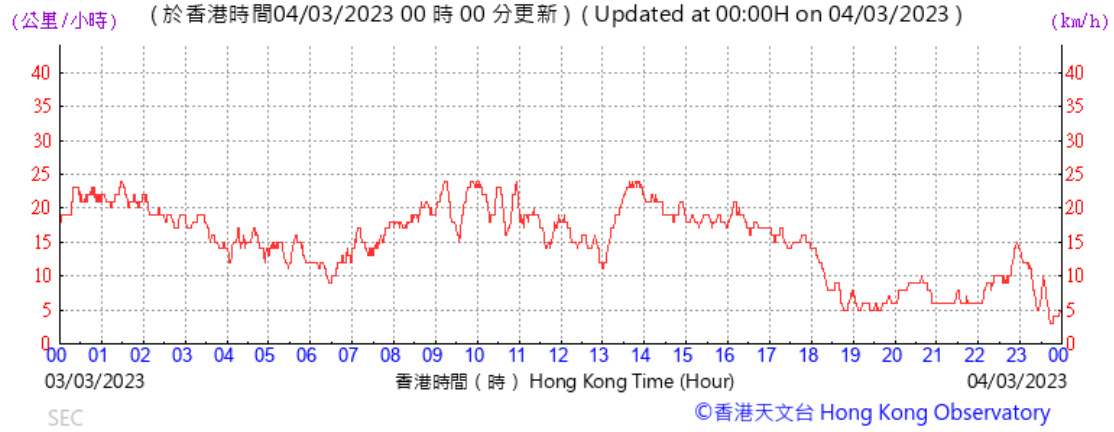


Wind Speed



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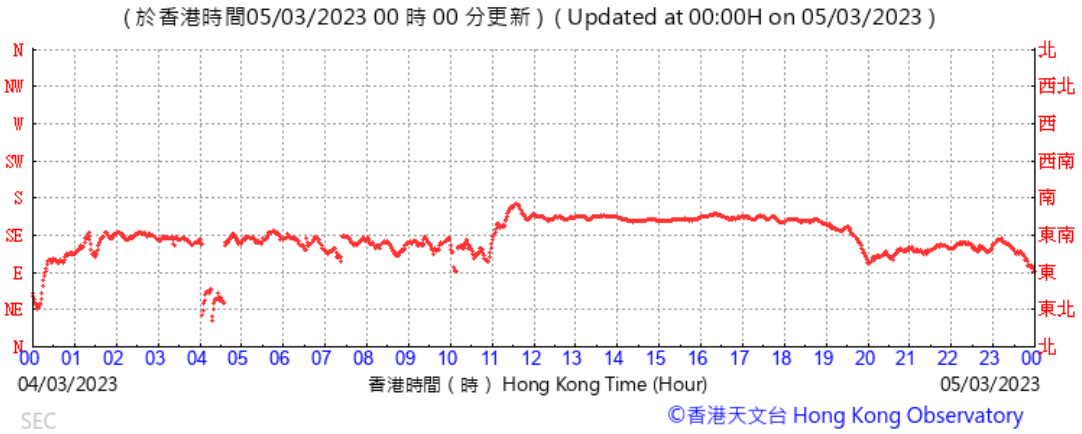
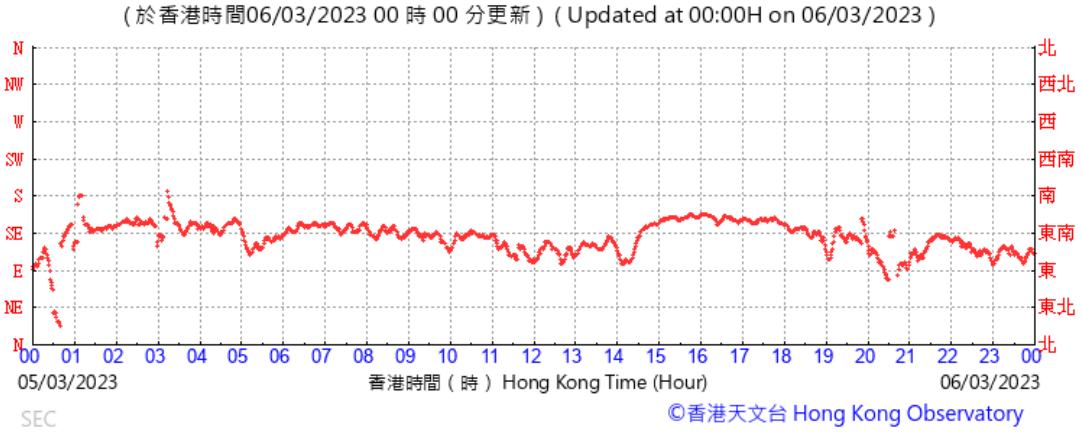


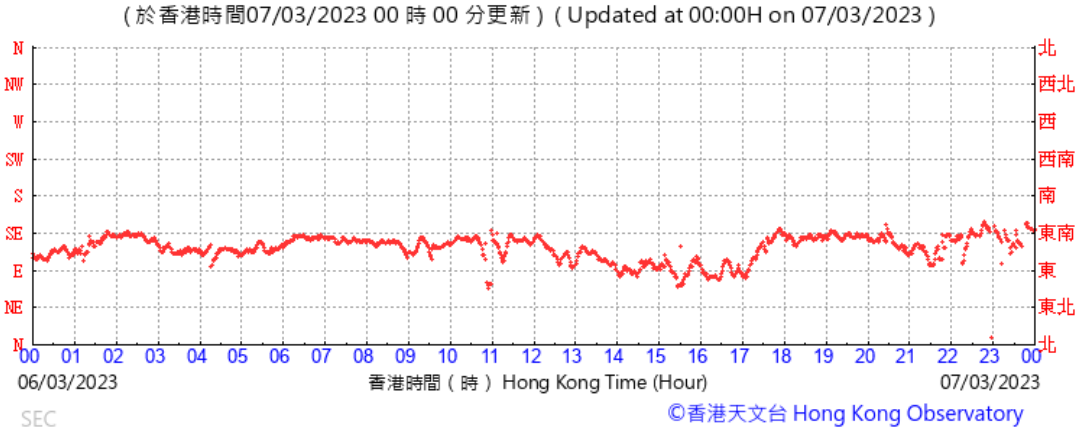
Wind Speed

Wind Direction

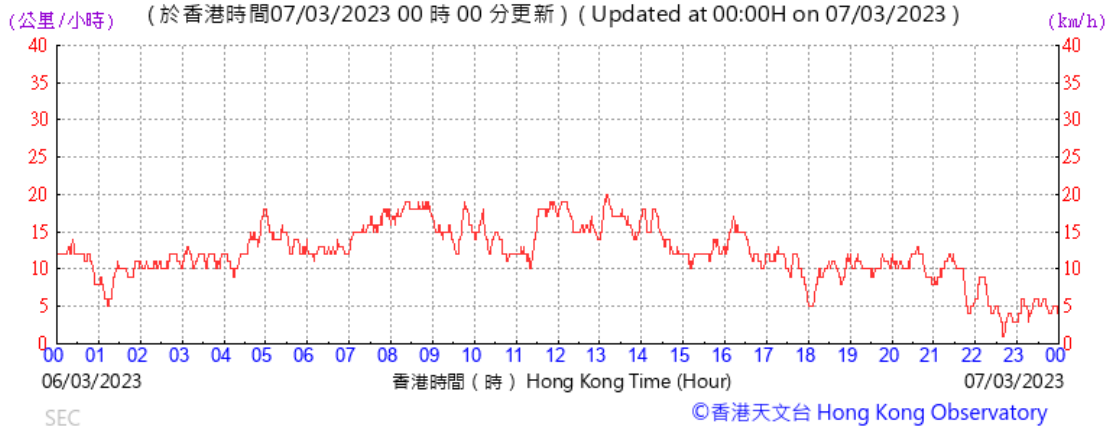


Wind Speed

Wind Direction



Wind Speed



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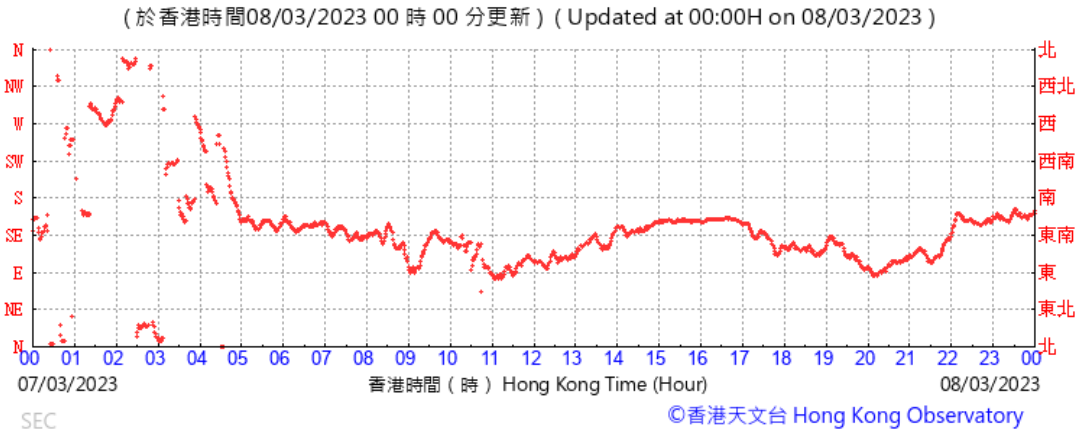
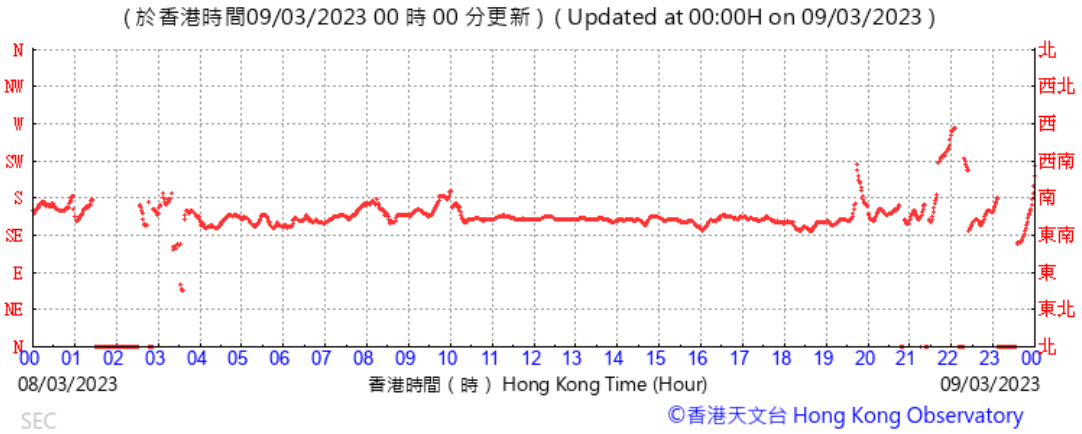
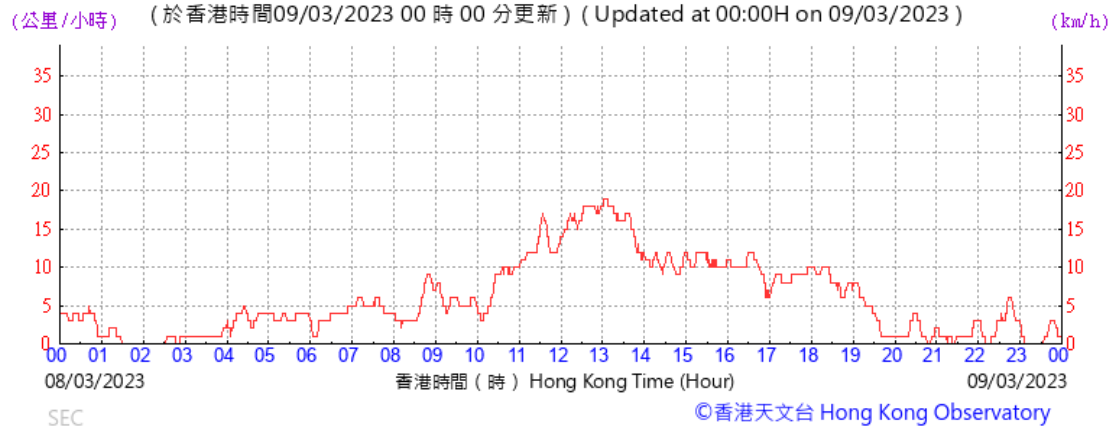


Wind Speed

Wind Direction



Wind Speed



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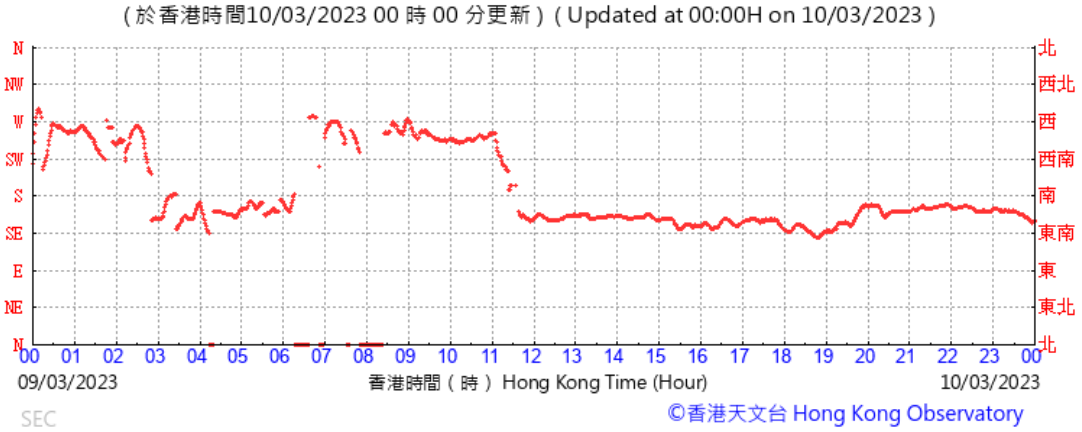

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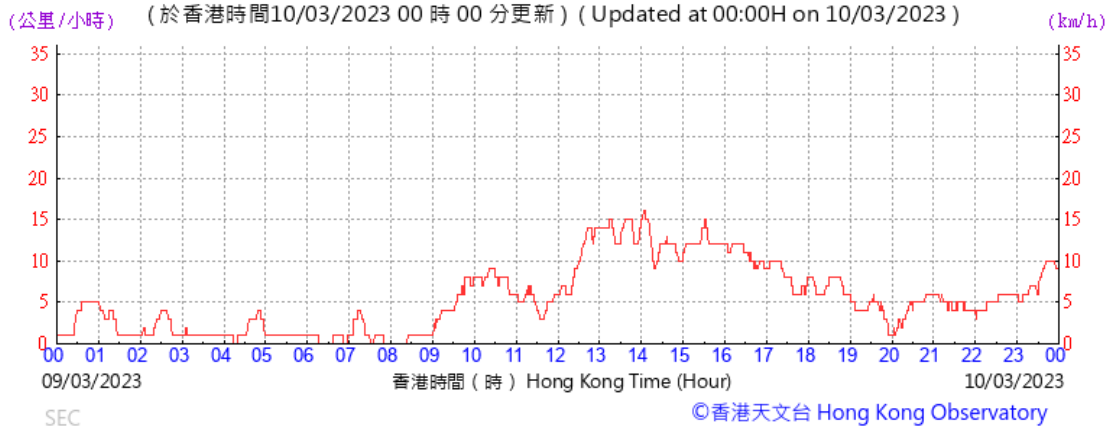

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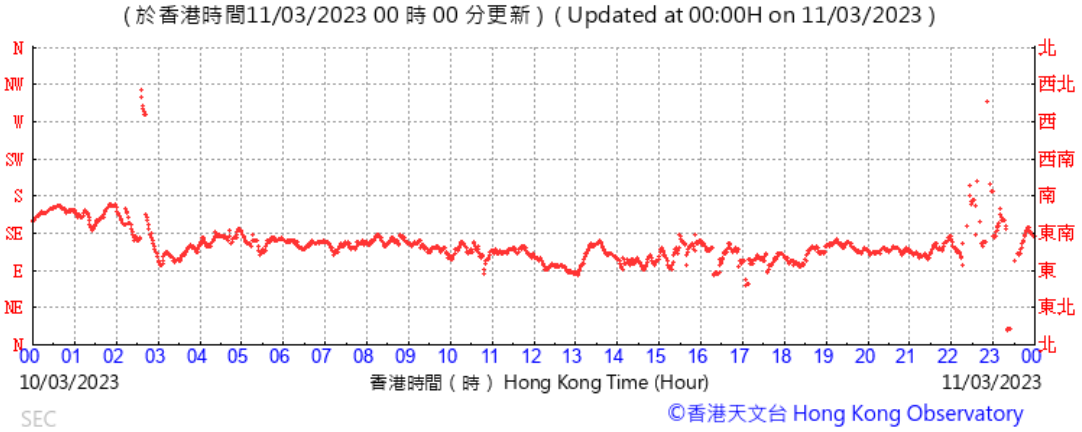
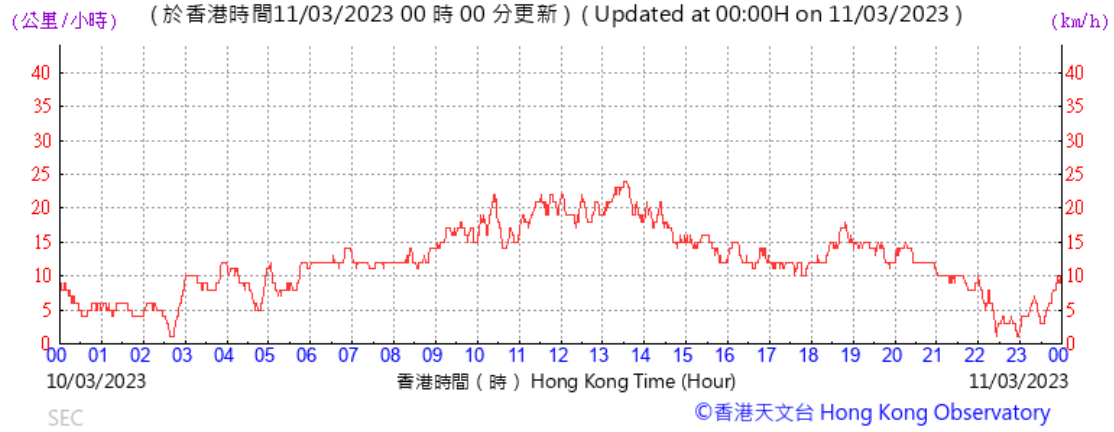


Wind Speed



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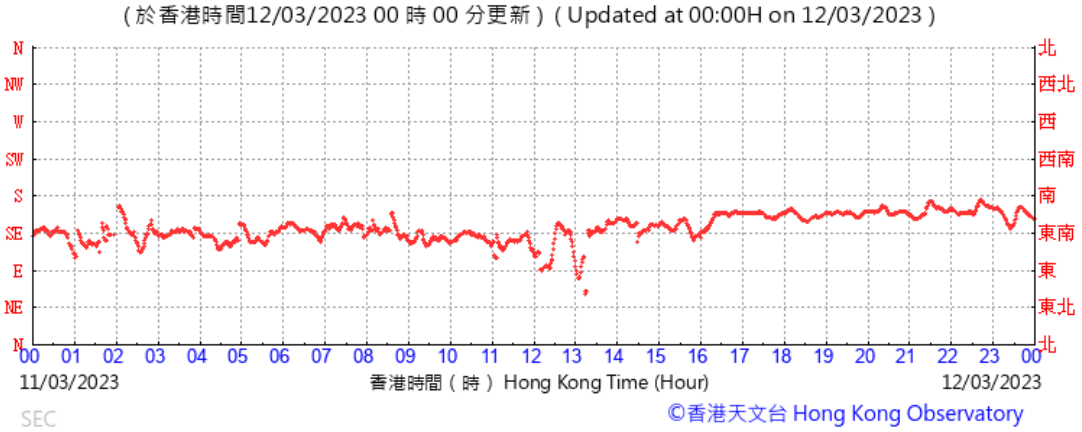

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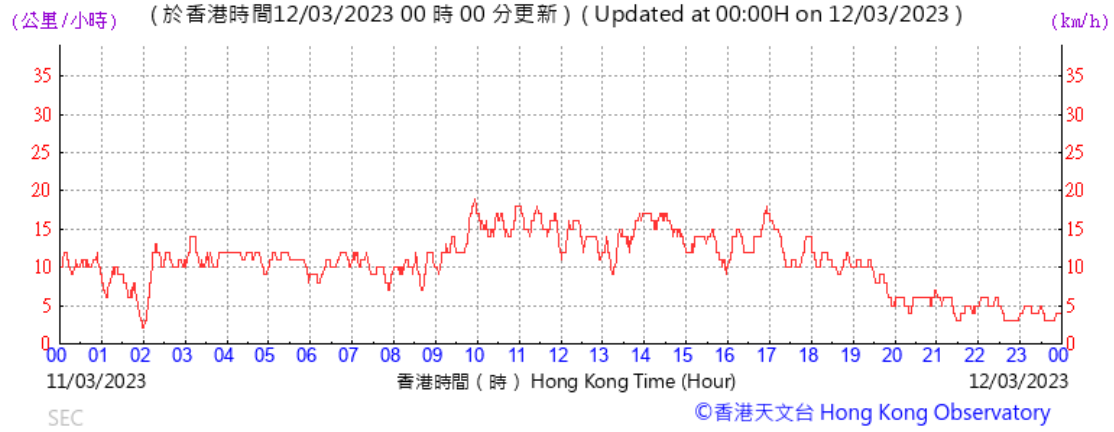

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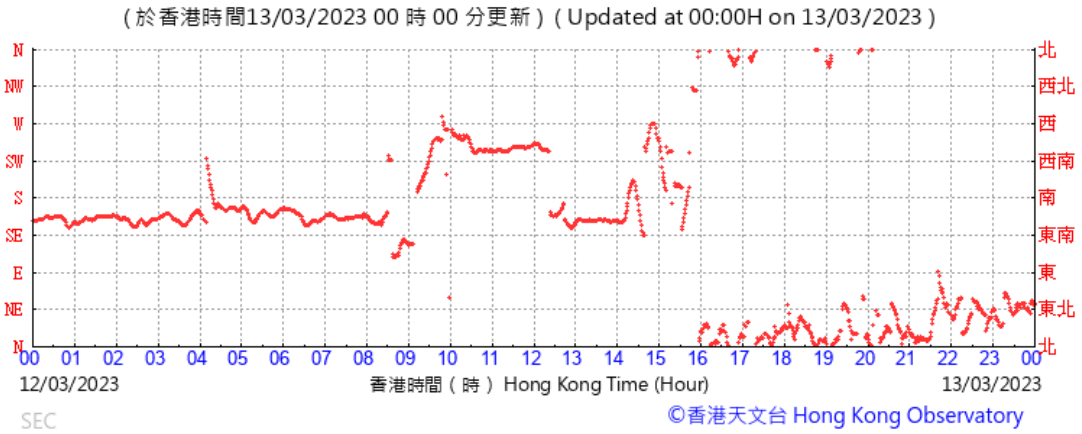

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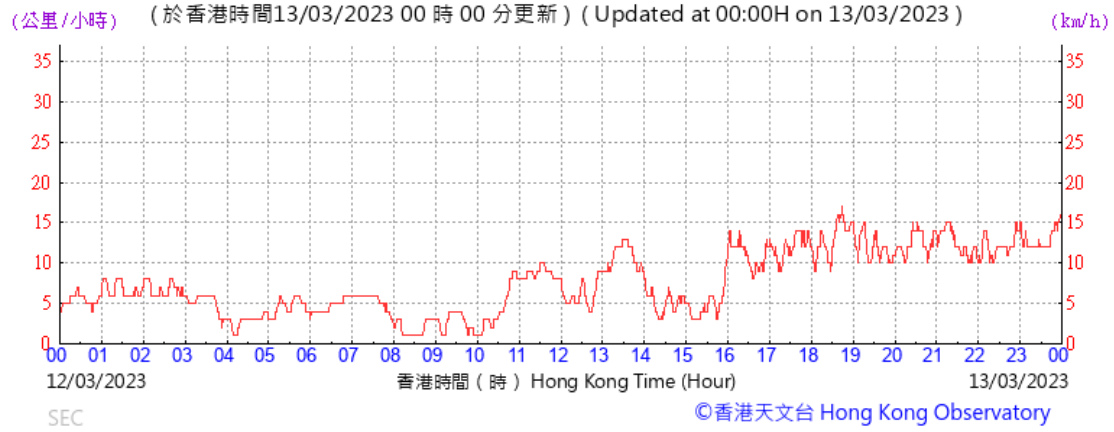

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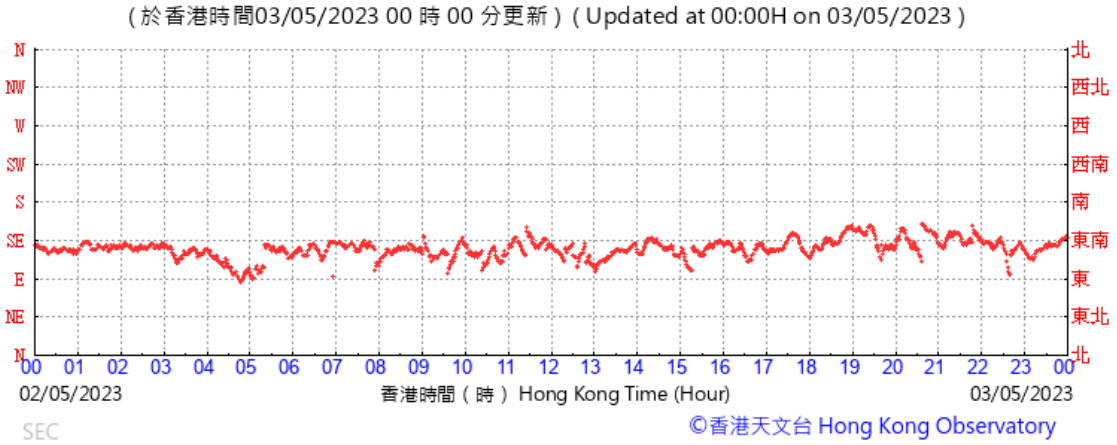

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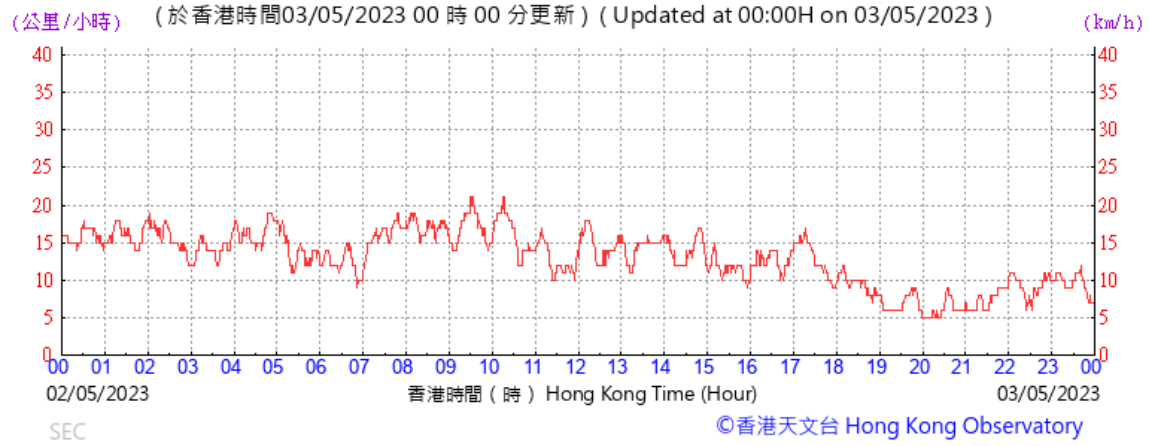

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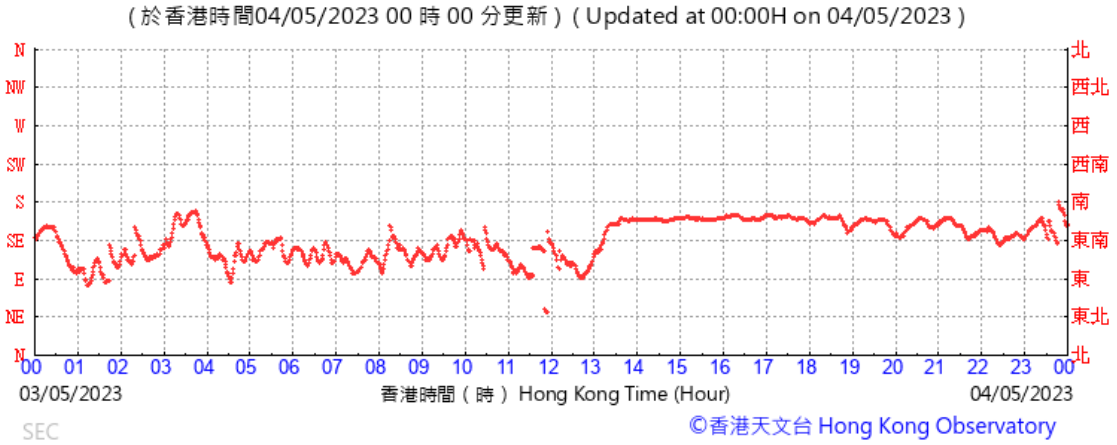

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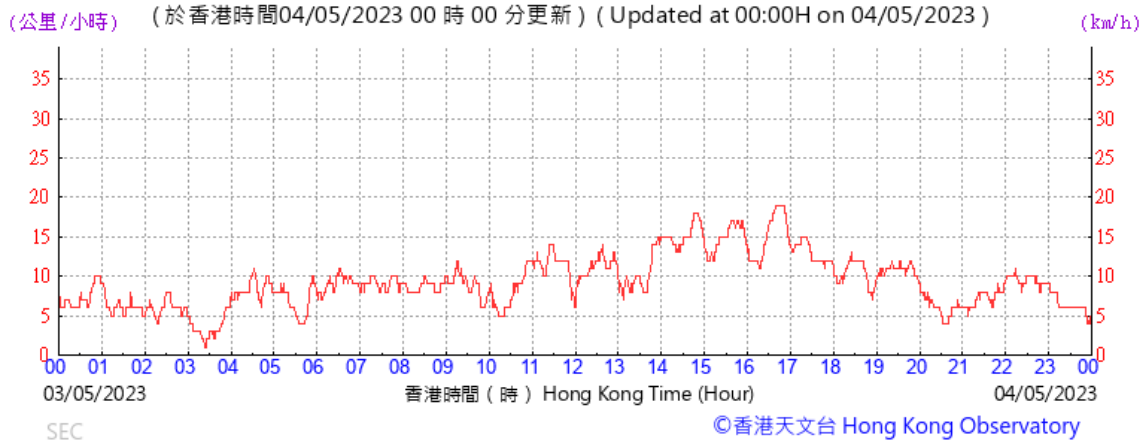

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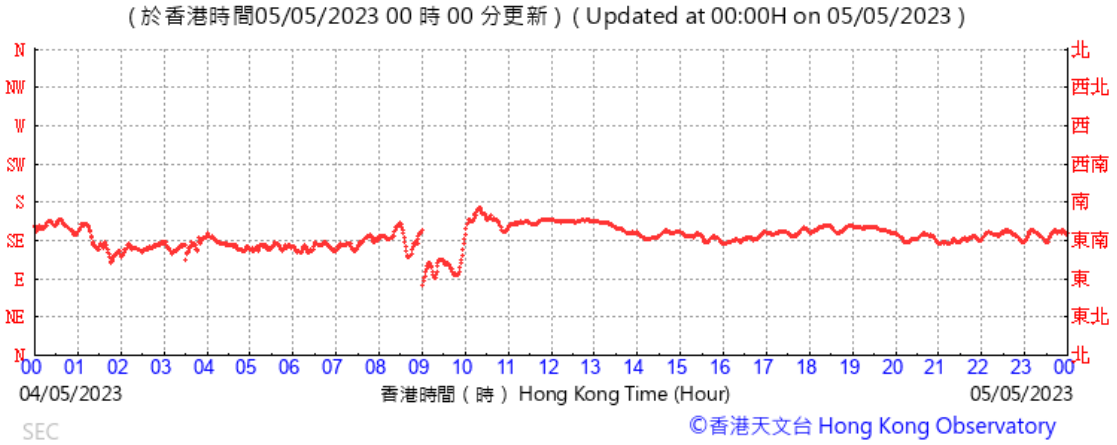

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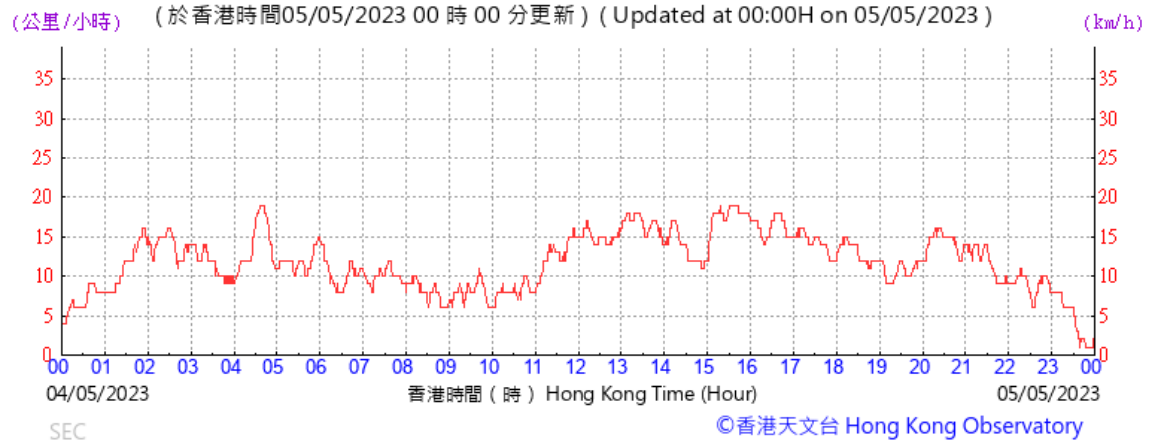

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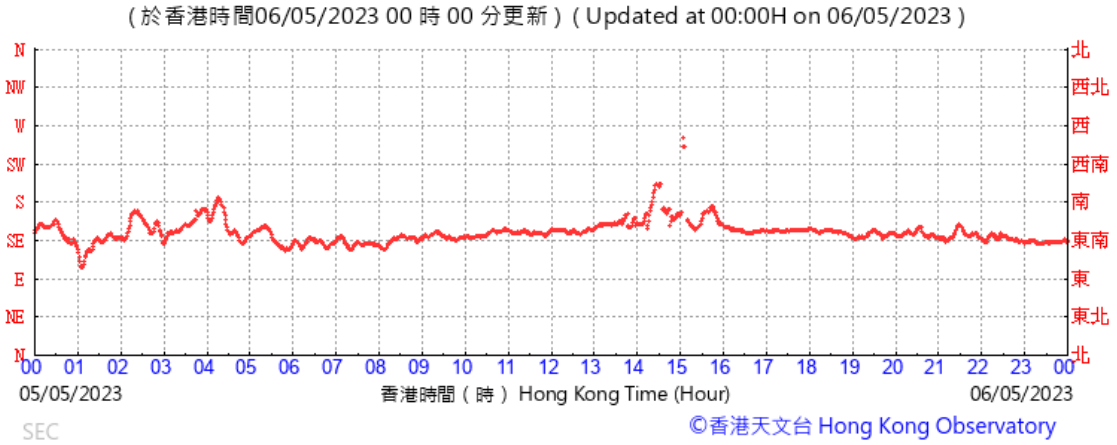

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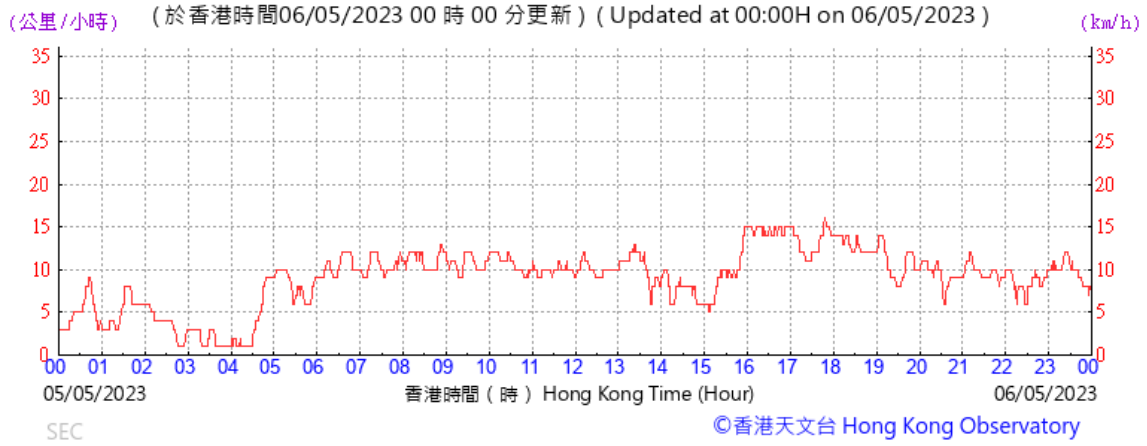

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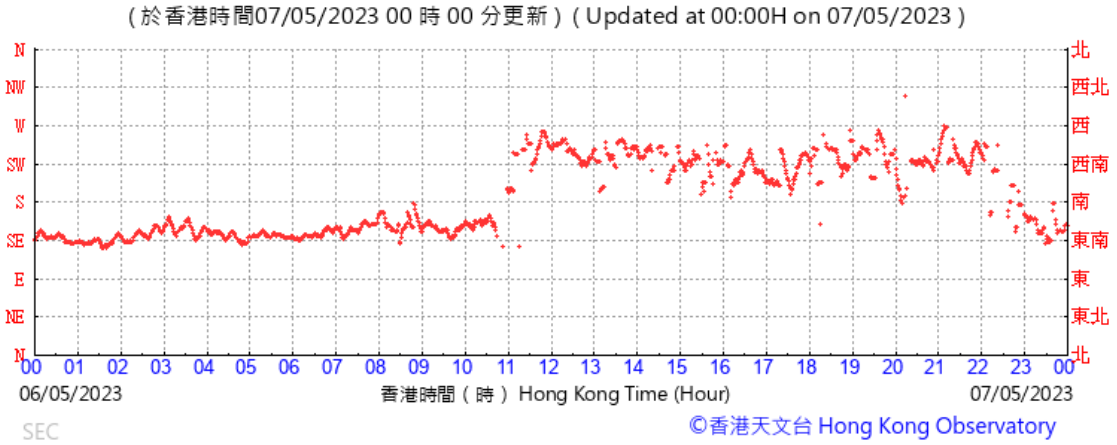

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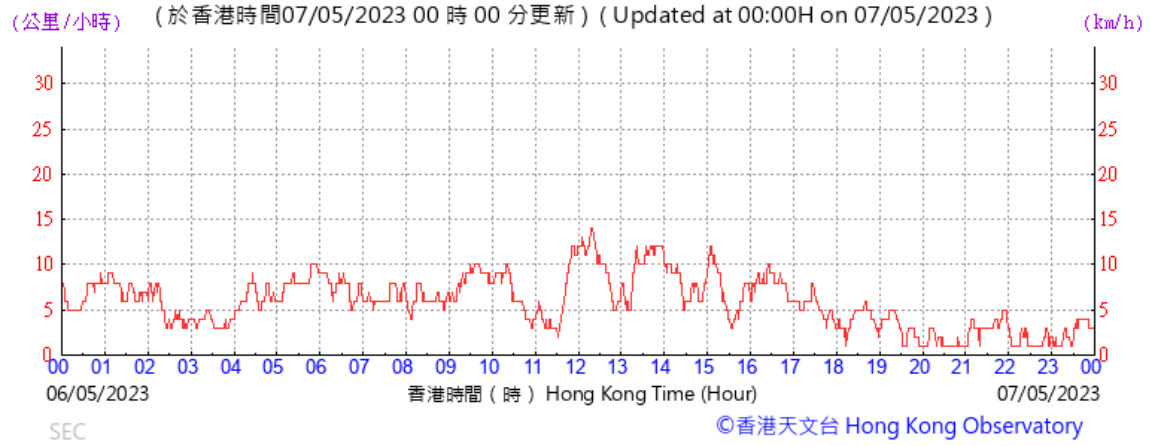

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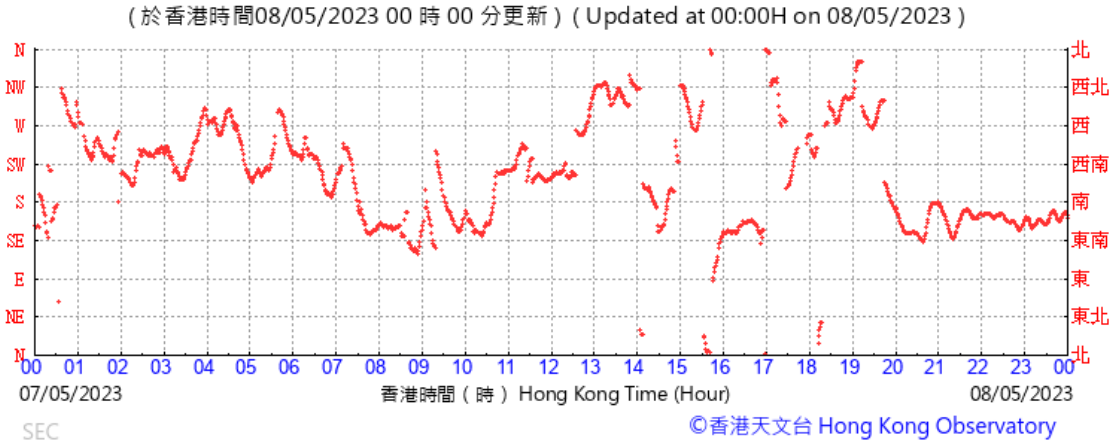

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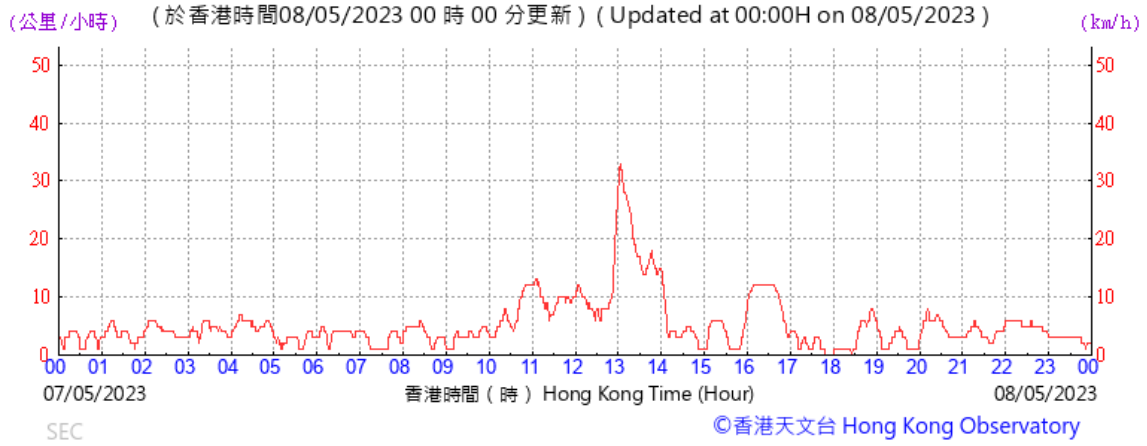

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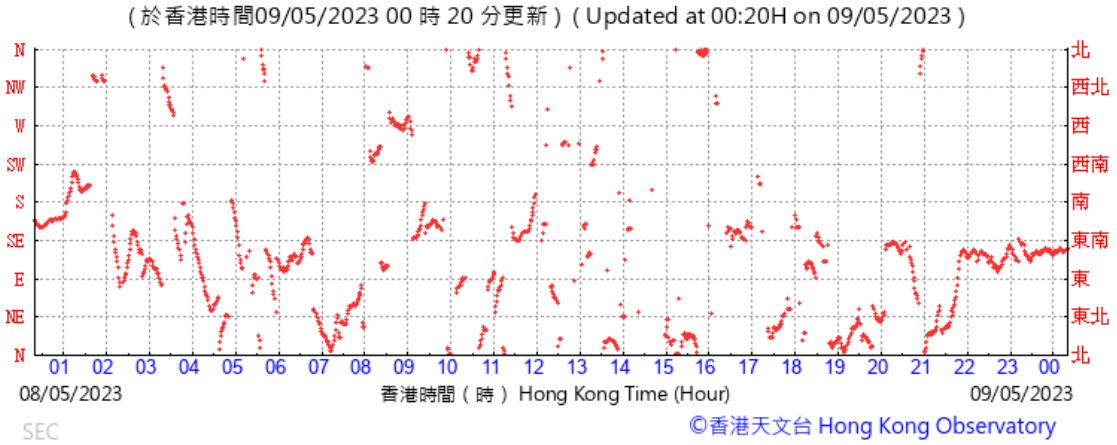
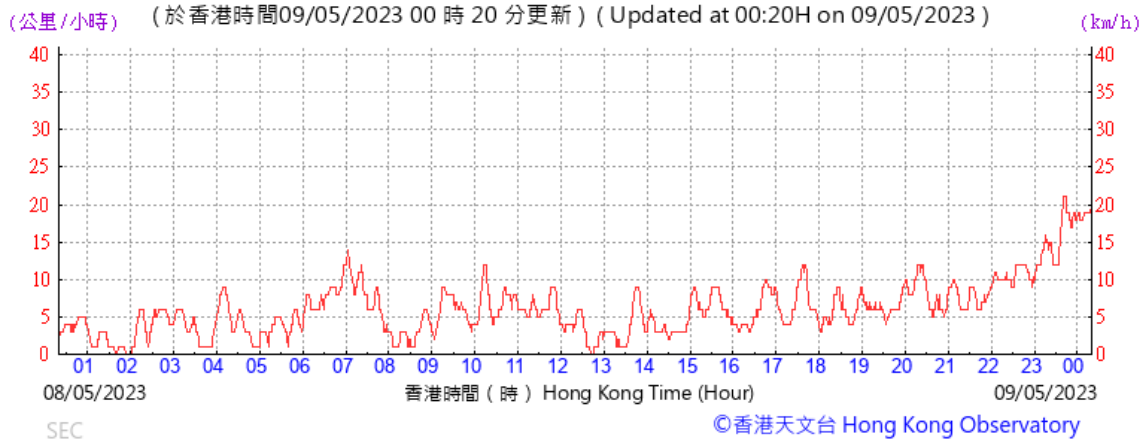
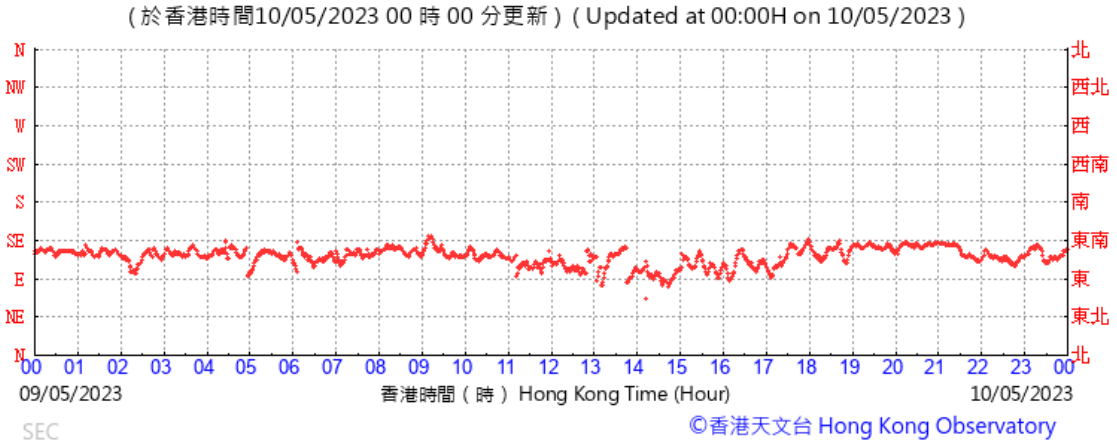


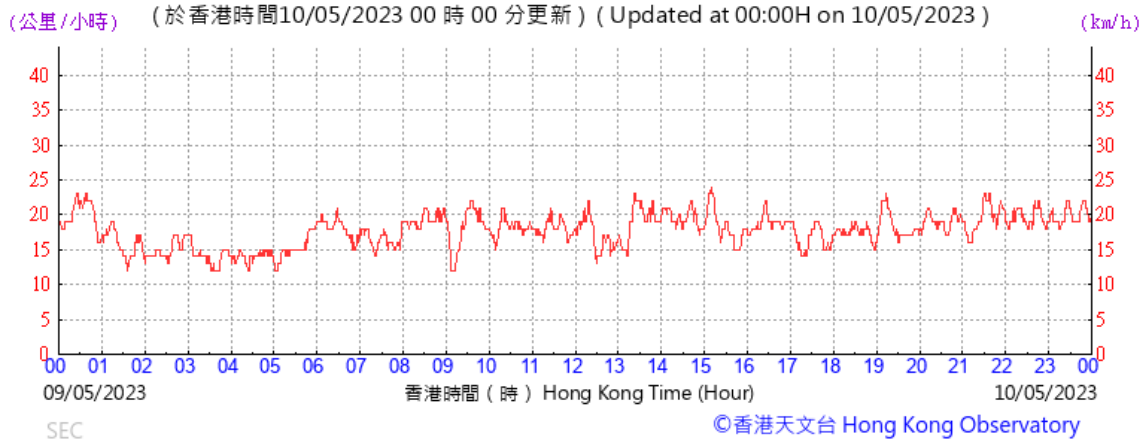
Wind Speed



Wind Direction



Wind Speed



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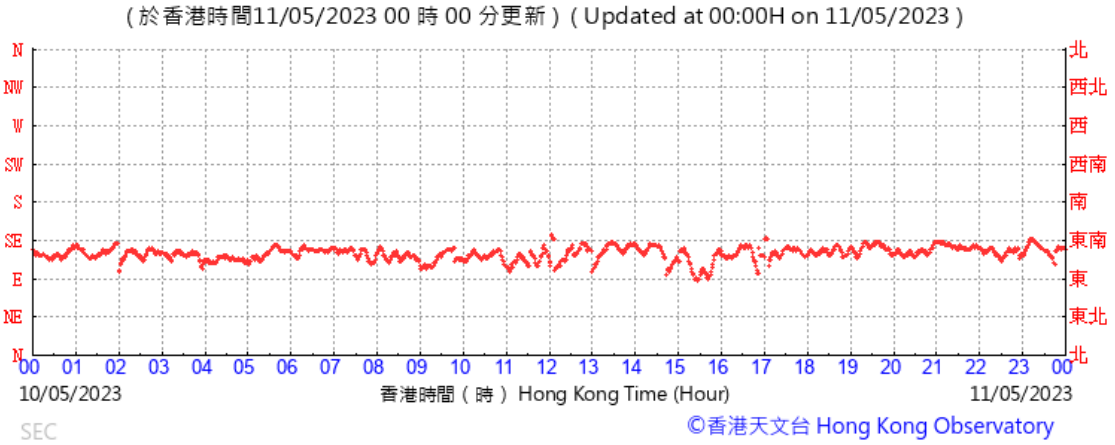

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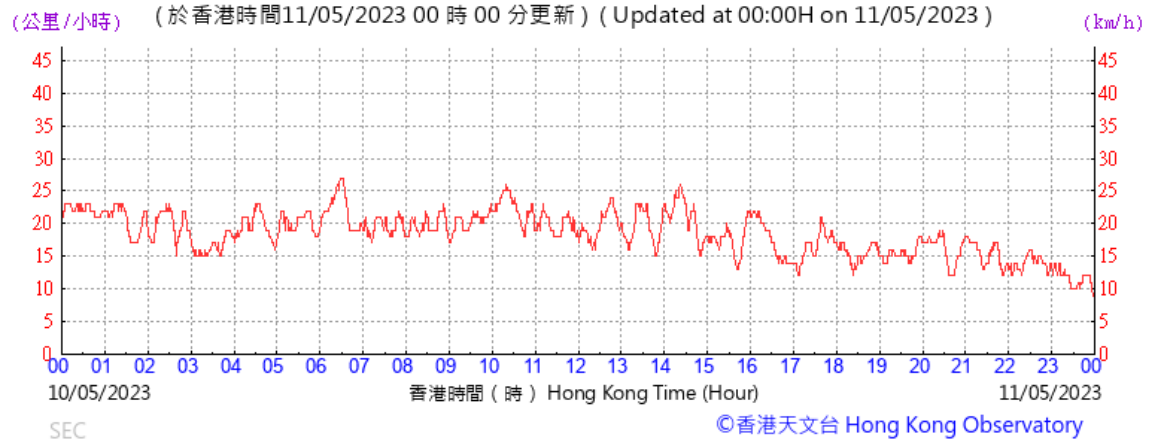

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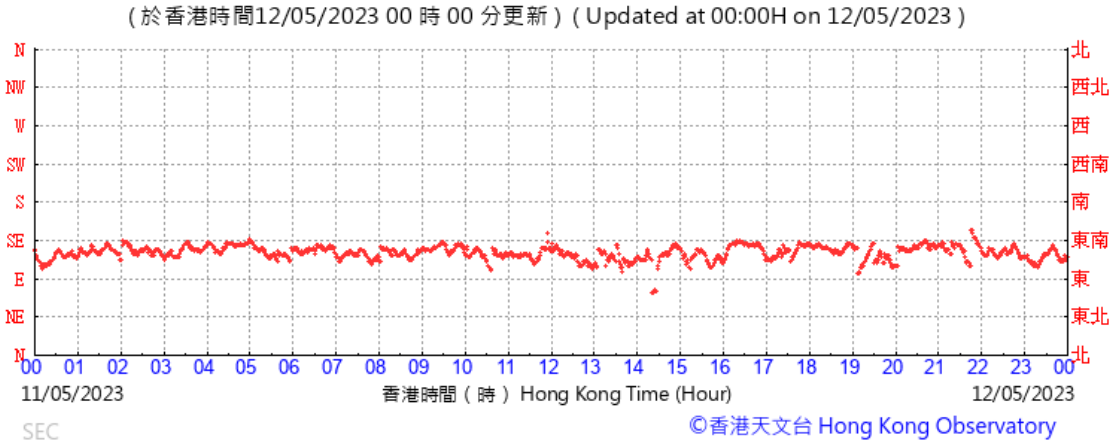
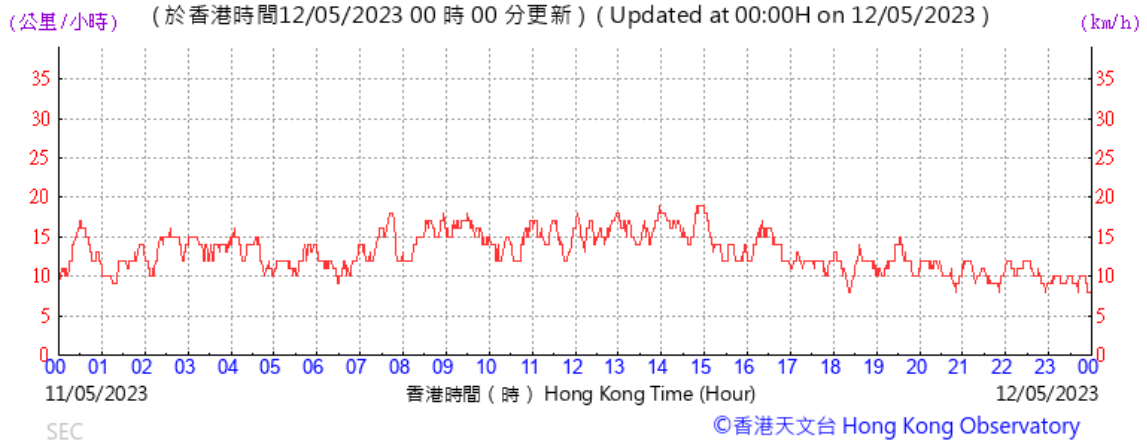
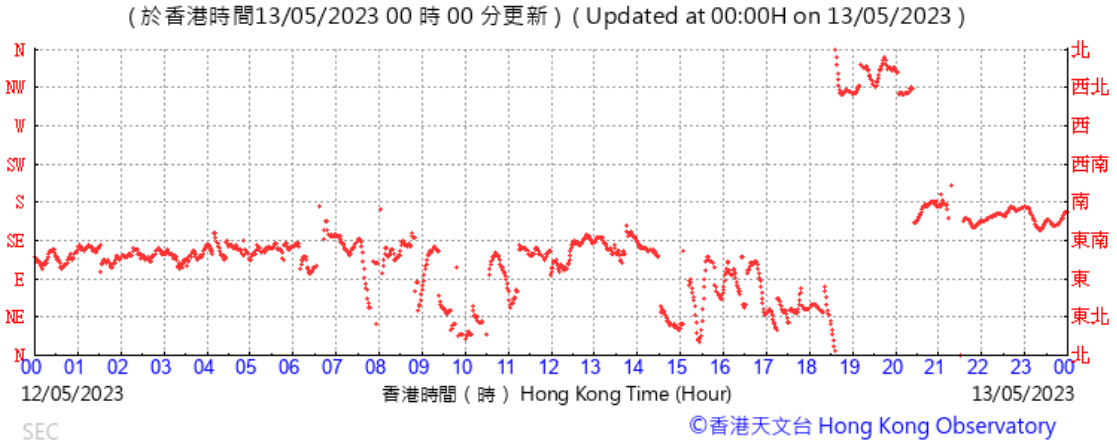


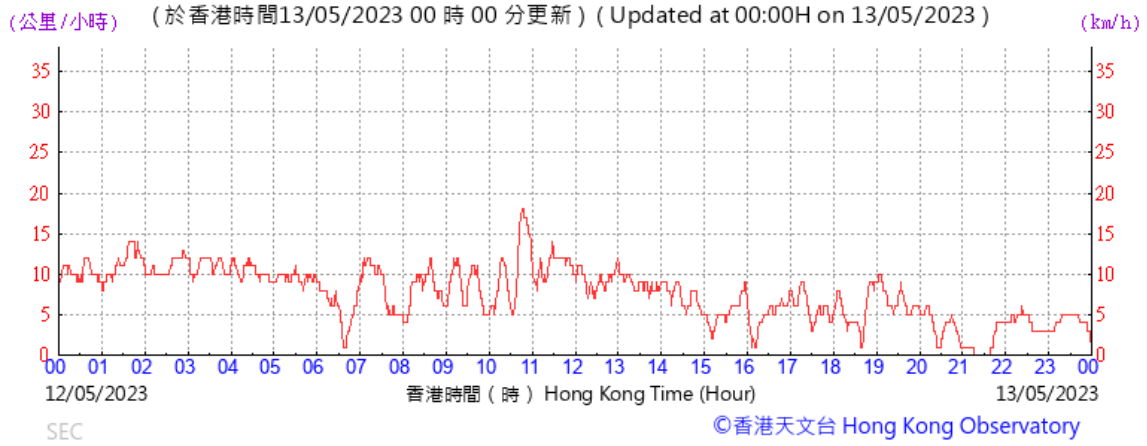
Wind Speed



Wind Direction



Wind Speed



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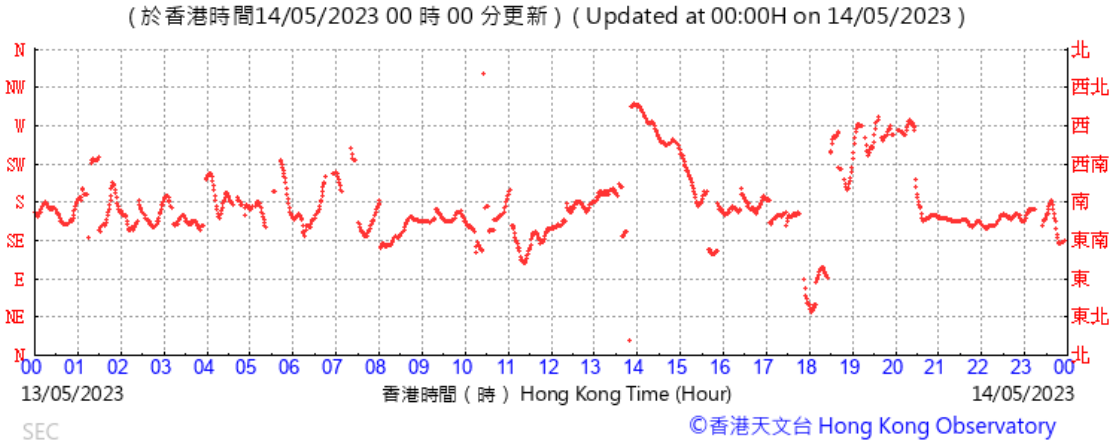

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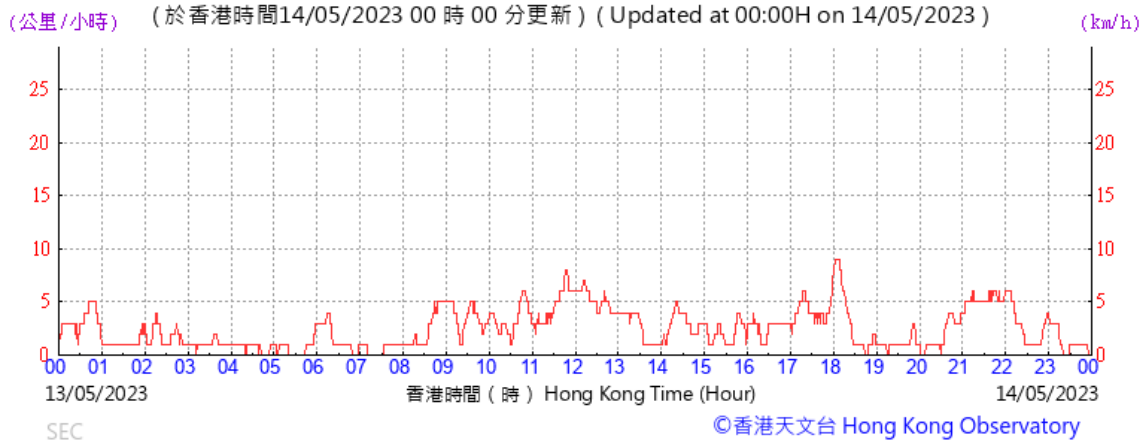

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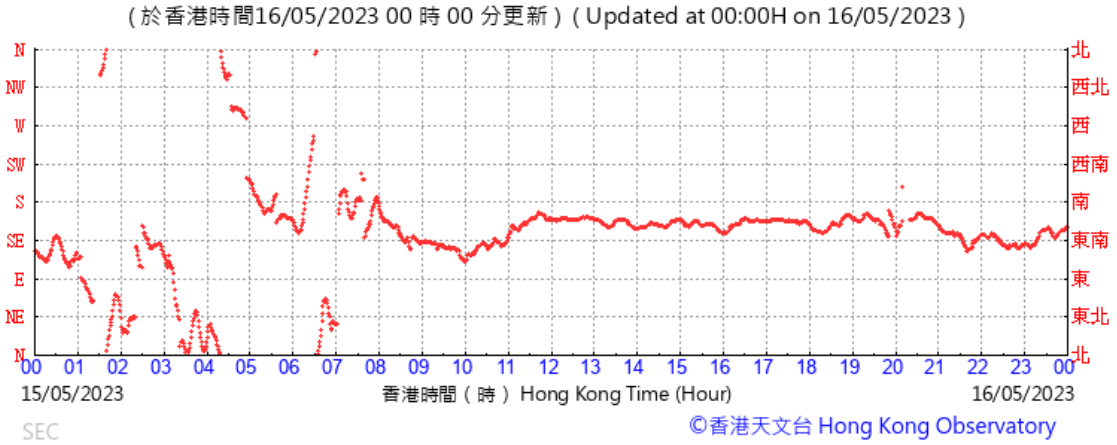

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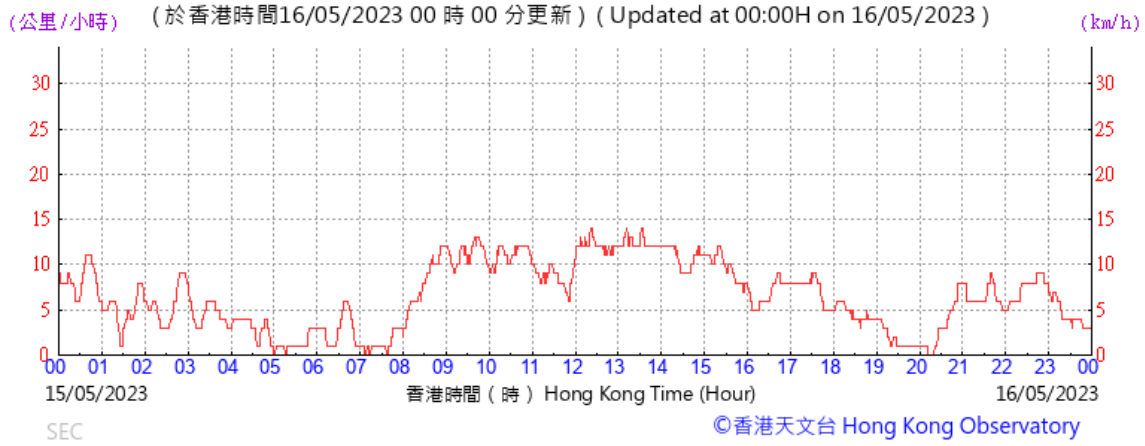

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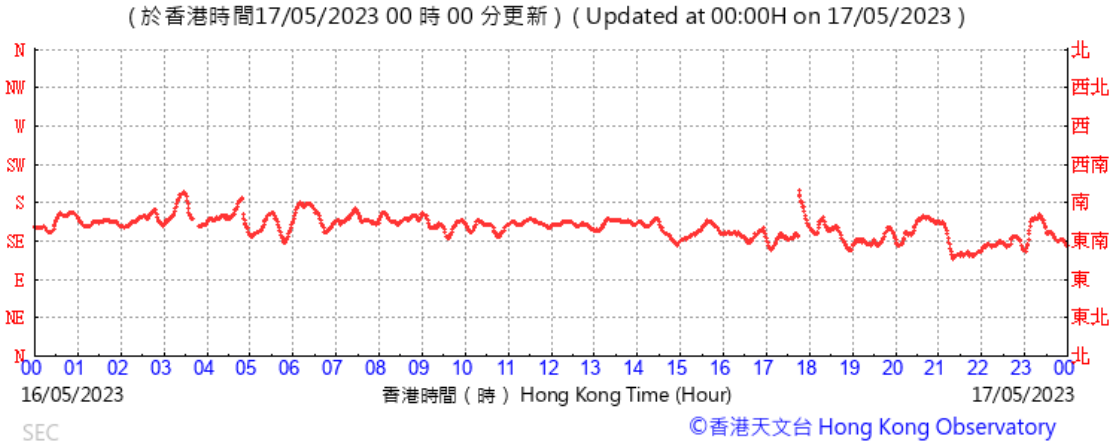

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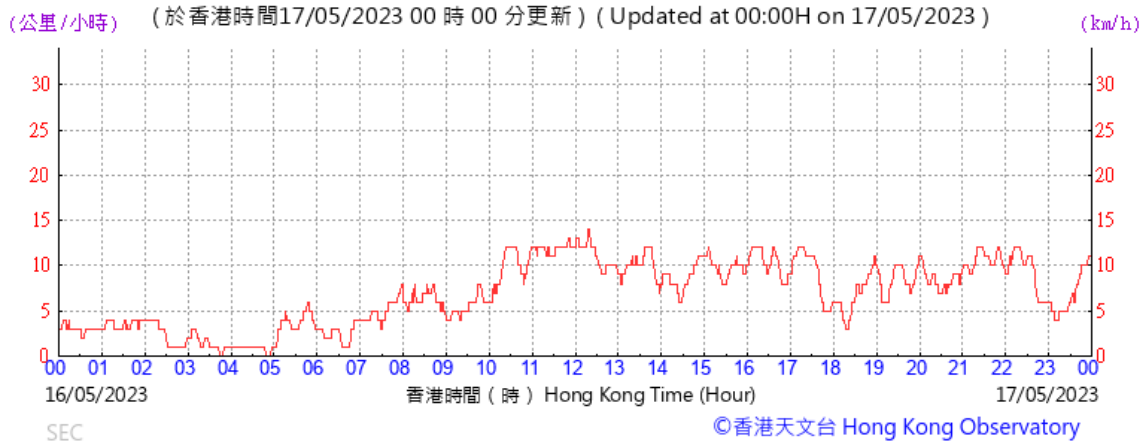

BELLA CHEUNG BIK CHING

From: pphsu@epd.gov.hk
Sent: Wednesday, 10 May 2023 5:58 pm
To: F.C. Tsang
Cc: adrianlaw@umwelt.consulting; cre.wilsonlam@21wsd21.com; GEMINI LAM YEE TING; Howard Chan; hyluk@epd.gov.hk; ivanting@umwelt.consulting; KENNY POON CHIN YU; PAUL YU CHI KUEN; re.howieho@21wsd21.com; Rona Yumul-Leaver; sre.alankwong@21wsd21.com; sre.kirklam@21wsd21.com; Tandy Tse
Subject: Re: Contract No. 21/WSD/21 - Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns (EP No. EP-602/2021): Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

Dear Mr. Tsang,

I refer to your email dated 2 May 2023 enclosing the revised Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring for our comment.

Please be advised that we have no further comment on the revised Proposal.

Grateful if you could submit one hardcopy to our EIAO register office for formal submission to the Director for approval.

Regards,
Alice P.P. Hsu
E(TS)42/EPD
Tel :2835 1151

From: "F.C. Tsang" <FC.Tsang@aurecongroup.com>
To: "pphsu@epd.gov.hk" <pphsu@epd.gov.hk>
Cc: "hyluk@epd.gov.hk" <hyluk@epd.gov.hk>, "cre.wilsonlam@21wsd21.com" <cre.wilsonlam@21wsd21.com>, "sre.alankwong@21wsd21.com" <sre.alankwong@21wsd21.com>, "sre.kirklam@21wsd21.com" <sre.kirklam@21wsd21.com>, "re.howieho@21wsd21.com" <re.howieho@21wsd21.com>, KENNY POON CHIN YU <kenny.poon@chunwo.com>, PAUL YU CHI KUEN <paul.yu@chunwo.com>, GEMINI LAM YEE TING <gemini.lam@chunwo.com>, "ivanting@umwelt.consulting" <ivanting@umwelt.consulting>, "adrianlaw@umwelt.consulting" <adrianlaw@umwelt.consulting>, Tandy Tse <Tandy.Tse@aurecongroup.com>, Rona Yumul <Rona.Yumul@aurecongroup.com>, Howard Chan <Howard.Chan@aurecongroup.com>
Date: 02/05/2023 17:11
Subject: Contract No. 21/WSD/21 - Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns (EP No. EP-602/2021): Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

---

Dear Ms. Hsu,

Thank you for your comments on the Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring (Ref. No.: PAM-2.0, dated 12 April 2023).

We have removed Annex A from the Proposal and re-arrange the order of other annexes accordingly. Please download a copy of the revised Proposal (Ref. No. PAM-3.0) from the link below for your further review and comment.

https://drive.google.com/file/d/1NBr3gL5TyElVxCTxq1WGSyBsk9gyQEVb/view?usp=sharing

A copy of the IEC's verification letter of the revised Proposal is also attached for your reference.

F. C. Tsang
Environmental Team Leader
T: +852 2698 8060 | F: +852 2698 9383
fc.tsang@aurecongroup.com
Unit E, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong
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From: pphsu@epd.gov.hk <pphsu@epd.gov.hk>
Sent: Tuesday, May 2, 2023 11:25 AM
To: F.C. Tsang <FC.Tsang@aurecongroup.com>
Cc: cre.wilsonlam@21wsd21.com; GEMINI LAM YEE TING <gemini.lam@chunwo.com>; Howard Chan <Howard.Chan@aurecongroup.com>; hyluk@epd.gov.hk; ivanting@umwelt.consulting; KENNY POON CHIN YU <kenny.poon@chunwo.com>; PAUL YU CHI KUEN <paul.yu@chunwo.com>; re.howieho@21wsd21.com; Rona Yumul <Rona.Yumul@aurecongroup.com>; sre.alankwong@21wsd21.com; sre.kirklam@21wsd21.com
Subject: Re: Contract No. 21/WSD/21 - Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns (EP No. EP-602/2021): Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

Dear Mr. Tsang,

I refer to your email below enclosing the Baseline Monitoring Report (Ref. No.: PAM-2.0 dated 12 April 2023) for Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns under Condition 3.3 of EP No. : EP602/2021.

Please kindly remove the Annex A from the Baseline Monitoring Report and re-arrange the order of other annexes accordingly .

Regards,
Alice P.P. Hsu
E(TS)42/EPD
Tel :2835 1151

From: "F.C. Tsang" <FC.Tsang@aurecongroup.com>
To: "pphsu@epd.gov.hk" <pphsu@epd.gov.hk>
Cc: "hyluk@epd.gov.hk" <hyluk@epd.gov.hk>, PAUL YU CHI KUEN <paul.yu@chunwo.com>, KENNY POON CHIN YU

<kenny.poon@chunwo.com>, GEMINI LAM YEE TING <gemini.lam@chunwo.com>, "cre.wilsonlam@21wsd21.com" <cre.wilsonlam@21wsd21.com>, "sre.alankwong@21wsd21.com" <sre.alankwong@21wsd21.com>, "sre.kirklam@21wsd21.com" <sre.kirklam@21wsd21.com>, "re.howieho@21wsd21.com" <re.howieho@21wsd21.com>, "ivanting@umwelt.consulting" <ivanting@umwelt.consulting>, Rona Yumul <Rona.Yumul@aurecongroup.com>, Howard Chan <Howard.Chan@aurecongroup.com>
Date: 17/04/2023 19:34
Subject: Contract No. 21/WSD/21 - Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns (EP No. EP-602/2021): Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

---

Dear Ms. Hsu,

In response to the EPD's comments on the Baseline Monitoring Report (your ref. ( ) in Ax(1) to EP 2/K11/Q/236, dated 28 March 2023), we have prepared a "Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline ad Impact Monitoring" for your review. Please download a copy of the Proposal from the link below:

https://drive.google.com/file/d/1zXQfwVAGNy930lk40dkpz-2ciiO5ERpN/view?usp=sharing

This Proposal has been reviewed and verified by the IEC according to Condition 3.1 of Environmental Permit No. EP-602/2021.

A copy of our response to comments on the Baseline Monitoring Report is also attached for your review.

Thank you.

F. C. Tsang
Environmental Team Leader
T: +852 2698 8060 | F: +852 2698 9383
fc.tsang@aurecongroup.com
Unit E, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong
www.aurecongroup.com

From: Leo Lam <are.leolam@21wsd21.com>
Sent: Thursday, March 30, 2023 10:43 AM
To: gemini.lam@chunwo.com; ivanting@umwelt.consulting; F.C. Tsang <FC.Tsang@aurecongroup.com>
Cc: Wilson Lam <cre.wilsonlam@21wsd21.com>; Alan Kwong <sre.alankwong@21wsd21.com>; Kirk Lam <sre.kirklam@21wsd21.com>; Howie Ho <re.howieho@21wsd21.com>; PAUL YU CHI KUEN <paul.yu@chunwo.com>; KENNY POON CHIN YU <kenny.poon@chunwo.com>
Subject: FW: Contract No. 21/WSD/21 - Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns (EP No. EP-602/2021) Submission of Baseline Monitoring Report

Dear all,

Further to your submission regarding Baseline Monitoring Report ref. CWSJV/1076/CSF/0051-2023 dated 17 March 2023, please find attached memo from EPD to WSD regarding comments on the captioned report for your advance information and revision.

Please note that the formal correspondence will be issued to you afterwards.
Best Regards,

Leo Lam

Leo M. T. Lam | ARE (G)(2)
BINNIES HONG KONG LIMITED | 21/WSD/21 – Relocation of Diamond Hill Fresh Water and Salt Water Reservoirs to Caverns
DHSR2 Co-office – Unit No. 502, 5/F, Pioneer Place, 33 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong
+852 9706 8797 M | Email are.leolam@21wsd21.com

Enhancing lives, communities and the environment
43/F AIA Kowloon Tower, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong

Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

Prepared for:

Water Supplies Department

Prepared by:

Acuity Sustainability Consulting Limited

Date: 2 May 2023

Project No.: ASCL-230168321

Reference No.: PAM-3.0

Certified by:

F. C. Tsang
Environmental Team Leader

Acuity Sustainability Consulting Limited
Flat/RM E, 12/F, Ford Glory Plaza,
Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong
tel +852 2698 6833
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Content

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List of Annexes

1. INTRODUCTION

1.1 Project Information

1.1.1 The relocated Diamond Hill Fresh Water and Salt Water Service Reservoirs (DHSRs) will be constructed in a series of caverns linked by access tunnels and adits. The relocated Diamond Hill Fresh Water Service Reservoirs (DHFWSR) and Diamond Hill Salt Water Service Reservoirs (DHSWSR) will be compartmented while the existing Diamond Hill Pumping Station (DHPS) will be split into two (2) pump houses for fresh and salt water supply when relocated.

1.1.2 Ancillary facilities to be constructed near the tunnel portal may include transformer room, switch room, emergency generator room, control room, ventilation building, and pumping station control room, which will be constructed in an above-ground building outside the tunnel.

1.1.3 The scope of the Project comprises the following:

a) Construction of the relocated DHSRs and associated pumping stations and water main laying works;

b) Construction of tunnels, adits, ventilation system and caverns for accommodating the relocated DHSRs and the associated facilities;

c) Terminating the operation of the existing DHSRs and the associated facilities; and

d) All other associated works that are incidental to and necessary for the completion of the Project.

1.2 Purpose of the Proposal

1.2.1 Following the submission of the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023) under Condition 3.3 of Environmental Permit (EP) No. EP-602/2021, comments were issued by the EPD regarding the suitability of noise monitoring at NM-1a, setting up air quality and noise monitoring station at Tsui Chuk Garden, and any additional noise monitoring stations for watermains construction works along Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road.

1.2.2 This Proposal is prepared by the Environmental Team (ET) to respond to the EPD comments. It provides a review of the suitability of noise monitoring at NM-1a and any alternative monitoring location nearby. The resumption of air quality and noise monitoring at Tsui Chuk Garden, and provision of two additional noise monitoring stations at Shatin Pass Estate and Sheung Fung Street are also elaborated in this Proposal.

2. NOISE MONITORING

2.1 Road Pavement at Lung Cheung Road next to Meridian Hill (NM-1a)

2.1.1 Noise monitoring station (NM-1a) at the road pavement of Lung Cheung Road next to Meridian Hill (**Figure 2.1**) was proposed in the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023) as an alternative noise monitoring station of NM-1 at Tower 1, Meridian Hill. The monitoring station was facing the site of the proposed ancillary building and tunnel portal next to Lion Rock Park Transit Nursery.

2.1.2 NM-1a was proposed as an alternative noise monitoring location as the Management Office (MO) of Meridian Hill had rejected the ET's request to set up and carry out noise monitoring within the premises (**Annex A**). An alternative noise monitoring station at the other noise sensitive receiver that has direct line of sight on the construction site similar to NM-1 was proposed at Block B, Peninsula Heights (NSR 1 in the approved EIA Report) (**Annex B**), which is about 70 m to the west of NM-1. However, the ET's proposal was also rejected by the MO of the Peninsula Heights (**Annex A**). As the other noise sensitive receivers (NSRs) near the site along Broadcast Drive was blocked or screened by the buildings at Peninsula Heights or Meridian Hill, they are not considered suitable for noise monitoring. Thus, the ET has reviewed and exhausted the possibility of setting up a noise monitoring station at all the potential NSRs near the construction site of the proposed ancillary building and tunnel portal before the ET proposed to relocate the station to NM-1a.

2.1.3 As reported in the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023), high background noise levels were recorded at NM-1a during the baseline monitoring ($L_{eq(30\text{-}min)}$ ranges from 80.0 to 81.9 dB(A)) and exceeded the relevant Limit Level (75 dB(A)) for construction noise. Due to the dominance of road traffic noise at NM-1a, it is not considered appropriate to carry out noise monitoring at this station during the construction phase. As mentioned in **Section 2.1.2**, no other noise sensitive receivers near the site of proposed ancillary building are considered suitable for alternative noise monitoring. Thus, the monitoring station at NM-1a should be cancelled and no alternative is proposed.

2.2 Tsui Chuk Garden (NM-4)

2.2.1 Tower 6, Tsui Chuk Garden (NM-4) is one of the four proposed noise monitoring stations at the NSRs under the approved EM&A Manual (**Annex C**). It was not included in the baseline noise monitoring carried out in February and March 2023 as no response to the ET's request of noise monitoring was received from the MO or Incorporated Owners (IO) of Tsui Chuk Garden before the deadline. As the IO of Tsui Chuk Garden has eventually expressed no objection to environmental monitoring works at Tsui Chuk Garden (**Annex A**), it is now proposed to resume baseline and impact noise monitoring at Tower 6, Tsui Chuk Garden. The station will be located at the roof of Tower 6, Tsui Chuk Garden facing Chuk Yuen Road (**Annex E**).

2.3 Additional Noise Monitoring Locations

2.3.1 Since open trench method would be adopted in some of the watermains construction works areas along Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road, the

EPD advised the ET to consider setting up one or two additional noise monitoring points along the aforementioned works area when there are construction works at the vicinity. With reference to the approved EIA Report, site visits were carried out on 29 March 2023 and 3 April 2023 at Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road to identify suitable locations of noise monitoring where open trench construction works would be carried out near the identified NSRs (**Figure 2.2**). Having considered the road traffic conditions at Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road, and the space available for the noise monitoring, two NSRs were selected for noise monitoring, namely:

- NSR 25, Wo Tin House, Shatin Pass Estate; and
- NSR P1, Sheung Fung Street Customs Staff Quarter.

2.3.2 The noise monitoring locations will be located at the road pavements just outside the premises of the two NSRs. These additional monitoring stations will meet the following criteria of alternative monitoring location as stated in Section 5.4.3 of the EM&A Manual.

i. Monitoring at sensitive receivers close to the major site activities that are likely to have noise impacts;

ii. Monitoring should close to or at the NSRs as defined in the EIAO-TM; and

iii. Assurance of minimal disturbance to the occupants during monitoring.

2.3.3 In addition, NSR 25 and NSR P1 would be relatively less affected by the road traffic noise than the other NSRs where open trench construction works would be carried out.

2.3.4 The locations of updated baseline and impact noise monitoring are listed in **Table 2.1** and **Figure 2.3.**

Table 2.1 Updated Baseline and Impact Noise Monitoring Stations

ID	NSR ID	Description	Type of Noise Measurement
NM-2	NSR 3	Chun Sing House, Tin Ma Court	Façade
NM-3	NSR 5	Grace Methodist Church Kindergarten	Façade
NM-4	NSR 7	Block 6, Tsui Chuk Garden	Façade
NM-4a	NSR 6	Wang King House, Tin Wang Court	Free-field
NM-5	NSR 25	Wo Tin House, Shatin Pass Estate	Façade
NM-6	NSR P1	Sheung Fung Street Customs Staff Quarter	Free-field

2.3.5 **Annex E** shows the site photos of the proposed noise monitoring locations at NM-4, NM-5, and NM-6.

2.3.6 Once the proposed locations at NM-4, NM-5 and NM-6 are approved, baseline noise monitoring will be carried out at these locations according to the procedure agreed in the Baseline Monitoring Methodology (Ref. No. BMM-2.0, dated 13 February 2023).

3. AIR QUALITY MONITORING

3.1 Tsui Chuk Garden (DM-4)

3.1.1 Tower 6, Tsui Chuk Garden (DM-4) is one of the four proposed air quality monitoring stations at the identified air sensitive receivers under the approved EM&A Manual (**Annex D**). It was not included in the baseline air quality monitoring carried out in February and March 2023 as no response to the ET's request of air quality monitoring was received from the MO or IO of Tsui Chuk Garden before the deadline. As the IO of Tsui Chuk Garden has eventually expressed no objection to environmental monitoring works at Tsui Chuk Garden, it is now proposed to resume baseline and impact air quality monitoring at Tower 6, Tsui Chuk Garden. The station will be located at the roof of Tower 6, Tsui Chuk Garden facing Chuk Yuen Road (**Annex E**).

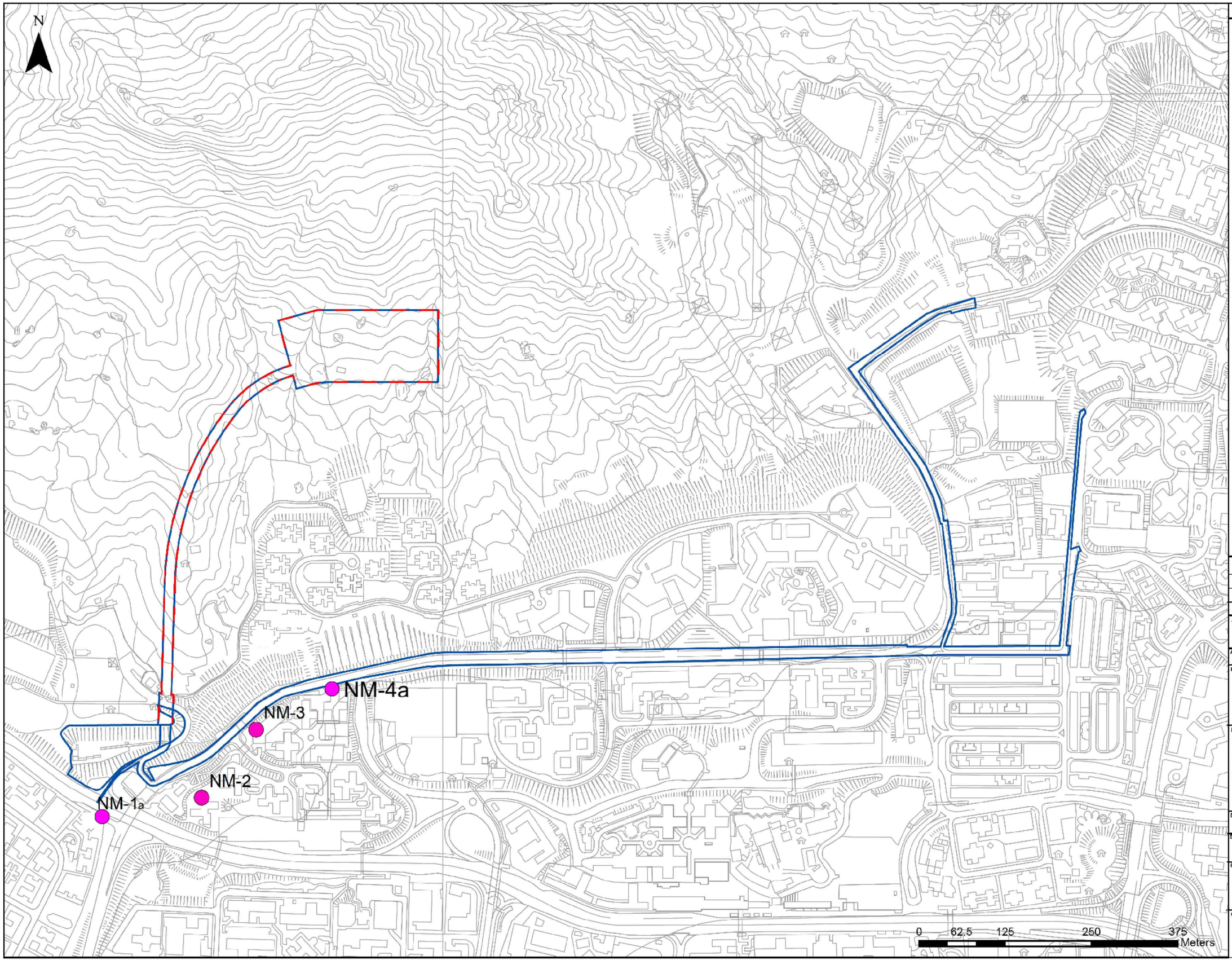
3.1.2 The locations of updated baseline and impact air quality monitoring stations are listed in **Table 3.1** and **Figure 3.1**.

Table 3.1 Updated Baseline and Impact Air Quality Monitoring Stations

ID	ASR ID	Description
DM-1	ASR 2	Tennis Court near Tin Ma Court
DM-2	ASR 5	Chun Sing House, Tin Ma Court
DM-3	ASR 7	Grace Methodist Church Kindergarten
DM-4	ASR 9	Block 6, Tsui Chuk Garden
DM-4a	ASR 8	Wang King House, Tin Wang Court

3.1.3 Once the proposed resumption of air quality monitoring at DM-4 is approved, baseline air quality monitoring will be carried out at DM-4 according to the procedure agreed in the Baseline Monitoring Methodology (Ref. No. BMM-2.0, dated 13 February 2023).

Figures



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- NOISE MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	03/21	03/21	03/21	03/21

Approved: -

Agreement No.

Project Title: **RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION**

Figure Title: Locations of Noise Monitoring Stations during Baseline Monitoring in February/ March 2023

Drawing No. Figure 2.1

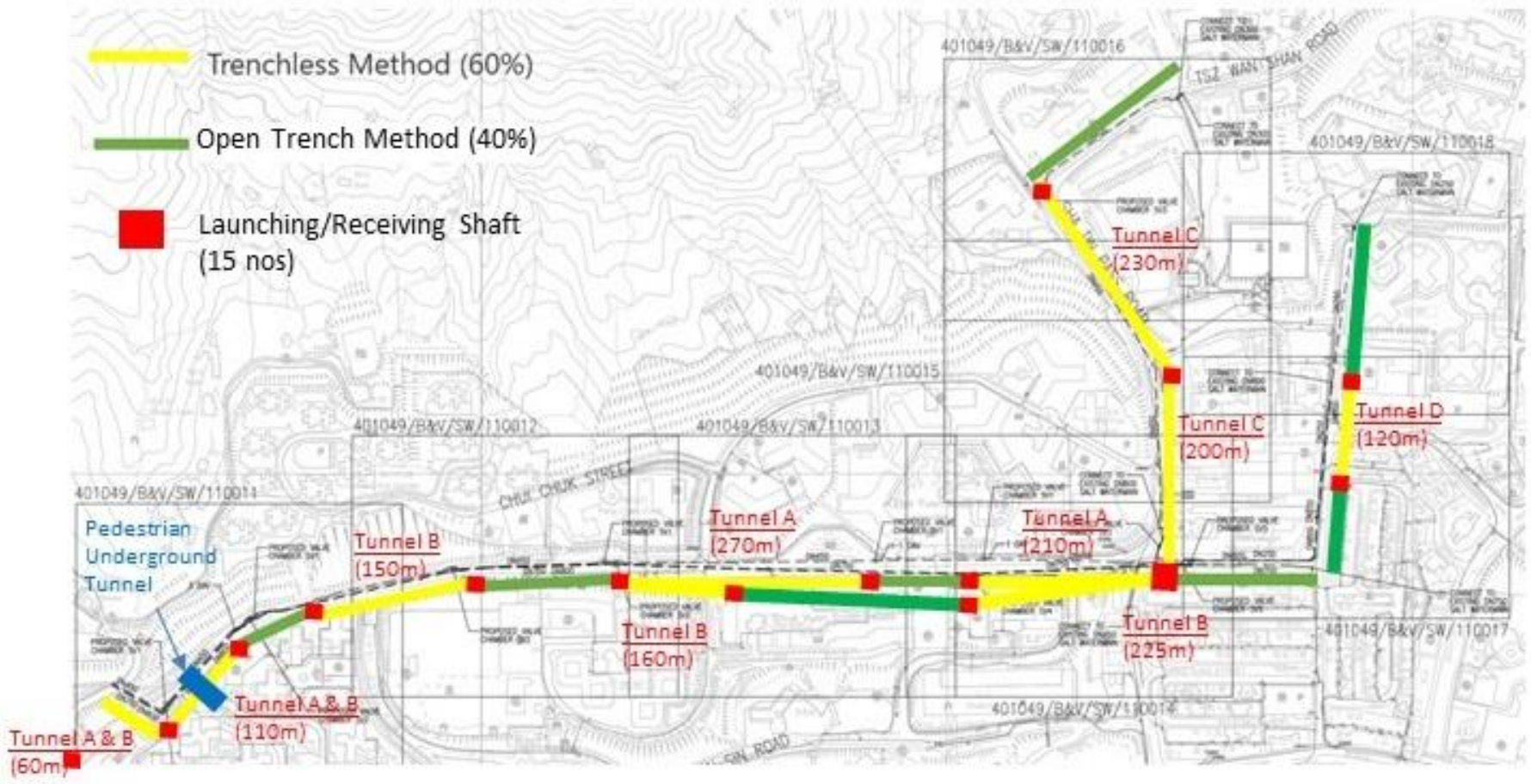
Revision

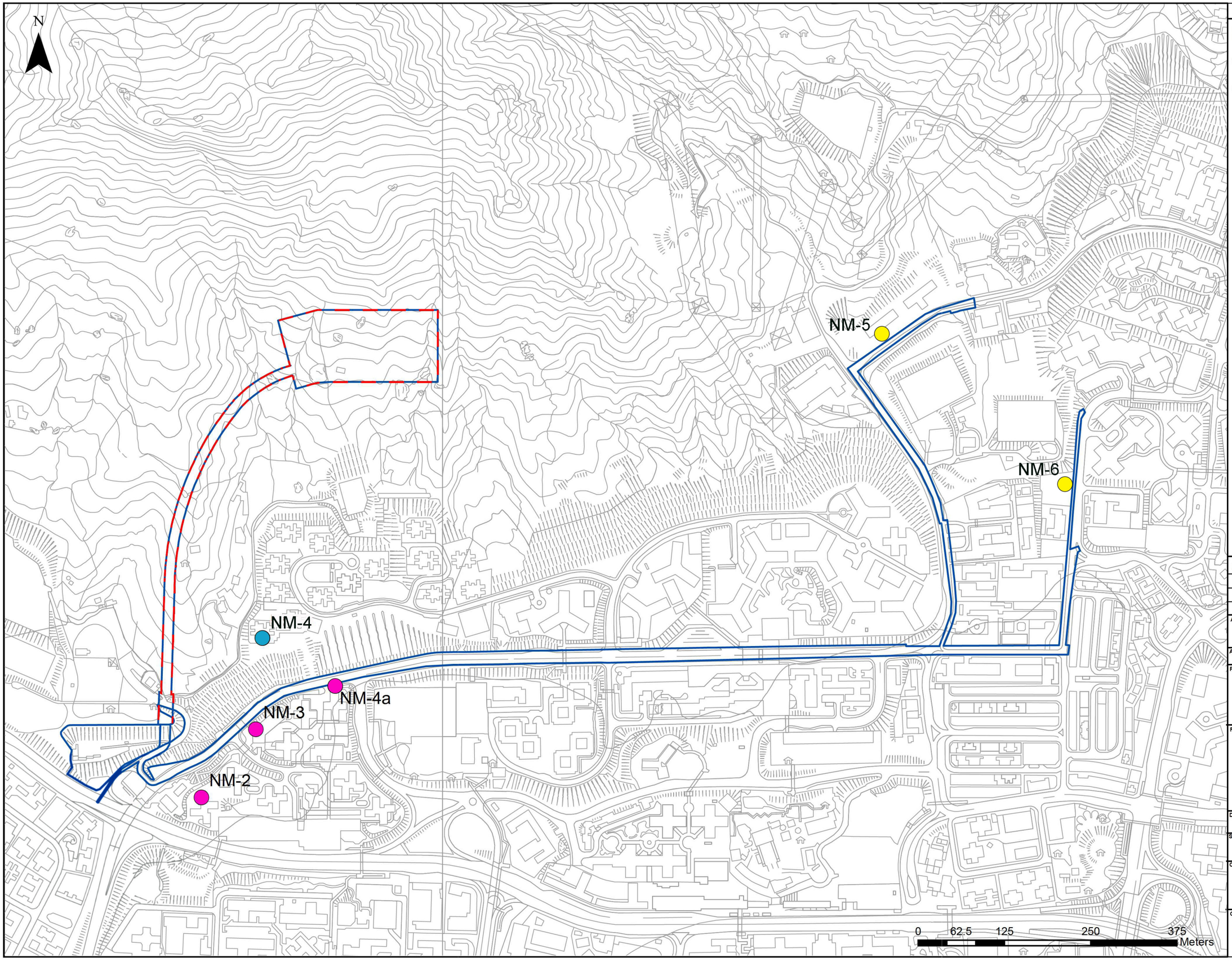
Scale: A3: 1:5,000

Client: 水務署 Water Supplies Department

Consultant: binnies BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司

Figure 2.2 Location Map of Trenchless Method and Open Trench Method (Tentative)





Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION NOISE MONITORING STATION
- ADDITIONAL CONSTRUCTION NOISE MONITORING STATION
- CONSTRUCTION NOISE MONITORING STATION TO BE RESUMED

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	03/21	03/21	03/21	03/21

Approved

-

Agreement No.

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

Locations of Updated Noise Monitoring Stations

Drawing No. Figure 2.3

Revision

Scale

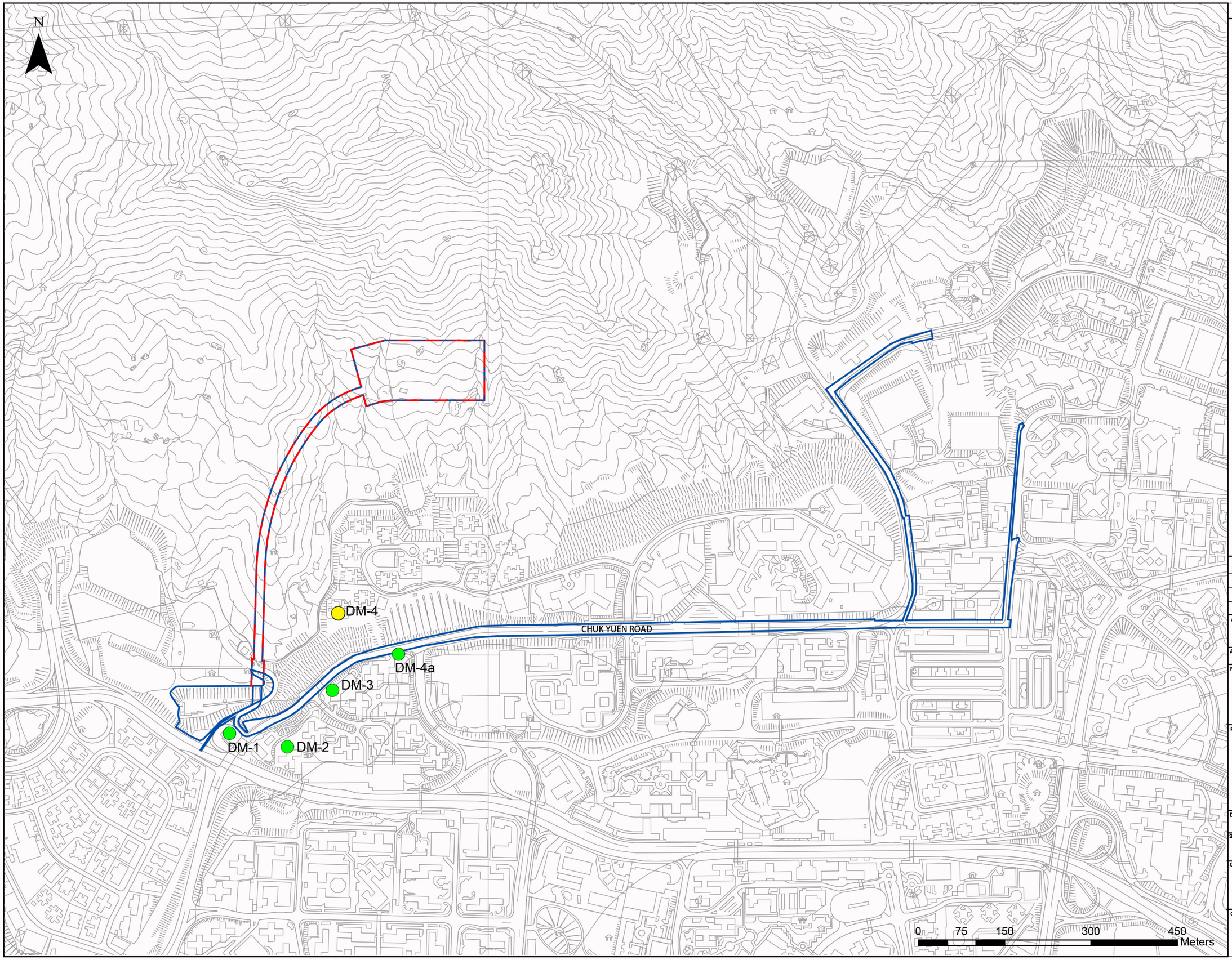
A3: 1:5,000

Client

水務署 Water Supplies Department

Consultant

BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION DUST MONITORING STATION
- CONSTRUCTION DUST MONITORING STATION TO BE RESUMED

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	05/21	05/21	05/21	05/21

Approved

-

Agreement No.

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

Locations of Updated Air Quality Monitoring Stations

Drawing No. Figure 3.1

Revision

Scale

A3: 1:6,000

Client

水務署 Water Supplies Department

Consultant

BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司

Annex A

Responses of Property Management Offices/ Incorporated Owners to the ET's Request of Air Quality/ Noise Monitoring within the Premises

ACUITY sustainability
Member of the Aurecon Group

aurecon

致尚御物業管理處：

<u>合約編號：21/WSD/21 - 搬遷鑽石山食水及海水配水庫往岩洞</u>

<u>基線噪音監測-地方之提供</u>

Roy Wong
PM/MERI

為監察工程對周邊噪音的影響，俊和-中國水電聯營委聘凱淇環境顧問有限公司進行基線噪音監察（見附件一）。根據本工程已批核之環境影響評估報告及環境監察及審核手冊， 貴屋苑被選擇為合適的監察站，故欲於 貴屋苑指定位置進行噪音監察。有關詳情如下：

- 環境監測儀器：聲級計一部（見附件二），所有儀器會於每次監測完成後取回
- 場地：尚御 1 座
- 安裝：儀器會被放置在三腳架上
- 電源： 毋需提供
- 環境監測日期：預計 2023 年 2 月（其中十四天）
- 時間：09:00 – 18:00（其中三十分鐘）

是次監測工作對整項工程及鑽石山一帶之社區環境有重大幫助，誠希 貴屋苑能提供安置場地。為使工程得以順利進行，煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬希回覆！

如有任何查詢，歡迎隨時與我司曾先生（電話：26986833）聯絡。

台安

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

二零二三年一月三十一日

附件

一：俊和-中國水電聯營環境小組聘任書

二：聲級計介紹（共 1 頁）

Acuity Sustainability Consulting Limited
Flat/RM E, 12/F, Ford Glory Plaza,
Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong
tel +852 2698 6833
fax +852 2698 9383 | e-mail admin@acuityhk.com
http www.acuityhk.com | www.aurecongroup.com

回條

水務署合約編號－21/WSD/21

搬遷鑽石山食水及海水配水庫往岩洞

基線噪音監測－地方之提供

致：曾先生

傳真(2698 9383)

本方收到有關上述工程通知，並同意 / 不同意*為工程的環境監察工作於上址提供監測場地。

MERIDIAN HILL SERVICE CENTRE 尚御服務中心

負責人(簽名及蓋印)

姓名： Gary Chung

電話： 2189 2888

日期： -1 FEB 2023

*請刪除不適用者

附件一：俊和-中國水電聯營環境小組聘任書

CHUN WO - SINOHYDRO JV

Your reference :
Our reference : CWSJV/1076/0070-2023

31 January 2023

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

Dear Sir / Madam,

Contract No. 21/WSD/21
Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Appointment of Environmental Team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Acuity Sustainability Consulting Limited (Acuity) is appointed as the environmental team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns. This is to authorize Acuity, on behalf of Chun Wo – Sinohydro JV to conduct relevant Air and Noise Monitoring for the captioned project. We also authorize Acuity to obtain the required information or approval from various government departments / public utilities companies / private premises.

Should you have any further queries, please feel free to contact Miss Gemini Lam of Chun Wo – Sinohydro JV at 6334 6505.

Yours faithfully,
For and on behalf of
CHUN WO – SINOHYDRO JV

Kenny Poon
Site Agent
PY/KP/gl

香港九龍長沙灣大南西街 601 至 603 號香港紗廠工業大廈一期五樓 C 座
5C, Hong Kong Spinners Industrial Building Phase 1,
601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong
Tel: (852) 3758 8711 Fax: (852) 2744 6937

附件二：

聲級計照片 Photos of instrument:

ACUITY sustainability
Member of the Aurecon Group

aurecon

致星輝豪庭物業管理處：

合約編號：21/WSD/21 - 搬遷鑽石山食水及海水配水庫往岩洞

基線噪音監測–地方之提供

為監察工程對周邊噪音的影響，俊和-中國水電聯營委聘凱淇環境顧問有限公司進行基線噪音監察（見附件一）。根據本工程已批核之環境影響評估報告及環境監察及審核手冊， 貴屋苑被選擇為合適的監察站，故欲於 貴屋苑指定位置進行噪音監察。有關詳情如下：

- 環境監測儀器：聲級計一部（見附件二），所有儀器會於每次監測完成後取回
- 場地：星輝豪庭 B 座天台
- 安裝：儀器會被放置在三腳架上
- 電源： 毋需提供
- 環境監測日期：預計 2023 年 2 月（其中十四天）
- 時間：09:00 – 18:00（其中三十分鐘）

是次監測工作對整項工程及鑽石山一帶之社區環境有重大幫助，誠希 貴屋苑能提供安置場地。為使工程得以順利進行，煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬希回覆！

如有任何查詢，歡迎隨時與我司曾先生（電話：26986833）聯絡。

台安

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

二零二三年二月二日

附件

一：俊和-中國水電聯營環境小組聘任書

二：聲級計介紹（共 1 頁）

回條

水務署合約編號 – 21/WSD/21

搬遷鑽石山食水及海水配水庫往岩洞

基線噪音監測 – 地方之提供

致：曾先生

傳真(2698 9383)

本方收到有關上述工程通知，並同意 / 不同意*為工程的環境監察工作於上址提供監測場地。

負責人(簽名及蓋印)

姓名： H.T. Williams APO/PENI

電話： 2187 3808

日期： 02 FEB 2023

*請刪除不適用者

附件一：俊和-中國水電聯營環境小組聘任書

CHUN WO - SINOHYDRO JV

Your reference :
Our reference : CWSJV/1076/0070-2023

31 January 2023

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

Dear Sir / Madam,

Contract No. 21/WSD/21
Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Appointment of Environmental Team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Acuity Sustainability Consulting Limited (Acuity) is appointed as the environmental team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns. This is to authorize Acuity, on behalf of Chun Wo – Sinohydro JV to conduct relevant Air and Noise Monitoring for the captioned project. We also authorize Acuity to obtain the required information or approval from various government departments / public utilities companies / private premises.

Should you have any further queries, please feel free to contact Miss Gemini Lam of Chun Wo – Sinohydro JV at 6334 6505.

Yours faithfully,
For and on behalf of
CHUN WO – SINOHYDRO JV

Kenny Poon
Site Agent
PY/KP/gl

香港九龍長沙灣大南西街 601 至 603 號香港紗廠工業大廈一期五樓 C 座
5C, Hong Kong Spinners Industrial Building Phase 1,
601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong
Tel: (852) 3758 8711 Fax: (852) 2744 6937

附件二：

聲級計照片 Photos of instrument:

ACUITY sustainability
Member of the Aurecon Group

aurecon

致翠竹花園物業管理處：

合約編號：21/WSD/21 - 搬遷鑽石山食水及海水配水庫往岩洞基線之粉塵及噪音監測-地方之提供

為監察工程對周邊空氣質素及噪音的影響，俊和-中國水電聯營委聘凱淇環境顧問有限公司進行基線粉塵及噪音監察（見附件一）。根據本工程已批核之環境影響評估報告及環境監察及審核手冊， 貴屋苑被選擇為合適的監察站，故欲於 貴屋苑指定位置進行粉塵及噪音監察。有關詳情如下：

- 環境監測儀器：空氣懸浮粒子監測儀一部及聲級計一部（見附件二），所有儀器會於每次監測完成後取回
- 場地：翠竹花園第六座
- 安裝：儀器會被放置在三腳架上
- 電源： 毋需提供
- 環境監測日期：預計 2023 年 2 月（其中十四天）
- 時間：09:00 – 18:00（其中三小時）

是次監測工作對整項工程及翠竹花園一帶之社區環境有重大幫助，誠希 貴屋苑能提供安置場地。為使工程得以順利進行，煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬希回覆！

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台安

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

二零二三年二月二日

附件

一：俊和-中國水電聯營環境小組聘任書

二：空氣懸浮粒子監測儀一部及聲級計介紹（共 1 頁）

Acuity Sustainability Consulting Limited
Flat/RM E, 12/F, Ford Glory Plaza,
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tel +852 2698 6833
fax +852 2698 9383 | e-mail admin@acuityhk.com
http www.acuityhk.com | www.aurecongroup.com

回條

水務署合約編號－21/WSD/21

搬遷鑽石山食水及海水配水庫往岩洞

基線之粉塵及噪音監測－地方之提供

致：先生 / 女士

傳真(2698 9383)

本方收到有關上述工程通知，並同意 / ~~不同意~~*為工程的環境監察工作於上址提供監測場地。

THE INCORPORATED OWNERS OF TSUI CHUK GARDEN 翠竹花園 業主立案法團

負責人(簽名及蓋印)

姓名：Chan Chun Man (Chairlady of IO of Tsui Chuk Garden)

電話：2350 3030

日期：22 Feb 2023

*請刪除不適用者

附件一：俊和-中國水電聯營環境小組聘任書

CHUN WO - SINOHYDRO JV

Your reference :
Our reference : CWSJV/1076/0070-2023

31 January 2023

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Yours faithfully,
For and on behalf of
CHUN WO – SINOHYDRO JV

Kenny Poon
Site Agent
PY/KP/gl

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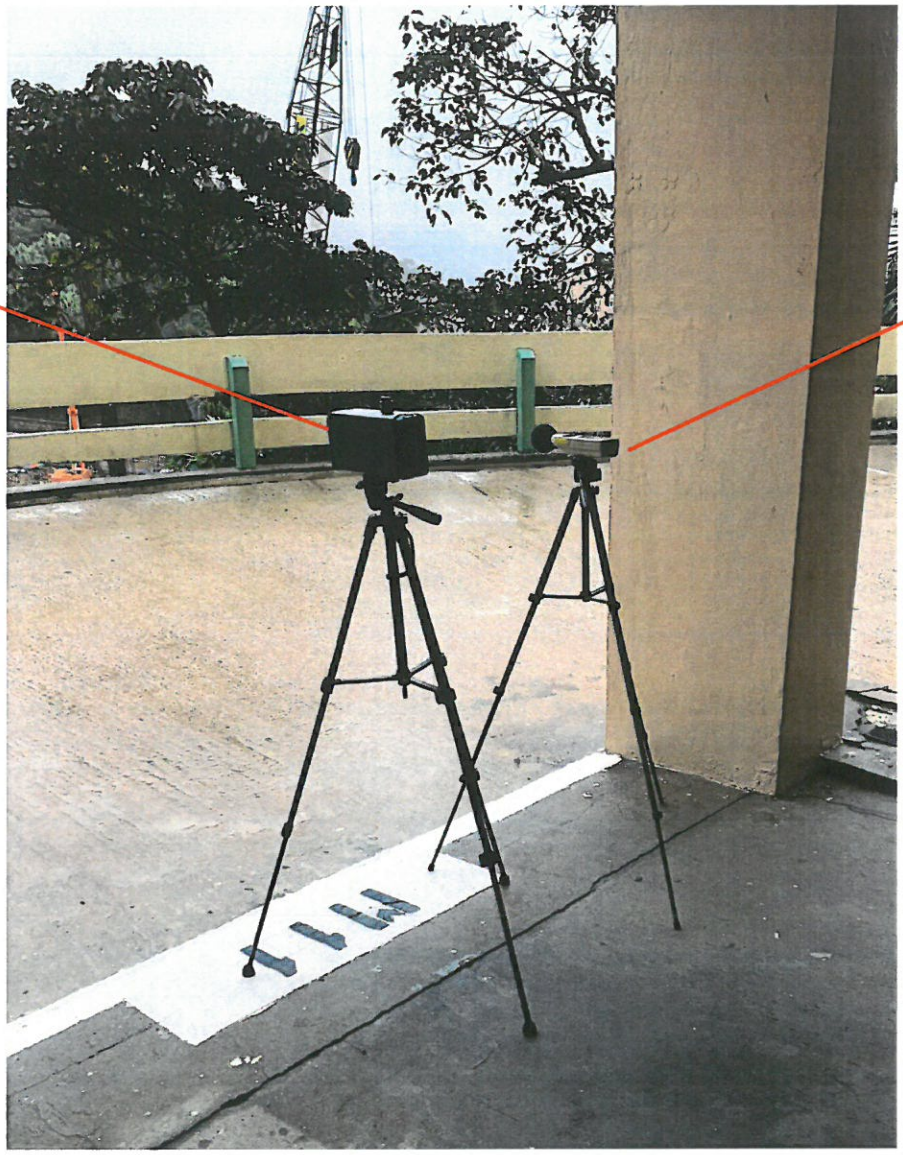
601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong
Tel: (852) 3758 8711 Fax: (852) 2744 6937

附件二：

儀器照片 Photos of instrument:

空氣懸浮粒子監測儀

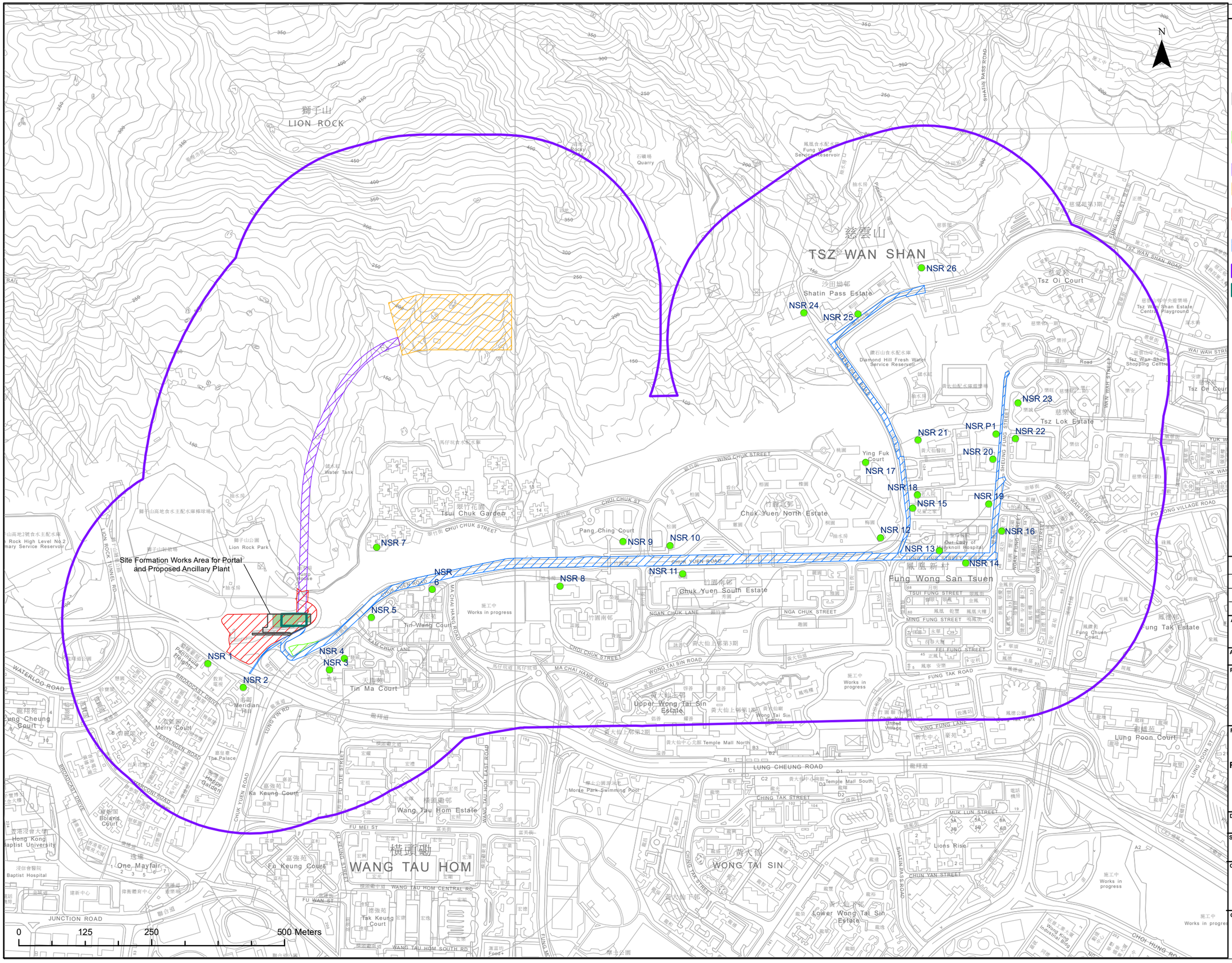


聲級計

Annex B

Representative Noise Sensitive Receivers during Construction Phase

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns, *Environmental Impact Assessment Report* (EIAO Register No. AEIAR-232/2021).)



Legend

- Representative Noise Sensitive Receivers
- Proposed Ancillary Building
- Proposed Temporary Storage Area for Construction Materials
- Proposed Access Tunnel
- Proposed Cavern
- Works Area for Tunnel Portal & Ancillary Building
- Works Area for Water Mainlaying
- Study Area (300m)
- Noise Enclosure

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	PSY	ET	PSY	ET
Date	12/20	12/20	12/20	12/20

Approved
-

Agreement No.
CE 15/2018 (WS)

Project Title
Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns – Investigation, Design and Construction

Figure Title
Representative Noise Sensitive Receivers during Construction Phase

Drawing No.	Revision
Figure 4.2	-

Scale
A3: 1:6,500

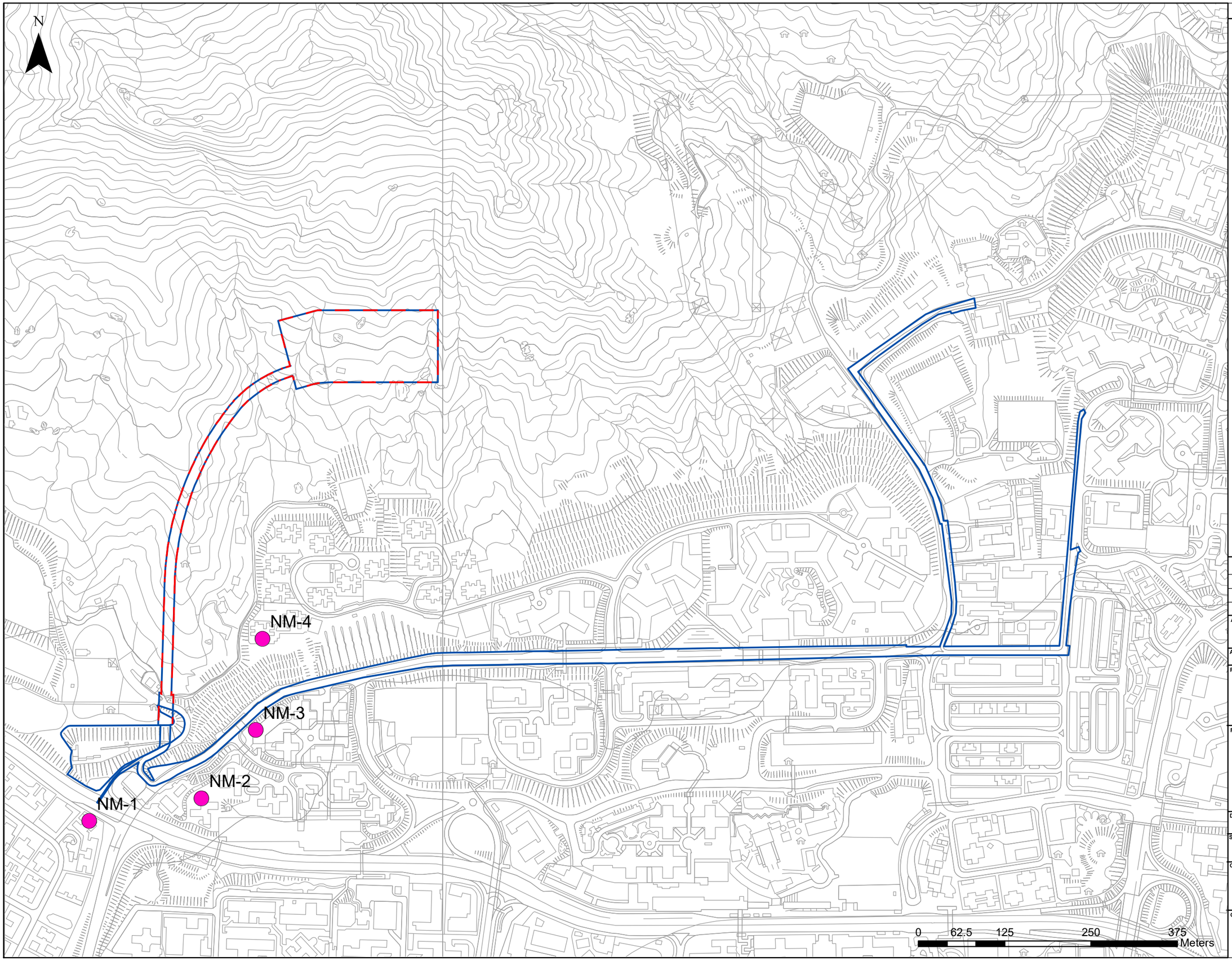
Client
水務署
Water Supplies Department

Consultant
binnies

Annex C

Locations of Construction Noise Monitoring Stations Proposed in the EM&A Manual

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns, *Environmental Monitoring and Audit Report* (EIAO Register No. AEIAR-232/2021).)



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION NOISE MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	03/21	03/21	03/21	03/21

Approved

-

Agreement No.

CE15/2018 (WS)

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

LOCATIONS OF PROPOSED CONSTRUCTION NOISE MONITORING STATIONS

Drawing No. FIGURE 5.1

Revision B

Scale

A3: 1:5,000

Client

水務署 Water Supplies Department

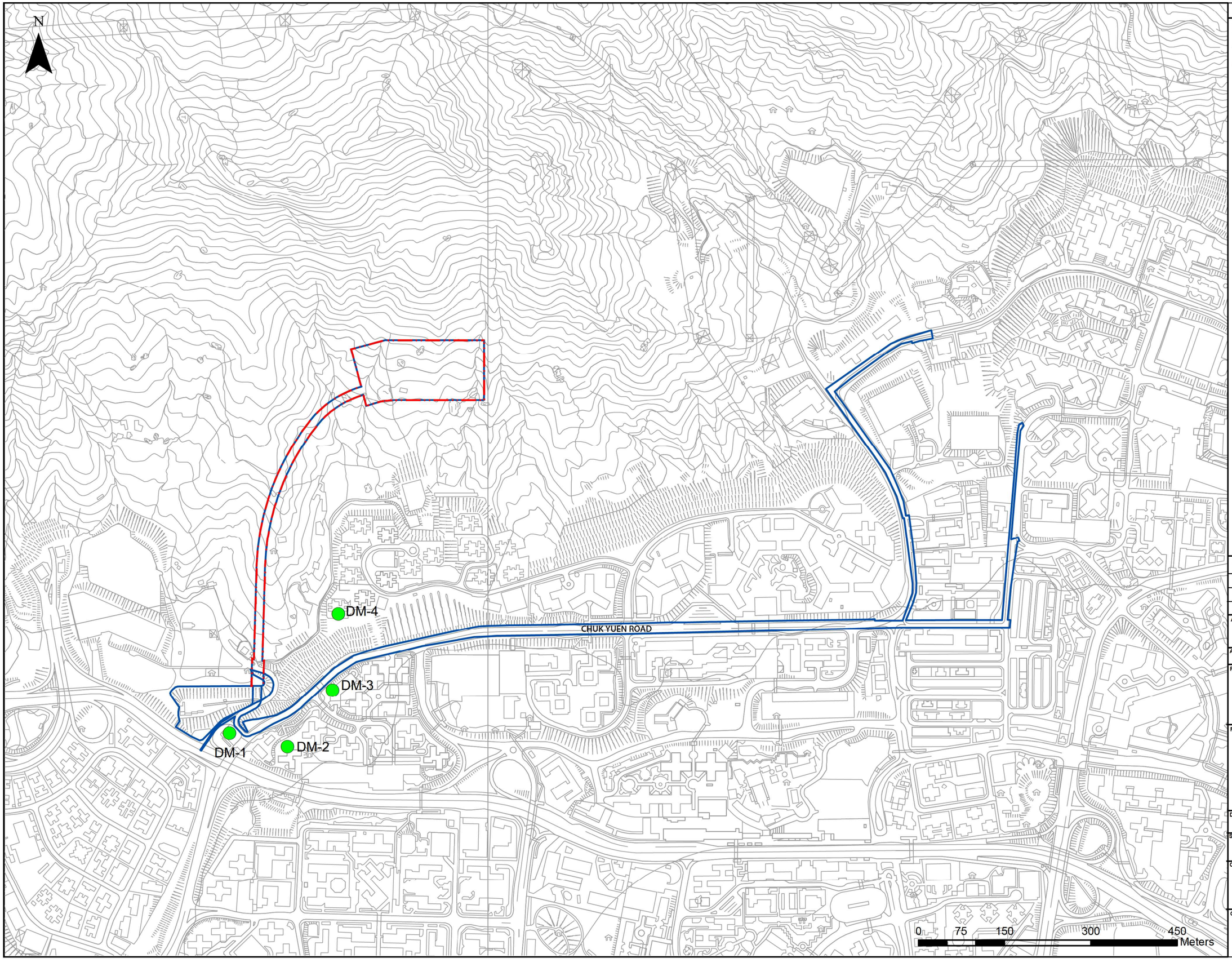
Consultant

BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司

Annex D

Locations of Air Quality Monitoring Stations Proposed in the EM&A Manual

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns, *Environmental Monitoring and Audit Report* (EIAO Register No. AEIAR-232/2021).)



Legend

- PROJECT SITE BOUNDARY
- CAVERN AND TUNNEL (UNDERGROUND)
- CONSTRUCTION DUST MONITORING STATION

Revision	Description			
	Designed	Reviewed	Drawn	Checked
Initial	Wing	ET	Wing	ET
Date	05/21	05/21	05/21	05/21

Approved

-

Agreement No.

CE15/2018 (WS)

Project Title

RELOCATION OF DIAMOND HILL FRESH WATER AND SALT WATER SERVICE RESERVOIRS TO CAVERNS - INVESTIGATION, DESIGN AND CONSTRUCTION

Figure Title

LOCATION OF PROPOSED AIR QUALITY MONITORING STATION (CONSTRUCTION PHASE)

Drawing No.: FIGURE 4.1

Revision: -

Scale: A3: 1:6,000

Client: 水務署 Water Supplies Department

Consultant: BINNIES HONG KONG LIMITED 賓尼斯工程顧問有限公司

Annex E

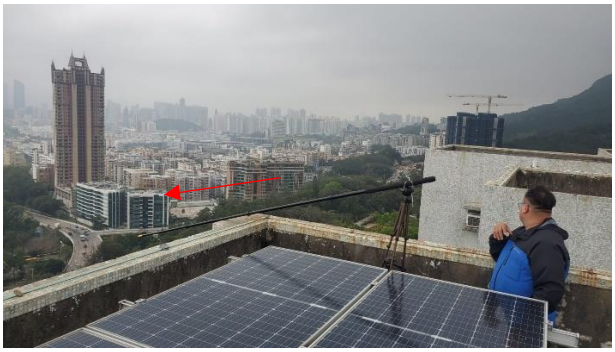
Site Photos of Proposed Air Quality Monitoring Station at DM-4 and Proposed Noise Monitoring Stations at NM-4, NM-5, and NM-6

Proposed Air Quality Monitoring Station at DM-4

DM-4 Block 6, Tsui Chuk Garden (roof)

Remark: The direction facing the project site is indicated by red arrow on each photo.

Proposed Noise Monitoring Stations at NM-4, NM-5, and NM-6.



NM-4 Block 6, Tsui Chuk Garden (roof)

NM-5 Wo Tin House, Shatin Pass Estate (road pavement outside the building)

NM-6 Sheung Fung Street Customs Staff Quarters (road pavement outside the premises)

Remark: The direction facing the project site is indicated by red arrow on each photo.