RAMBOLL ENVIRON

Ref.: CEDKTDS3EM00_0_0035L.16

22 February 2016

Hyder-Meinhardt Joint Venture
Site Office
11 Shing Kai Road
Kowloon Bay
Kowloon

By E-mail and Fax (2983 6214)

Attention: Mr. Pat T. H. Lam

Dear Mr. Lam,

Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Baseline Monitoring Report (Report No. 0405/15/ED/0307C)

Reference is made to the Environmental Team's submission of the captioned *Baseline Monitoring Report* (Report No. 0405/15/ED/0307C) we received by e-mail on 22 February 2016.

Please be informed that we have no adverse comment on the captioned report. We hereby verify the captioned submission according to Condition 3.3 of EP-451/2013. (No conditions of EP-337/2009 and EP-339/2009/A are relevant to this submission.)

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

Yours sincerely,
For and on behalf of
Ramboll Environ Hong Kong Limited

F. C. Tsang
Independent Environmental Checker

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BASELINE MONITORING REPORT

February 2016

Client	**:**	Civil Engineering and Development Department, HKSAR
Contract No.	**:**	KLN/2015/07
Contract Name	**:**	Environmental Monitoring Works for Contract KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Report No.	**:**	0405/15/ED/0307C
EP-337/2009		New Distributor Roads Serving the Planned Kai Tak Development Area
EP-339/2009/A		Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport
EP-451/2013		Trunk Road T2

Prepared by **:** Cyrus C. Y. Lai

Reviewed by **:** Vincent C. T. Chan

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22 February 2016

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EXECUTIVE SUMMARY

i. The Civil Engineering and Development Department HKSAR has appointed MateriaLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and carry out the baseline monitoring.

ii. This Baseline Monitoring Report presents the air quality and noise baseline monitoring works. The air quality and noise baseline monitoring was conducted from 20 January 2016 to 6 February 2016 at three monitoring locations KTD1a, KTD2a and KER1a.

iii. The average results and Action and Limit Levels (A/L Levels) of 1-hr TSP, 24-hr TSP and noise baseline monitoring at the three monitoring locations are summarized in **Table I, II and III** respectively**.** The Action and Limit Levels for air quality impact monitoring were derived based on the criteria adopted from the EM&A Manual.

Table I Summary of 1-hr TSP Baseline Monitoring Results and A/L Levels

Monitoring Station	Average (Range) in $\mu g/m^3$	Action Level $\mu g/m^3$	Limit Level $\mu g/m^3$
KTD1a	54 (20 - 307)	285	500
KTD2a	44 (7 – 127)	279	500
KER1a	69 (15 – 413)	295	500

Table II Summary of 24-hr TSP Baseline Monitoring Results and A/L Levels

Monitoring Station	Average (Range) in $\mu g/m^3$	Action Level $\mu g/m^3$	Limit Level $\mu g/m^3$
KTD1a	73 (12 – 184)	177	260
KTD2a	42 (17 – 75)	157	260
KER1a	65 (17 – 129)	172	260

Table III Summary of Noise Baseline Monitoring Results and A/L Levels

Time Period	Monitoring Station	Monitoring Results Average (Range)	Action Level	Limit Level
Leq $_{(30min)}$, dB(A) (0700-1900 hrs on normal weekday)	KTD1a	78 (53 – 92)	When one documented complaint is received	75 dB(A)
	KTD2a	64 (53 – 75)		
	KER1a	65 (51 – 79)		

Note:
Baseline Leq $_{(30min)}$ was measured at day-time (0700-1900 hrs) on all days. Log-average is presented.

1. INTRODUCTION

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

1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009, EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

EP-451/2013 – Trunk Road T2

(i) Construction of approximately 420m long supporting underground structure (SUS) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development

(ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
(iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
(iv) Construction of drainage outfall and modification of existing seawall;
(v) Construction of ancillary works including surface drainage, sewerage, water, fire fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport

(vi) Demolition of RADAR Tower and guard house;

Other works not covered by any EP

(vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C;
(viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road

1.3 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Environ Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MateriaLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project. The location and boundary of the site is shown in **Figure 1**.

1.4 Purpose of Baseline Monitoring Report

1.4.1 This baseline monitoring report is required under EP-451/2013 Condition 3.3 for Trunk Road T2. The purpose of this report is to establish the baseline conditions of air quality and noise

levels in accordance with the Trunk Road T2 EM&A Manual (AEIAR-174/2013) (hereafter referred as EM&A Manual). These levels are intended as the basis for assessing environmental impact and compliance during construction phase of the Project.

1.4.2 No conditions in EP-337/2009 and EP-339/2009/A are relevant to this baseline monitoring report.

1.4.3 This report presents the baseline monitoring requirements, methodologies and results of baseline measurements in accordance with the requirements, where applicable, in the EM&A Manual.

1.4.4 The baseline monitoring work was conducted from 20 January 2016 to 6 February 2016.

2. AIR QUALITY

2.1 Monitoring Requirement

The Baseline Air Quality Monitoring will be conducted to determine the ambient 1-hour and 24-hour average TSP levels at the monitoring locations prior to the commencement of the construction works. It will be carried out for a continuous period of at least two weeks with the 24-hour and three sets of 1-hour ambient measurements taken daily at all of the designated monitoring locations.

2.2 Monitoring Equipment

The 24-hour TSP air quality monitoring will be performed using High Volume Air Samplers (HVS) located at each of the designated monitoring station. While 1-hour TSP air quality monitoring will be performed using portable TSP monitors.

Table 2.1 summarizes the equipment used in air quality monitoring.

Table 2.1 Air Quality Monitoring Equipment

Item	Brand	Model	Equipment	Serial Number
1	Tisch	TE-5170 (TSP)	High Volume Sampler	
		TE-300-310X	- Mass Flow Controller	2037
		TE-5005X	- Blower Motor Assembly	3482
		TE-5007X	- Mechanical Timer	4488
		TE-5009X	- Continuous Flow Recorder	4371
2	Tisch	TE-5170 (TSP)	High Volume Sampler	
		TE-300-310X	- Mass Flow Controller	2364
		TE-5005X	- Blower Motor Assembly	3478
		TE-5007X	- Mechanical Timer	4492
		TE-5009X	- Continuous Flow Recorder	4377
3	Tisch	TE-5170 (TSP)	High Volume Sampler	
		TE-300-310X	- Mass Flow Controller	2618
		TE-5005X	- Blower Motor Assembly	3838
		G3031	- Mechanical Timer	2251
		G1051	- Continuous Flow Recorder	2307
4	Tisch	TE-5025A	HVS Sampler Calibrator	0438320 / 2154
5	Sibata	Model LD-3B	Sibata Portable TSP Monitors	567195
6	Sibata	Model LD-3B	Sibata Portable TSP Monitors	567191

2.3 Baseline Monitoring Parameters, Frequency and Duration

Table 2.2 summarizes the baseline monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 2.2 Baseline Monitoring Parameters, Duration and Frequency of Air Quality Monitoring

Parameter	Duration	Frequency
1-hr TSP	14 consecutive days	1 hour x 3 per day
24-hr TSP	14 consecutive days	24 hours per day

2.4 Monitoring Methodology

2.4.1 24-hour TSP air quality monitoring

HVS Installation

The following guidelines shall be adopted during the installation of HVS:

- Sufficient support is provided to secure the samplers against gusty wind.
- No two samplers are placed less than 2 meters apart.
- The distance between the sampler and an obstacle, such as buildings, is at least twice the height that the obstacle protrudes above the sampler.
- A minimum of 2 meters of separation from walls, parapets and penthouses is required for rooftop samples.
- A minimum of 2 meters separation from any supporting structure, measured horizontally is required.
- No furnaces or incineration flues are nearby.
- Airflow around the samplers is unrestricted.
- The samplers are more than 20 meters from the drip line.
- Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.

Filters Preparation

Fiberglass filters (provided by the HOKLAS accredited laboratory) shall be used (Note: these filters have a collection efficiency of larger than 99% for particles of 0.3 μm diameter). A HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd.) is responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for monitoring team.

All filters are equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature is around 25°C and not variable by more than ±3°C; the relative humidity (RH) is < 50% and not variable by more than ±5%. A convenient working RH is 40%.

Operating / Analytical Procedures

Operating / analytical procedures for the air quality monitoring are highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS are properly set (between 1.1 m^3/min. and 1.4 m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate shall be indicated on the flow rate chart.
- The power supply shall be checked to ensure the samplers worked properly.
- On sampling, the samplers shall be operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
- The filter holding frame is then removed by loosening the four nuts and carefully a weighted and conditioned filter is centered with the stamped number upwards, on a supporting screen.
- The filter shall be aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame is tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid shall be closed and secured with the aluminum strip.

- The timer is then programmed. Information shall be recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter shall be removed and sent to laboratory for weighing. The elapsed time is also recorded.
- Before weighing, all filters are equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ±3°C; the relative humidity (RH) should be < 50% and not vary by more than ±5%. A convenient working RH is 40%. Weighing results are returned to MCL for further analysis of TSP concentrations collected by each filter.

2.4.2 1-hour TSP air quality monitoring

Operating / Analytical Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Pull up the air sampling inlet cover
- Change the Mode 0 to BG once
- Push Start/Stop switch once
- Turn the knob to SENSI.ADJ and press it
- Push Start/Stop switch once
- Return the knob to the position MEASURE slowly
- Push the timer set switch to set measuring time
- Remove the cap and make a measurement

2.5 Maintenance / Calibration

2.5.1 24-hour TSP air quality monitoring

The following maintenance / calibration are required for the HVS:

- The high volume motors and their accessories are properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking are made to ensure that the equipments and necessary power supply are in good working condition.
- All HVS shall be calibrated (five point calibration) using Calibration Kit upon installation and thereafter in every 3 months.
- A copy of the calibration certificates for the HVS and calibrator are attached.

2.5.2 1-hour TSP air quality monitoring

The portable TSP monitor should be calibrated at 1 year intervals, relevant calibration certificates are given in **Appendix C**.

2.6 Monitoring Locations

2.6.1 According to the EM&A Manual, three air quality and noise monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations, which are identified in Cha Kwo Ling

area, are farther than 500m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.

2.6.2 With reference to the EM&A Manual, the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for air quality monitoring, they are summarized in **Table 2.3** and shown in **Figure 2**. The alternative monitoring location proposal was certified by Environmental Team Leader (ETL), verified by IEC and approved by EPD accordingly under Condition 3.1 of EP-451/2013 (EP-337/2009 and EP-339/2009/A are not applicable). Such proposal is given in **Appendix B**.

Table 2.3 Location of Air Quality Monitoring Station

Monitoring Station	Location
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER1a	Site Boundary at Cheung Yip Street

2.7 Results and Observations

2.7.1 Baseline air quality monitoring was conducted between 20 January 2016 and 4 February 2016. The detail monitoring schedule is shown in **Table 2.4**.

Table 2.4 Baseline Monitoring Schedule for 1-hr TSP Monitoring

SUN	MON	TUE	WED	THU	FRI	SAT
17 Jan	18	19	20 24-hr TSP	21 1-hr TSP 24-hr TSP (without KER1a)	22 1-hr TSP 24-hr TSP	23 1-hr TSP 24-hr TSP
24 1-hr TSP 24-hr TSP	25 1-hr TSP 24-hr TSP	26 1-hr TSP 24-hr TSP	27 1-hr TSP 24-hr TSP	28 1-hr TSP 24-hr TSP	29 1-hr TSP 24-hr TSP	30 1-hr TSP 24-hr TSP
31 1-hr TSP 24-hr TSP	1 Feb 1-hr TSP 24-hr TSP	2 1-hr TSP 24-hr TSP	3 1-hr TSP 24-hr TSP (KER1a only)	4	5	6

Note:
1-hr TSP was conducted for three times per day for 14 consecutive days; 24-hr TSP monitoring was conducted for 14 consecutive days before commencement of construction works.
Due to mal-functioning of monitoring equipment, 24-hr TSP at KER1a conducted on 21 January 2016 is considered invalid, and an additional monitoring for 1 day 24-hr TSP is conducted on 3 February 2016.

2.7.2 During the baseline monitoring, at KTD1a, non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road were observed in the surroundings.

2.7.3 At KTD2a, road traffic along the Kwun Tong By-pass was observed during the baseline monitoring.

2.7.4 At KER1a, road traffic along Cheung Yip Street was observed during the baseline monitoring.

2.7.5 The weather conditions during the monitoring were fine, rainy and cloudy. The prevailing weather conditions, wind speed and wind direction are provided in **Appendix F**.

2.7.6 The monitoring data of 1-hr TSP and 24-hr TSP are summarized in **Table 2.5** and **2.6** respectively. Detailed monitoring data are presented in **Appendix D**.

Table 2.5 Summary of 1-hr TSP Baseline Monitoring Results

Parameter	Monitoring Station	Average (µg/m³)	Range (µg/ m³)
1-hr TSP in µg/m³	KTD1a	54	20 – 307
	KTD2a	44	7 – 127
	KER1a	69	15 – 413

Table 2.6 Summary of 24-hr TSP Baseline Monitoring Results

Parameter	Monitoring Station	Average (µg/m³)	Range (µg/ m³)
24-hr TSP in µg/m³	KTD1a	73	12 – 184
	KTD2a	42	17 – 75
	KER1a	65	17 – 129

2.8 Action and Limit Levels for TSP Monitoring

2.8.1 **Table 2.7** summarizes the Action and Limit (A/L) Levels to be used for construction dust.

Table 2.7 Action and Limit Levels for Construction Dust Impact Monitoring

Parameter	Action Level	Limit Level
1-hr TSP (average)	BL ≤ 384 µg/m³, AL = (BL x 1.3 + LL)/2 BL > 384 µg/m³, AL = LL	500µg/m³
24-hr TSP (average)	BL ≤ 200 µg/m³, AL = (BL x 1.3 + LL)/2 BL > 200 µg/m³, AL = LL	260µg/m³

Note:
BL= Baseline Level; AL = Action Level; LL = Limit Level

2.8.2 Following the above guidelines, the Action and Limit Levels for air quality impact monitoring have been set, as presented in **Table 2.8** and **2.9**:

Table 2.8 Action and Limit Levels for 1-hr TSP

Parameter	Monitoring Station	Action Level (µg/m³)	Limit Level (µg/ m³)
1-hr TSP (µg/m³)	KTD1a	285	500
	KTD2a	279	
	KER1a	295	

Table 2.9 Action and Limit Levels for 24-hr TSP

Parameter	Monitoring Station	Action Level (µg/m³)	Limit Level (µg/ m³)
24-hr TSP (µg/m³)	KTD1a	177	260
	KTD2a	157	
	KER1a	172	

2.9 Event and Action Plan

2.9.1 The Event and Action Plan for Air Quality are given in Table 2.10.

Table 2.10 Event and Action Plan for Construction Dust Monitoring

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level				
Exceedance for one sample.	1. Identify sources, investigate the causes of complaint and propose remedial measures. 2. Inform IEC and ER. 3. Repeat measurement to confirm finding;. 4. Increase monitoring frequency	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods.	1. Notify the Contractor.	1. Rectify any unacceptable practices. 2. Amend working methods agreed with the ER as appropriate.
Exceedance for two or more consecutive samples.	1. Identify sources. 2. Inform the IEC and ER. 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings. 5. Increase monitoring frequency to daily. 6. Discuss with the IEC, ER and Contractor on remedial action required. 7. If exceedance continues, arrange meeting with the IEC, Contractor and ER. 8. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods. 3. Discuss with the ET, ER and Contractor on possible remedial measures if required. 4. Advise the ER on the effectiveness of proposed remedial measures if required.	1. Notify the Contractor. 2. Ensure remedial measures properly implemented.	1. Submit proposals for remedial action to the ER within 3 working days of notification. 2. Implement the agreed proposals. 3. Amend proposal as appropriate
Limit Level				
Exceedance for one sample.	1. Identify sources, investigate causes of exceedance and proposed remedial measures. 2. Inform the IEC, ER, and Contractor. 3. Repeat measurement to confirm finding. 4. 4. Increase monitoring frequency to daily. 5. Assess effectiveness of the Contractor's remedial action and keep the IEC and ER informed of the results	1. Check monitoring data submitted by the ET. 2. Check the Contractor's working methods. 3. Discuss with the ET, ER and Contractor on possible remedial measures. 4. Advise the ER and ET on the effectiveness of the proposed remedial measures. 5. Supervise the implementation of remedial measures.	1. Confirm receipt of the notification of exceedance in writing. 2. Notify the Contractor. 3. Ensure remedial measures are properly implemented.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Amend proposal as appropriate.
Exceedance for two or more consecutive samples	1. Notify the IEC, ER and Contractor. 2. Identify sources. 3. Repeat measurements to confirm findings. 4. Increase monitoring frequency to daily.	1. . Discuss amongst the ER, ET and Contractor on the potential remedial action. 2. Review the Contractor's remedial action whenever necessary to assure their	1. Confirm receipt of the notification of exceedance in writing. 2. Notify the Contractor. 3. In consultation with the IEC and ET, agree with the Contractor on the remedial measures to be	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the ER and copy to the IEC and ET within 3 working days of notification.

EVENT	ACTION			
	ET	**IEC**	**ER**	**Contractor**
	5. Carry out analysis of the Contractor's working procedures with the ER to determine the possible mitigation to be implemented. 6. Arrange meeting with the IEC and ER to discuss the remedial action to be taken. 7. Assess the effectiveness of the Contractor's remedial action and keep the IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring	effectiveness and advise the ER and ET accordingly. 3. Supervise the implementation of remedial measures.	implemented. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what portion of works is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	3. Implement the agreed proposals. 4. Resubmit proposals if problems still not under control. 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

3. NOISE

3.1 Monitoring Requirement

Baseline Noise Monitoring will be conducted for a period of 14 consecutive days prior to the commencement of construction works at a minimum logging interval of 30 minutes during the daytime between 0700 and 1900 at the designated monitoring locations.

3.2 Monitoring Equipment

The sound level meter used in noise monitoring will comply with the International Electrotechnical Commission Publication (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum issued under the Noise Control Ordinance (NCO).

Sound level calibrator will be used for the on-site calibration of the meter. This calibrator complies with the IEC Publication 942 (1988) Class 1 and ANSI S1.40 - 1984. Noise measurements were only accepted to be valid if the calibration levels from before and after the measurement agree to within 1.0dB.

Measurements shall be recorded to the nearest 0.1dB. This noise monitors are programmed to measure A-weighted equivalent continuous sound pressure level at 30-minute intervals between 0700 and 1900 during the daytime. The noise measurement shall be conducted for 14 consecutive days.

Table 3.1 summarizes the noise monitoring equipment model being used for this project. Copies of equipment catalogue are given **Appendix C.**

Table 3.1 Noise Monitoring Equipment

Item	Brand	Model	Equipment	Serial Number
1	Casella	CEL-63X Series	Integrating Sound Level Meter	2451028
2	Casella	CEL-63X Series	Integrating Sound Level Meter	2451083
3	Casella	CEL-63X Series	Integrating Sound Level Meter	2451048
4	Casella	CEL-120/1	Calibrator	5230950
5	Casella	CEL-120/1	Calibrator	5230923
6	Casella	CEL-120/1	Calibrator	5230758*

Note:
*Sound Calibrator (5230758) is only used between 21 January 2016 and 1 February 2016.

3.3 Monitoring Parameters and Frequency

Table 3.2 presents the baseline noise monitoring parameters and frequencies.

Table 3.2 Baseline Monitoring Parameters and Frequencies of Noise Monitoring

Parameter	Frequency and Period
LAeq **(30min)** L10 and L90 will be recorded for reference	Continuously throughout the measurement period (Daytime: 0700-1900) for 14 consecutive days

3.4 Monitoring Methodology

The monitoring procedures are as follows:

- The monitoring station will set at a point 1m from the exterior of the sensitive receivers building façade and set at a position 1.2m 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 measurement time will set as follows:
  - frequency weighting : A
  - time weighting : Fast
  - measurement time : Daily for 24 hours
- Prior to and after noise measurement, the meter shall be calibrated using the 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 will considered invalid and repeat of noise measurement is required after re-calibration or repair of the equipment.
- The wind speed at the monitoring station shall be checked with the portable wind meter. Noise monitoring should be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.
- Noise measurement should be paused during periods of high intrusive noise if possible and observation shall be recorded when intrusive noise is not avoided.
- At the end of the monitoring period, the Leq, L10 and L90 shall be recorded. In addition, site conditions and noise sources should be recorded on a standard record sheet.

3.5 Maintenance / Calibration

Maintenance and Calibration procedures are as follows:

- The microphone head of the sound level meter and calibrator should be cleaned with a soft cloth at quarterly intervals.
- The sound level meter and calibrator should be calibrated annually by a HOKLAS laboratory.
- Relevant calibration certificates are provided in **Appendix C**.

3.6 Monitoring Locations

3.6.1 According to the EM&A Manual, three noise monitoring locations, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two noise monitoring locations, which are identified in Cha Kwo Ling area, are farther than 300m away from the site boundary and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.

3.6.2 With reference to the EM&A Manual, the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1a) for noise monitoring, they are summarized in **Table 3.3** and shown in **Figure 2**. The alternative monitoring location proposal was certified by Environmental Team Leader (ETL), verified by IEC and approved by EPD accordingly under Condition 3.1 of EP-451/2013 (EP-337/2009 and EP-339/2009/A are not applicable). Such proposal is given in **Appendix B**.

Table 3.3 Location of Noise Monitoring Station

Monitoring Station	Location
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER1a	Site Boundary at Cheung Yip Street

3.7 Results and Observations

3.7.1 Baseline noise monitoring was conducted at three monitoring stations between 21 January 2016 and 6 February 2016. With reference to the Hong Kong Observatory data and site observation, rainy or windy (over 5m/s average wind speed) weather was observed and data collected during these intervals are excluded for data analysis. The detail monitoring schedule is shown in **Table 3.4** and the time periods with rainy or windy weather are summarized in **Table 3.5**. The prevailing weather conditions, wind speed and wind direction are provided in **Appendix F**.

Table 3.4 Baseline Monitoring Schedule for Noise Monitoring

SUN	MON	TUE	WED	THU	FRI	SAT
17 Jan 16	18	19	20	21 N	22 N	23 N
24 N	25 N	26 N	27 N	28 N	29 N	30 N
31 N	1 Feb N	2 N	3 N	4 N	5 N	6 N

Legend:
N: Noise monitoring at KTD1a, KTD2a and KER1a for at least 14 consecutive days before commencement of construction work.

Remarks:
Noise monitoring data collected during rainy or windy periods are summarized in **Table 3.5**, and are excluded for data analysis.

Table 3.5 Time Periods with Rainy or Windy weather

	Time Period																						
Date	7:00 – 7:30	7:30 – 8:00	8:00 – 8:30	8:30 – 9:00	9:00 – 9:30	9:30 – 10:00	10:00 – 10:30	10:30 – 11:00	11:00 – 11:30	11:30 – 12:00	12:00 – 12:30	12:30 – 13:00	13:00 – 13:30	13:30 – 14:00	14:00 – 14:30	14:30 – 15:00	15:00 – 15:30	15:30 – 16:00	16:00 – 16:30	16:30 – 17:00	17:00 – 17:30	17:30 – 18:00	18:00 – 18:30	18:30 – 19:00
21/01/16																							
22/01/16						W	W	W	W				R	R										W
23/01/16							W							W	W	W	W	W	W			W	W	W
24/01/16	W	W	W	W	W	W	W	W	W	W	W	W	W		R	R							W	W
25/01/16																								
26/01/16																								
27/01/16												W												
28/01/16					R	R	R	R					R	R										
29/01/16									R	R														
30/01/16														W	W	W	W			W	W			
31/01/16	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W					
01/02/16																								

02/02/16	W	W	W	W																		
03/02/16												W	W									
04/02/16																						
05/02/16											W	W					W	W	W		W	
06/02/16								W			W	W	W	W	W		W	W				W	

Note:
W: Period with average wind speed over 5m/s
R: Period with rain

3.7.2 During the baseline monitoring, at KTD1a, non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road were observed in the surroundings, and contributed to the occasional high noise levels (over 80dB(A)) and high average noise level.

3.7.3 At KTD2a, road traffic noise along the Kwun Tong By-pass was observed during the baseline monitoring.

3.7.4 At KER1a, road traffic along Cheung Yip Street was observed during the baseline monitoring.

3.7.5 The monitoring data are summarized in **Table 3.6**. Detailed noise monitoring data are presented in **Appendix E**.

Table 3.6 Summary of Noise Baseline Monitoring Results

Time Period	Leq $_{(30min)}$ Average (Range)		
	Noise Monitoring Stations		
	KTD1a	KTD2a	KER1a
0700-1900 hrs on all days	78 (53 – 92)	64 (53 – 75)	65 (51 – 79)

Note:
Leq $_{(30min)}$ was measured at day-time (0700-1900 hrs) on all days. Log-average is presented.
KTD1a: Façade Measurement
KTD2a & KER1a: Free-field measurement (+3dB(A) correction has been applied)

3.8 Action and Limit Level

3.8.1 The Action and Limit Levels were established in accordance with the EM&A Manual. The baseline noise level shall be referenced during the compliance check in the impact noise monitoring period. **Table 3.7** presents the Action and Limit Levels for construction noise.

Table 3.7 Action and Limit Levels for Construction Noise

Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2a KER1a	When one documented complaint is received	75 dB(A)

3.9 Event and Action Plan

3.9.1 The Event and Action Plan is given in **Table 3.8**.

Table 3.8 Event and Action Plan for Noise Impact

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level	1. Notify the IEC, ER and Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC and Contractor. 4. Discuss jointly with the ER and Contractor and formulate remedial measures. 5. Increase the monitoring frequency to check the mitigation effectiveness	1. Review the monitoring data submitted by the ET. 2. Review the construction methods and proposed redial measures by the Contractor, and advise the ET and ER if the proposed remedial measures would be sufficient	1. Notify the Contractor. 2. Require the Contractor to propose remedial measures for implementation if required.	1. Submit noise mitigation proposals to the ER and copy to the IEC and ET. 2. Implement noise mitigation proposals.
Limit Level	1. Notify the IEC, ER and Contractor. 2. Identify sources. 3. Repeat measurements to confirm findings. 4. Carry out analysis of the Contractor's working procedures with the ER and Contractor to determine possible mitigations to be implemented. 5. Record the causes and action taken for the exceedances. 6. Increase the monitoring frequency. 7. Assess the effectiveness of the Contractor's remedial action with the ER and keep the IEC informed of the results. **8.** If exceedance stops, cease additional monitoring	1. Discuss amongst the ER, ET and Contractor on the potential remedial action. 2. Review the Contractor's remedial action whenever necessary to assure their effectiveness and advise the ER accordingly. **3.** Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problems. 4. Ensure remedial measures are properly implemented. **5.** If exceedance continues, consider what portion of work is responsible and instruct the Contractor to stop that portion of works until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial action to the ER and copy to the ET and IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problems still not under control. **5.** Stop the relevant portion of works as determined by the ER until the exceedance is abated.

4. REVISIONS FOR INCLUSION IN THE EM&A MANUAL

The baseline environmental monitoring was conducted according to the EM&A Manual for air quality and noise. The monitoring methodology and parameters monitored are all in line with the EM&A Manual.

5. CONCLUSIONS

5.1.1 The baseline air quality and noise monitoring was conducted from 20 January 2016 to 6 February 2016. The baseline monitoring results were used to determine the appropriate Action and Limit Levels with the Limit Levels set against statutory or otherwise agreed limit.

5.1.2 The baseline monitoring were carried out in accordance with the EM&A Manual, in respect of the methodology, equipment, location and monitoring parameters.

5.1.3 Baseline air quality and noise monitoring was conducted at monitoring stations KTD1a, KTD2a and KER1a. The baseline results are considered representative to the ambient conditions of the respective sensitive receivers.

5.1.4 The Action and Limit Levels were derived based on the baseline monitoring results, impact monitoring will be conducted in the construction phase and the Event and Action Plan will be triggered based on the established Action and Limit Levels.

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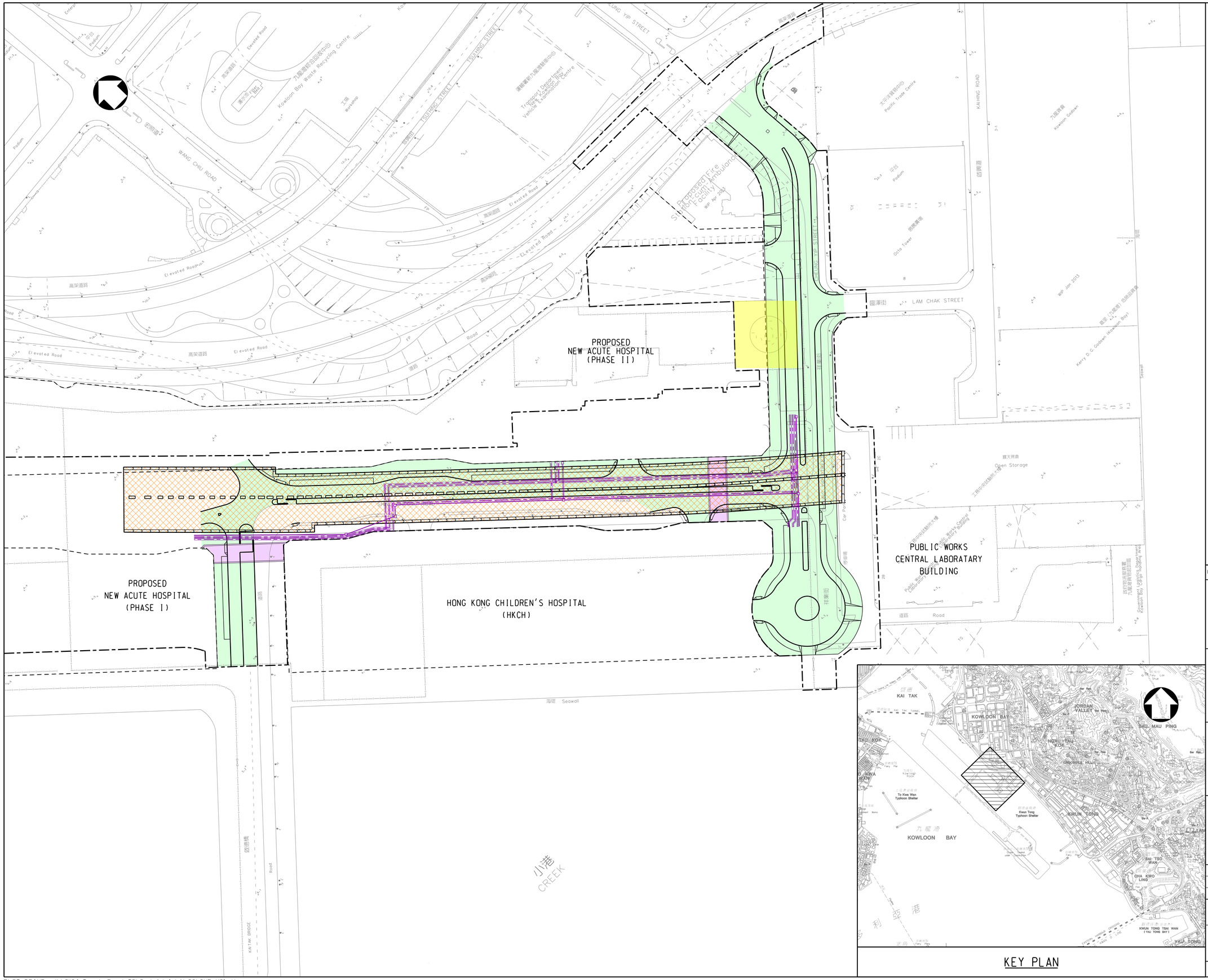
Figure 1

Project General Layout



KEY PLAN

LEGENDS:

- SITE BOUNDARY
- HOSPITAL SITE BOUNDARY
- PROPOSED SUPPORTING UNDERGROUND STRUCTURE
- PROPOSED SUBWAYS
- PROPOSED ROADWORKS
- PROPOSED DISTRICT COOLING SYSTEM
- DEMOLITION OF RADAR TOWER

Rev.	Date	Drawn	Description	Checked	Approved

Hyder MEINHARDT
Hyder-Meinhardt JV

CLIENT

CEDD 土木工程拓展署 Civil Engineering and Development Department
九龍拓展處 Kowloon Development Office

PROJECT

CONTRACT NO. KL/2014/03
KAI TAK DEVELOPMENT - STAGE 3
INFRASTRUCTURE WORKS FOR
DEVELOPMENTS AT THE SOUTHERN PART OF
THE FORMER RUNWAY

TITLE

GENERAL LAYOUT PLAN

DESIGNED			ENG. CHECK		
DRAWN			COORDINATION		
DWG. CHECK			APPROVED		

SCALE AT A1	STATUS	REV
1 : 1000		A

Drawing No.

FIGURE 1.0

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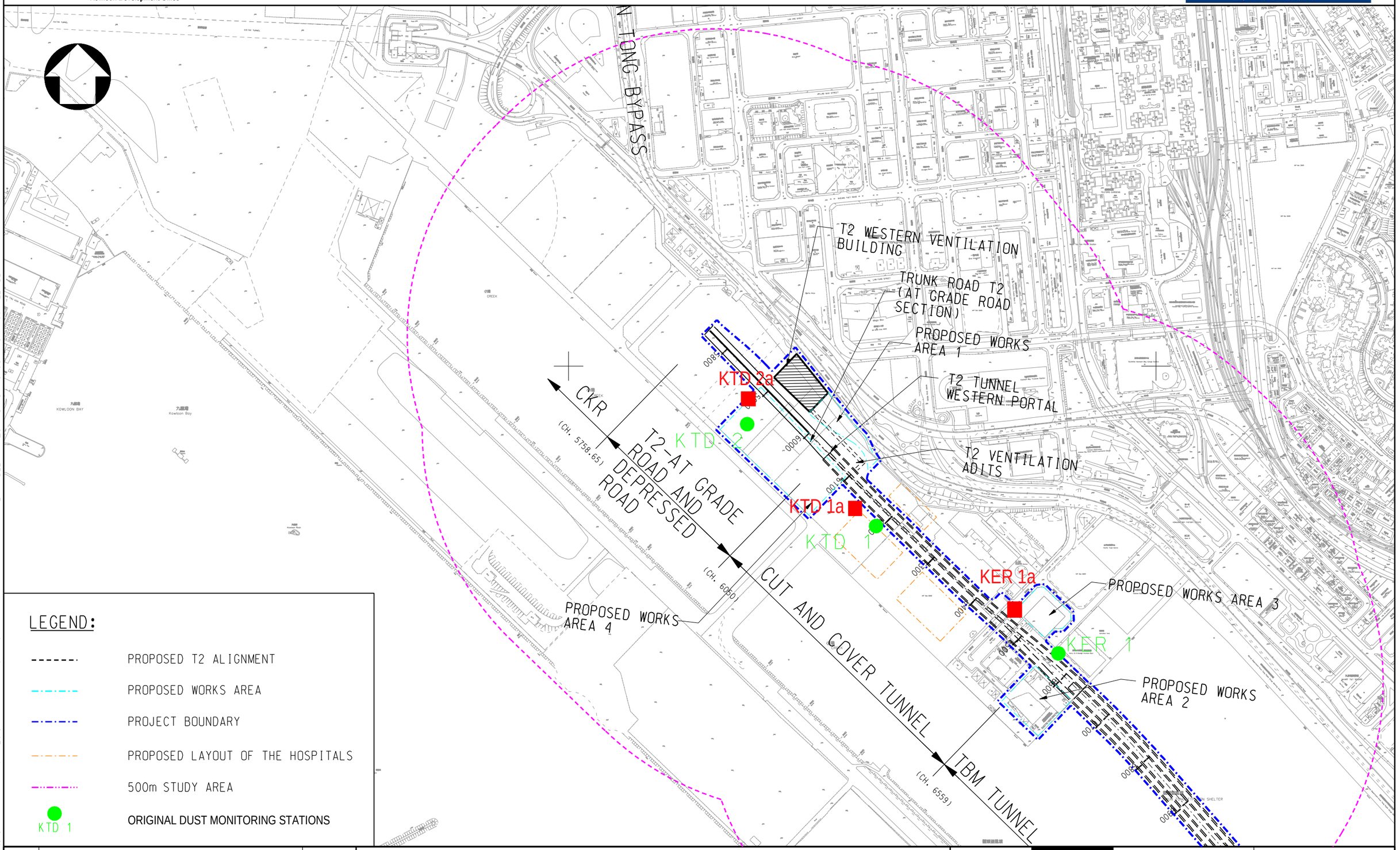
Figure 2

Baseline Monitoring Locations

土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
KAI TAK DEVELOPMENT - TRUNK ROAD T2 AND INFRASTRUCTURE AT SOUTH APRON - INVESTIGATION, DESIGN AND CONSTRUCTION

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PROPOSED LAYOUT OF THE HOSPITALS
- 500m STUDY AREA
- KTD 1 — ORIGINAL DUST MONITORING STATIONS
- KTD 1a — PROPOSED DUST MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

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File name:

Drawing No.: FIGURE 2.1a (revised)
Rev.: --

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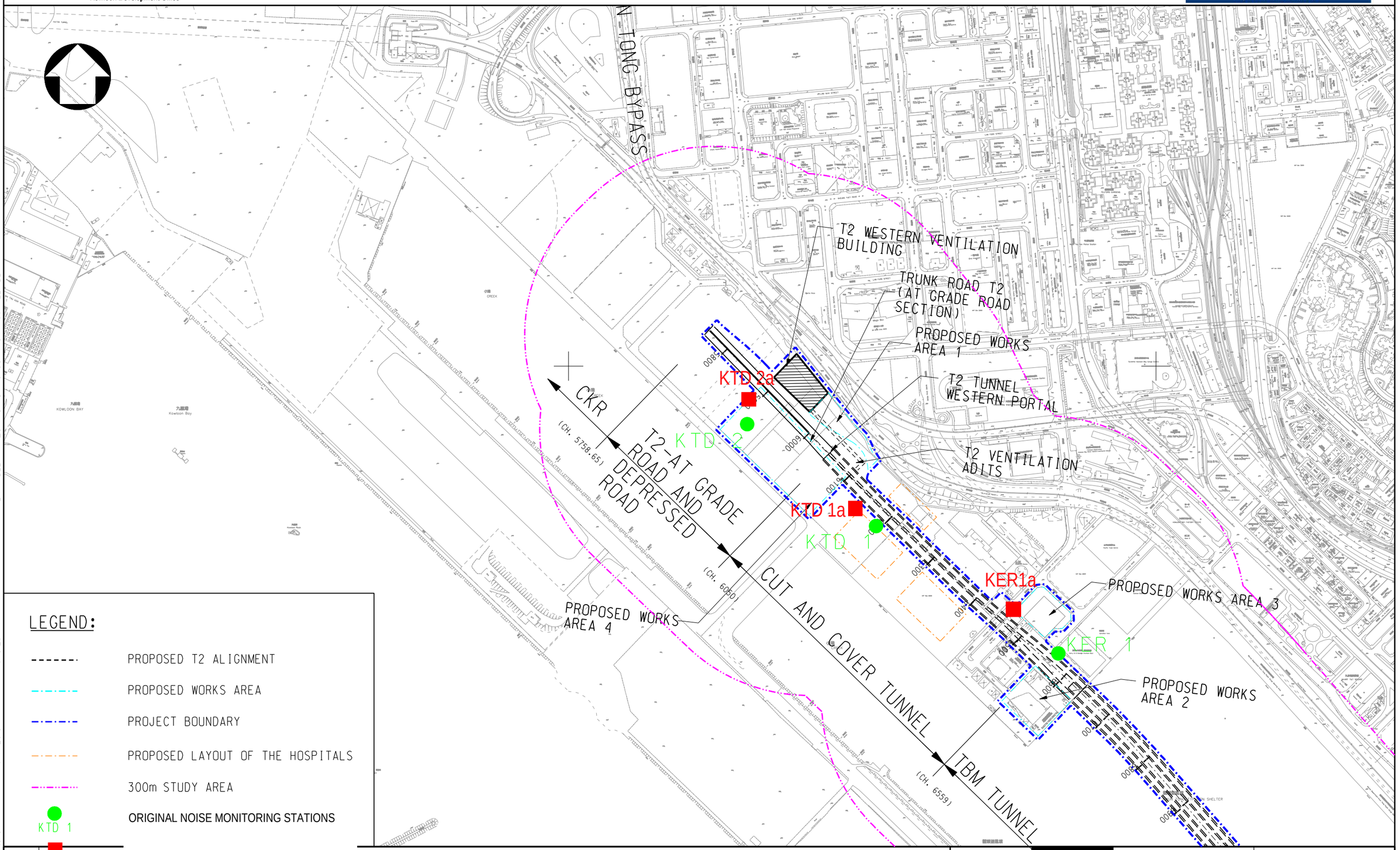
土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
KAI TAK DEVELOPMENT - TRUNK ROAD T2 AND INFRASTRUCTURE AT SOUTH APRON - INVESTIGATION, DESIGN AND CONSTRUCTION

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PROPOSED LAYOUT OF THE HOSPITALS
- 300m STUDY AREA
- KTD 1 — ORIGINAL NOISE MONITORING STATIONS
- KTD 1a — PROPOSED NOISE MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED NOISE MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size: A3 | Scale: 1 : 6000 | Date: 30/01/2012 | File name

Drawing No. FIGURE 3.1a (revised) | Rev. --

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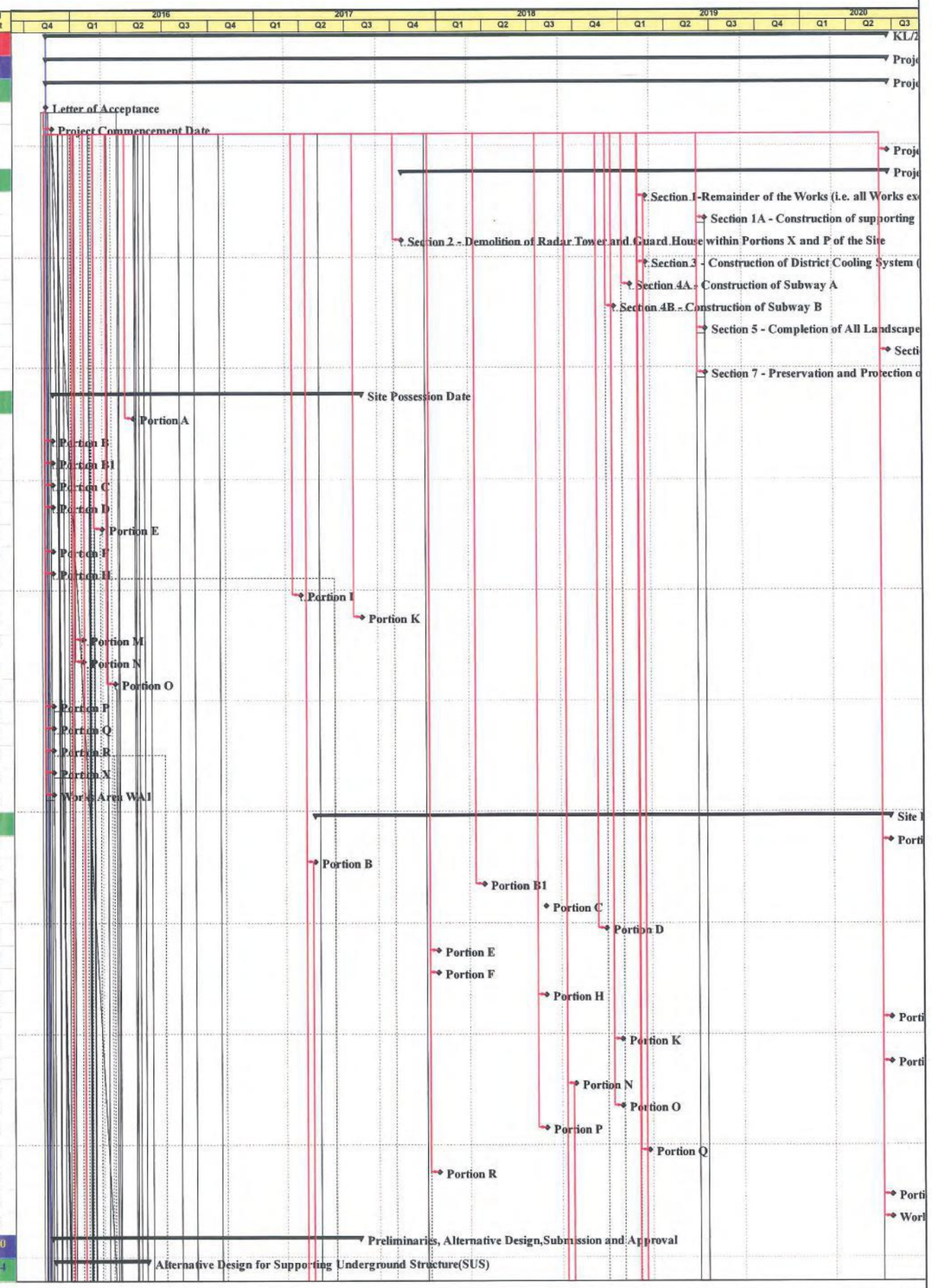
MateriaLab

Appendix A

Construction Programme

KL/2014/03 Kai Tak Development-Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
KL/2014/03-Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway		1684	12-Nov-15	21-Jun-20		0
Project Key Dates		1684	12-Nov-15	21-Jun-20		0
Project Commencement and Completion		1684	12-Nov-15	21-Jun-20		0
K-PK-PCC-000	Letter of Acceptance	0	12-Nov-15*			0
K-PK-PCC-100	Project Commencement Date	0	23-Nov-15*		K-PK-PCC-000	0
K-PK-PCC-110	Project Completion Date	0		21-Jun-20*	K-PA-GSP-790, I	0
Project Completion Date		974	21-Oct-17	21-Jun-20		0
K-PK-PCD-100	Section 1-Remainder of the Works (i.e. all Works except Works included in other Section of the Wor	0		21-Feb-19*	K-PK-SCC-190,	0
K-PK-PCD-110	Section 1A - Construction of supporting underground structure	0		20-Jun-19*	K-PK-SCC-200,	0
K-PK-PCD-120	Section 2 - Demolition of Radar Tower and Guard House within Portions X and P of the Site	0		21-Oct-17*	K-PK-SCC-204,	0
K-PK-PCD-130	Section 3 - Construction of District Cooling System (DCS)	0		21-Feb-19*	K-PK-PCC-100,	0
K-PK-PCD-140	Section 4A - Construction of Subway A	0		21-Jan-19*	K-PK-SCC-210,	0
K-PK-PCD-150	Section 4B - Construction of Subway B	0		20-Dec-18*	K-PK-PCC-100,	0
K-PK-PCD-160	Section 5 - Completion of All Landscape Softworks	0		20-Jun-19*	K-PK-PCC-100,	0
K-PK-PCD-170	Section 6 - Completion of all Establishment Works for all Landscape Softworks	0		21-Jun-20*	K-PK-PCC-100,	0
K-PK-PCD-180	Section 7 - Preservation and Protection of Existing Trees	0		20-Jun-19*	K-PK-PCC-100,	0
Site Possession Date		617	23-Nov-15	01-Aug-17		0
K-PK-SPD-100	Portion A	0	02-May-16*		K-PK-PCC-100	0
K-PK-SPD-110	Portion B	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-120	Portion B1	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-130	Portion C	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-140	Portion D	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-150	Portion E	0	01-Mar-16*		K-PK-PCC-100	0
K-PK-SPD-160	Portion F	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-170	Portion H	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-180	Portion I	0	01-Apr-17*		K-PK-PCC-100	0
K-PK-SPD-190	Portion K	0	01-Aug-17*		K-PK-PCC-100	0
K-PK-SPD-200	Portion M	0	23-Jan-16*		K-PK-PCC-100	0
K-PK-SPD-210	Portion N	0	23-Jan-16*		K-PK-PCC-100	0
K-PK-SPD-220	Portion O	0	25-Mar-16*		K-PK-PCC-100	0
K-PK-SPD-230	Portion P	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-240	Portion Q	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-250	Portion R	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-260	Portion X	0	23-Nov-15*		K-PK-PCC-100	0
K-PK-SPD-265	Works Area WA1	0	23-Nov-15*		K-PK-PCC-100	0
Site Handover Date		1150	28-Apr-17	21-Jun-20		0
K-PK-SHD-100	Portion A	0		21-Jun-20	K-PK-PCC-100	0
K-PK-SHD-110	Portion B	0		28-Apr-17*	K-PK-PCC-100,	0
K-PK-SHD-120	Portion B1	0		30-Mar-18*	K-PK-PCC-100	0
K-PK-SHD-130	Portion C	0		31-Jul-18*		0
K-PK-SHD-140	Portion D	0		30-Nov-18*	K-PK-PCC-100	0
K-PK-SHD-150	Portion E	0		29-Dec-17*	K-PK-PCC-100	0
K-PK-SHD-160	Portion F	0		29-Dec-17*	K-PK-PCC-100,	0
K-PK-SHD-170	Portion H	0		31-Jul-18*	K-PK-PCC-100	0
K-PK-SHD-180	Portion I	0		21-Jun-20	K-PK-PCC-100	0
K-PK-SHD-190	Portion K	0		31-Dec-18*	K-PK-PCC-100	0
K-PK-SHD-200	Portion M	0		21-Jun-20	K-PK-PCC-100	0
K-PK-SHD-210	Portion N	0		28-Sep-18*	K-PK-PCC-100,	0
K-PK-SHD-220	Portion O	0		31-Dec-18*	K-PK-PCC-100	0
K-PK-SHD-230	Portion P	0		31-Jul-18*	K-PK-PCC-100	0
K-PK-SHD-240	Portion Q	0		22-Feb-19*	K-PK-PCC-100,	0
K-PK-SHD-250	Portion R	0		29-Dec-17*	K-PK-PCC-100	0
K-PK-SHD-255	Portion X	0		21-Jun-20	K-PK-PCC-100	0
K-PK-SHD-260	Works Area WA1	0		21-Jun-20	K-PK-PCC-100	0
Preliminaries, Alternative Design,Submission and Approval		614	18-Nov-15	24-Jul-17		340
Alternative Design for Supporting Underground Structure(SUS)		185	23-Nov-15	25-May-16		114

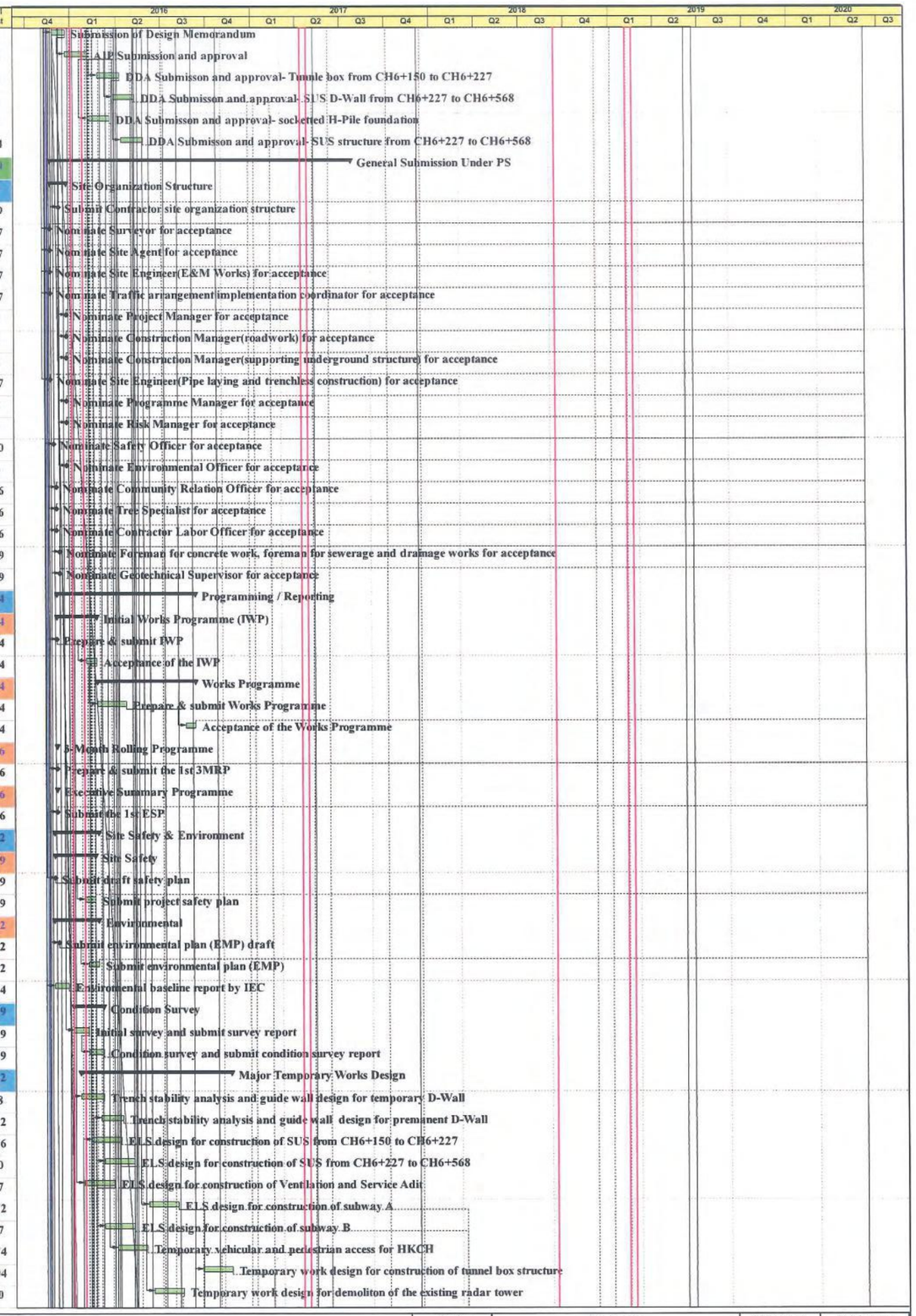


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work

Initial Works Programme Rev.1

Date	Revision	Checked	Approved
11-Jan-16	1		

Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
K-PA-ADS-090	Submission of Design Memorandum	28	23-Nov-15	20-Dec-15	K-PK-PCC-100	28
K-PA-ADS-100	AIP Submission and approval	45	21-Dec-15	03-Feb-16	K-PA-ADS-090	28
K-PA-ADS-110	DDA Submisson and approval- Tunnle box from CH6+150 to CH6+227	45	24-Feb-16	08-Apr-16	K-PA-ADS-100	28
K-PA-ADS-115	DDA Submisson and approval- SUS D-Wall from CH6+227 to CH6+568	45	25-Mar-16	08-May-16	K-PA-ADS-100	28
K-PA-ADS-125	DDA Submisson and approval- socketted H-Pile foundation	45	04-Feb-16	19-Mar-16	K-PA-ADS-100	48
K-PA-ADS-135	DDA Submisson and approval- SUS structure from CH6+227 to CH6+568	45	11-Apr-16	25-May-16	K-PA-ADS-100	114
General Submission Under PS		614	18-Nov-15	24-Jul-17		340
Site Organization Structure		34	18-Nov-15	22-Dec-15		93
K-PA-GSP-200	Submit Contractor site organization structure	0		06-Dec-15	K-PK-PCC-100	109
K-PA-GSP-210	Nominate Surveyor for acceptance	0		18-Nov-15	K-PK-PCC-000	127
K-PA-GSP-220	Nominate Site Agent for acceptance	0		18-Nov-15	K-PK-PCC-000	127
K-PA-GSP-230	Nominate Site Engineer(E&M Works) for acceptance	0		18-Nov-15	K-PK-PCC-000	127
K-PA-GSP-250	Nominate Traffic arrangement implementation coordinator for acceptance	0		18-Nov-15	K-PK-PCC-000	127
K-PA-GSP-260	Nominate Project Manager for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-270	Nominate Construction Manager(roadwork) for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-280	Nominate Construction Manager(supporting underground structure) for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-290	Nominate Site Engineer(Pipe laying and trenchless construction) for acceptance	0		18-Nov-15	K-PK-PCC-000	127
K-PA-GSP-300	Nominate Programme Manager for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-310	Nominate Risk Manager for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-320	Nominate Safety Officer for acceptance	0		25-Nov-15	K-PK-PCC-100	120
K-PA-GSP-330	Nominate Environmental Officer for acceptance	0		22-Dec-15	K-PK-PCC-100	93
K-PA-GSP-340	Nominate Community Relation Officer for acceptance	0		29-Nov-15	K-PK-PCC-100	116
K-PA-GSP-350	Nominate Tree Specialist for acceptance	0		29-Nov-15	K-PK-PCC-100	116
K-PA-GSP-360	Nominate Contractor Labor Officer for acceptance	0		29-Nov-15	K-PK-PCC-100	116
K-PA-GSP-820	Nominate Foreman for concrete work, foreman for sewerage and drainage works for acceptance	0		06-Dec-15	K-PK-PCC-100	109
K-PA-GSP-830	Nominate Geotechnical Supervisor for acceptance	0		06-Dec-15	K-PK-PCC-100	109
Programming / Reporting		282	29-Nov-15	06-Sep-16		184
Initial Works Programme (IWP)		81	29-Nov-15	18-Feb-16		184
K-PA-GSP-400	Prepare & submit IWP	0		29-Nov-15	K-PK-PCC-100	184
K-PA-GSP-410	Acceptance of the IWP	21	29-Jan-16	18-Feb-16	K-PA-GSP-400	184
Works Programme		201	19-Feb-16	06-Sep-16		184
K-PA-GSP-420	Prepare & submit Works Programme	60	19-Feb-16	18-Apr-16	K-PA-GSP-410	184
K-PA-GSP-430	Acceptance of the Works Programme	21	17-Aug-16	06-Sep-16	K-PA-GSP-420	184
3-Month Rolling Programme		0	29-Nov-15	29-Nov-15		166
K-PA-GSP-440	Prepare & submit the 1st 3MRP	0		29-Nov-15	K-PK-PCC-100	166
Executive Summary Programme		0	29-Nov-15	29-Nov-15		166
K-PA-GSP-450	Submit the 1st ESP	0		29-Nov-15	K-PK-PCC-100	166
Site Safety & Environment		91	23-Nov-15	21-Feb-16		182
Site Safety		81	25-Nov-15	14-Feb-16		189
K-PA-GSP-500	Submit draft safety plan	0		25-Nov-15	K-PK-PCC-000	189
K-PA-GSP-510	Submit project safety plan	21	25-Jan-16	14-Feb-16	K-PA-GSP-500	189
Environmental		91	23-Nov-15	21-Feb-16		182
K-PA-GSP-530	Submit environmental plan (EMP) draft	0		02-Dec-15	K-PK-PCC-000	182
K-PA-GSP-540	Submit environmental plan (EMP)	21	01-Feb-16	21-Feb-16	K-PA-GSP-530	182
K-PA-GSP-547	Enviromental baseline report by IEC	30	23-Nov-15	22-Dec-15	K-PK-PCC-100	104
Condition Survey		60	02-Jan-16	01-Mar-16		199
K-DR-PRE-100	Initial survey and submit survey report	30	02-Jan-16	31-Jan-16	K-PK-PCC-100	199
K-DR-PRE-110	Condition survey and submit condition survey report	30	01-Feb-16	01-Mar-16	K-DR-PRE-100	199
Major Temporary Works Design		306	16-Jan-16	16-Nov-16		462
K-PA-GSP-678	Trench stability analysis and guide wall design for temporary D-Wall	45	16-Jan-16	29-Feb-16	K-PA-GSP-665, I	18
K-PA-GSP-679	Trench stability analysis and guide wall design for premanent D-Wall	45	25-Feb-16	09-Apr-16	K-PA-GSP-665, I	102
K-PA-GSP-680	ELS design for construction of SUS from CH6+150 to CH6+227	60	05-Feb-16	04-Apr-16	K-PA-GSP-665, I	226
K-PA-GSP-682	ELS design for construction of SUS from CH6+227 to CH6+568	60	02-Mar-16	30-Apr-16	K-PA-GSP-665, I	20
K-PA-GSP-683	ELS design for construction of Ventilation and Service Adit	60	22-Jan-16	21-Mar-16	K-PK-SPD-260, I	57
K-PA-GSP-684	ELS design for construction of subway A	60	31-May-16	29-Jul-16	K-PK-PCC-100	572
K-PA-GSP-685	ELS design for construction of subway B	60	02-Mar-16	30-Apr-16	K-PA-GSP-683	57
K-PA-GSP-687	Temporary vehicular and pedestrian access for HKCH	60	28-Mar-16	26-May-16	K-PK-SPD-260, I	174
K-PA-GSP-688	Temporary work design for construction of tunnel box structure	60	18-Sep-16	16-Nov-16	K-PK-PCC-100	204
K-PA-GSP-694	Temporary work design for demoliton of the existing radar tower	60	10-Jun-16	08-Aug-16	K-PK-PCC-100	70



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Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
K-PA-GSP-700	ELS design for construction of DCS	60	19-Aug-16	17-Oct-16	K-PK-PCC-100	342
K-PA-GSP-835	Temporary work design for construction of subway structure	60	21-Apr-16	19-Jun-16	K-PK-PCC-100	7
Major Construction Works Method Statement		560	12-Jan-16	24-Jul-17		340
K-PA-GSP-710	Method statement for Construction of SUS	40	05-Apr-16	14-May-16	K-PA-GSP-665, I	51
K-PA-GSP-712	Method statement of D-Wall construction	30	12-Jan-16	10-Feb-16	K-PK-PCC-100	37
K-PA-GSP-713	Method statement of Socketted H-pile	30	21-Feb-16	21-Mar-16	K-PK-PCC-100	46
K-PA-GSP-714	Method statement of Excavation and ELS	60	21-May-16	19-Jul-16	K-PK-PCC-100	120
K-PA-GSP-730	Method statement for Construction of DCS	60	18-Sep-16	16-Nov-16	K-PK-PCC-100	312
K-PA-GSP-732	Method statement of Demolition works	60	02-Mar-16	30-Apr-16	K-PK-SPD-230	55
K-PA-GSP-740	Method statement of Construction of tunnel box structure	60	07-Nov-16	05-Jan-17	K-PK-PCC-100	154
K-PA-GSP-745	Method statement of Construction of top slab and base slab of SUS	60	26-May-17	24-Jul-17	K-PK-PCC-100	80
K-PA-GSP-746	Method statement for Construction of subway A	60	06-Oct-16	04-Dec-16	K-PA-GSP-684	572
K-PA-GSP-748	Method statement for Construction of subway B	60	21-Apr-16	19-Jun-16	K-PK-PCC-100	7
Insurance		60	23-Nov-15	21-Jan-16		83
K-PA-GSP-590	Submit Contractor PII policy	60	23-Nov-15	21-Jan-16	K-PK-PCC-100	83
K-PA-GSP-600	Submit ICE PII policy	60	23-Nov-15	21-Jan-16	K-PK-PCC-100	83
Subcontractor Management Plan (SMP)		15	18-Apr-16	02-May-16		11
K-PA-GSP-610	Submit Subcontractor Management Plan	15	18-Apr-16	02-May-16	K-PK-PCC-000	11
Project risk Management Plan		53	30-Nov-15	21-Jan-16		113
K-PA-GSP-620	Submit Project risk management plan	53	30-Nov-15	21-Jan-16	K-PK-PCC-100	113
Temp Drainage Management Plan (TDMP)		30	23-Dec-15	21-Jan-16		32
K-PA-GSP-670	Submission and approval of temporary drainage and sewerage diversion plan	30	23-Dec-15	21-Jan-16	K-PK-PCC-100	32
Site Security Plan		0	06-Dec-15	06-Dec-15		159
K-PA-GSP-630	Submit site security plan	0		06-Dec-15	K-PK-PCC-100	159
Temporary Utility Diversion/ Relocation		348	23-Nov-15	04-Nov-16		0
K-PA-GSP-660	Request information from utilities undertakers	7	23-Nov-15	29-Nov-15	K-PK-PCC-100	66
K-PA-GSP-661	Set up Utilities Liaison Group (ULG)	30	23-Nov-15	22-Dec-15	K-PK-PCC-100	143
K-PA-GSP-665	Utility detection	60	07-Dec-15	04-Feb-16	K-PK-PCC-100	5
K-PA-GSP-666	Submit Utility diversion scheme in Zone 1	30	18-Jan-16	16-Feb-16	K-PK-PCC-100	1
K-PA-GSP-667	Submit Utility diversion scheme in Zone 2,3&4	45	05-Feb-16	20-Mar-16	K-PA-GSP-665	74
K-PA-GSP-668	Utility coordination and liasion	90	11-Feb-16	10-May-16	K-PK-PCC-100,	0
K-PA-GSP-865	Temporary Utility diversion	110	20-Jun-16	07-Oct-16	K-PA-GSP-668	28
Utility Works by Others		348	23-Nov-15	04-Nov-16		0
K-1A-UDN-120	Diversion of existing 132kv CLP cable at Cheung Yip Street by others	223	23-Nov-15	02-Jul-16	K-PK-PCC-100	28
K-PA-GSP-845	Utility laying for HGC,HKBN,CT,PCCW,NWT,TGT,MP&LPB by others	155	03-Jun-16	04-Nov-16	K-PA-GSP-668, I	0
Temporary Traffic Management		270	23-Nov-15	18-Aug-16		138
Permitting (XP)		90	23-Nov-15	20-Feb-16		31
K-PA-GSP-770	XP plan registration	30	23-Nov-15	22-Dec-15	K-PK-PCC-100	31
K-PA-GSP-780	XP application	60	23-Dec-15	20-Feb-16	K-PA-GSP-770	31
Temp Traffic Arrangement		270	23-Nov-15	18-Aug-16		138
K-PA-GSP-790	Establish the TMLG	40	23-Nov-15	01-Jan-16	K-PK-PCC-100	233
K-PA-GSP-800	Submission and approval of TTA schemes-TTA stage 1	90	23-Nov-15	20-Feb-16	K-PK-PCC-100	31
K-PA-GSP-810	Submission and approval of TTA schemes-TTA other stages	180	21-Feb-16	18-Aug-16	K-PA-GSP-800	138
Prelimiaries		243	23-Nov-15	22-Jul-16		130
K-DR-PRE-145	Set up temporary barging point	100	14-Apr-16	22-Jul-16	K-PK-SPD-220	117
K-DR-PRE-150	Erection of Engineer's office	90	23-Nov-15	20-Feb-16	K-PK-SPD-265, I	268
K-DR-PRE-160	Erection of contractor's site office	75	23-Dec-15	06-Mar-16	K-DR-PRE-150	268
K-DR-PRE-170	Site clearance and erection of hoarding& fencing	70	03-Dec-15	10-Feb-16	K-PK-PCC-100	27
K-DR-PRE-173	Tree survey	45	07-Dec-15	20-Jan-16	K-PK-PCC-100	47
Section 1 of the Works-Remainder of the Works		294	04-May-18	21-Feb-19		0
Modification Works		49	04-May-18	03-Jul-18		145
K-01-MWS-100	Sewerage modification works	49	04-May-18	03-Jul-18	K-1A-SV2-780	145
K-01-MWS-110	Watermain modification works	35	21-May-18	03-Jul-18	K-01-MWS-100	145
Reinstatement Works on Existing Shing Cheong Road		101	17-Sep-18	18-Jan-19		10
K-01-RWE-120	Reinstatement of existing drainage,sewerage and watermain from CH6+467 to CH6+568	42	17-Sep-18	07-Nov-18	K-1A-SUS-760	39
K-01-RWE-130	Reinstatement of existing drainage,sewerage and watermain from CH6+227 to CH6+467	63	05-Oct-18	18-Dec-18	K-1A-SUS-870	4
K-01-RWE-140	Reinstatement of existing pavement	30	12-Dec-18	18-Jan-19	K-03-DCS-140, I	10
Roadworks		199	07-Aug-18	21-Feb-19		0

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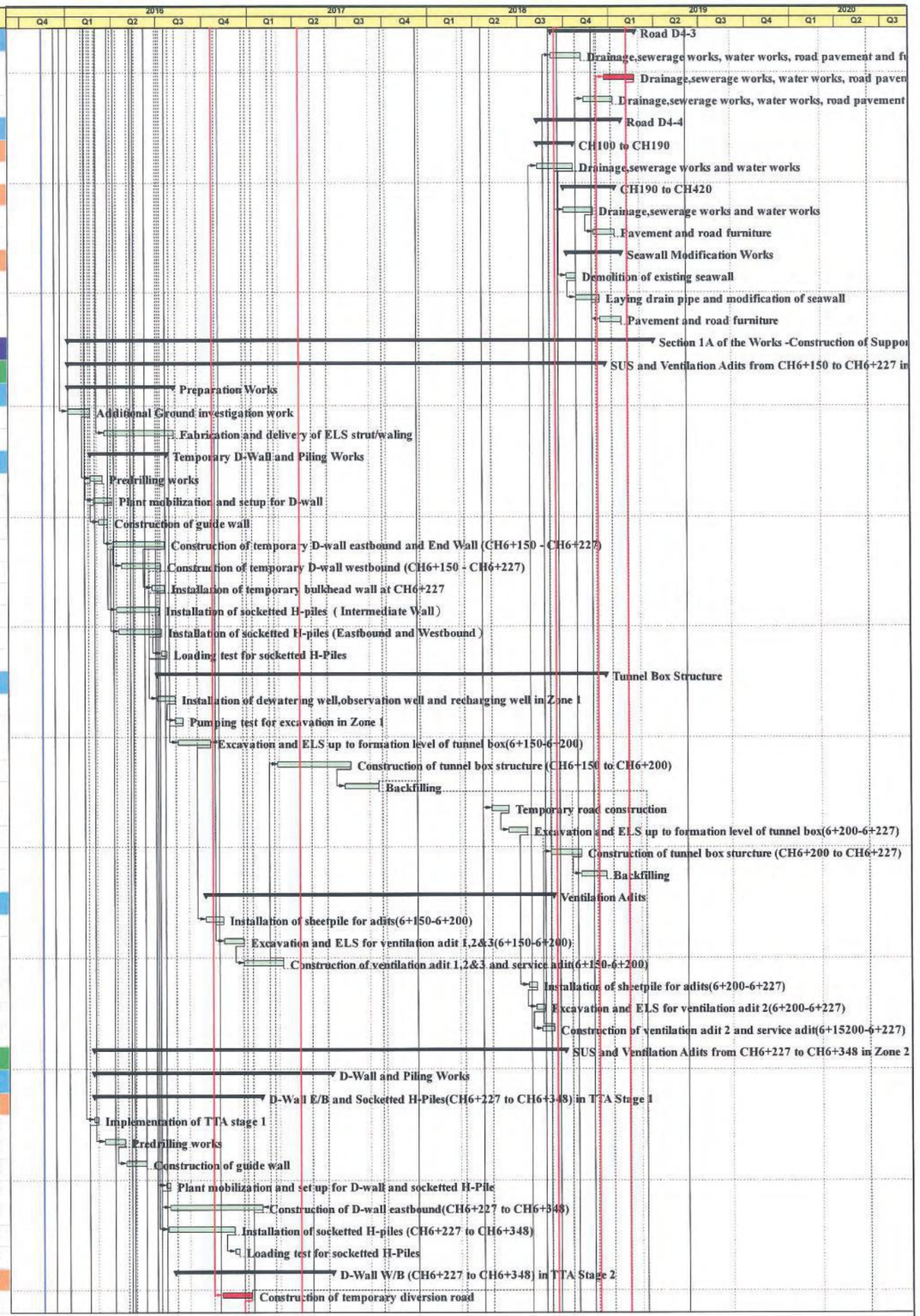
Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
Road D4-3		169	05-Sep-18	21-Feb-19		0
K-01-RWS-102	Drainage,sewerage works, water works, road pavement and furniture in Zone 2	60	05-Sep-18	04-Nov-18	K-1A-SV2-780, F	109
K-01-RWS-104	Drainage,sewerage works, water works, road pavement and furniture in Zone 3	61	22-Dec-18	21-Feb-19	K-1A-SUS-870, F	0
K-01-RWS-106	Drainage,sewerage works, water works, road pavement and furniture in Zone 4	60	09-Nov-18	08-Jan-19	K-03-DCS-160, F	44
Road D4-4		141	07-Aug-18	24-Jan-19		21
CH100 to CH190		60	07-Aug-18	18-Oct-18		21
K-01-RWS-270	Drainage,sewerage works and water works	60	07-Aug-18	18-Oct-18	K-1A-SV2-203, F	21
CH190 to CH420		85	29-Sep-18	11-Jan-19		32
K-01-RWS-200	Drainage,sewerage works and water works	50	29-Sep-18	28-Nov-18	K-03-DCS-185, F	32
K-01-RWS-240	Pavement and road furniture	35	29-Nov-18	11-Jan-19	K-01-RWS-200	32
Seawall Modification Works		91	06-Oct-18	24-Jan-19		21
K-01-RWS-350	Demolition of existing seawall	14	06-Oct-18	23-Oct-18	K-01-RWS-270	21
K-01-RWS-360	Laying drain pipe and modification of seawall	42	24-Oct-18	11-Dec-18	K-01-RWS-350	21
K-01-RWS-370	Pavement and road furniture	35	12-Dec-18	24-Jan-19	K-01-RWS-270, 1	21
Section 1A of the Works -Construction of Supporting Underground Structure(Alternative Design)		1180	04-Jan-16	28-Mar-19		84
SUS and Ventilation Adits from CH6+150 to CH6+227 in Zone 1		882	04-Jan-16	21-Dec-18		47
Preparation Works		170	04-Jan-16	01-Aug-16		89
K-1A-SV1-007	Additional Ground investigation work	35	04-Jan-16	16-Feb-16	K-PA-GSP-665	5
K-1A-SV1-008	Fabrication and delivery of ELS strut/waling	110	17-Mar-16	01-Aug-16	K-PA-ADS-100	89
Temporary D-Wall and Piling Works		123	17-Feb-16	18-Jul-16		44
K-1A-SV1-100	Predrilling works	22	17-Feb-16	12-Mar-16	K-1A-SV1-007, F	5
K-1A-SV1-110	Plant mobilization and setup for D-wall	30	23-Feb-16	31-Mar-16	K-PK-SPD-140, 1	5
K-1A-SV1-115	Construction of guide wall	15	05-Mar-16	22-Mar-16	K-1A-SV1-110, F	12
K-1A-SV1-120	Construction of temporary D-wall eastbound and End Wall (CH6+150 - CH6+227)	85	01-Apr-16	14-Jul-16	K-1A-SV1-100, F	5
K-1A-SV1-130	Construction of temporary D-wall westbound (CH6+150 - CH6+227)	65	19-Apr-16	07-Jul-16	K-1A-SV1-120	53
K-1A-SV1-135	Installation of temporary bulkhead wall at CH6+227	21	20-Jun-16	14-Jul-16	K-1A-SV1-120	47
K-1A-SV1-140	Installation of socketted H-piles (Intermediate Wall)	70	09-Apr-16	04-Jul-16	K-PA-ADS-110, 1	23
K-1A-SV1-340	Installation of socketted H-piles (Eastbound and Westbound)	70	14-Apr-16	08-Jul-16	K-PA-GSP-713, 1	19
K-1A-SV1-462	Loading test for socketted H-Piles	8	09-Jul-16	18-Jul-16	K-1A-SV1-340, F	19
Tunnel Box Structure		739	30-Jun-16	21-Dec-18		47
K-1A-SV1-200	Installation of dewatering well,observation well and recharging well in Zone 1	30	30-Jun-16	04-Aug-16	K-1A-SV1-140, F	82
K-1A-SV1-210	Pumping test for excavation in Zone 1	14	05-Aug-16	20-Aug-16	K-1A-SV1-200	82
K-1A-SV1-220	Excavation and ELS up to formation level of tunnel box(6+150-6+200)	55	10-Aug-16	15-Oct-16	K-PA-GSP-687, 1	82
K-1A-SV1-350	Construction of tunnel box structure (CH6+150 to CH6+200)	120	27-Feb-17	24-Jul-17	K-1A-SV1-330, F	82
K-1A-SV1-402	Backfilling	60	12-Jul-17	19-Sep-17	K-1A-SV1-350	82
K-1A-SV1-412	Temporary road construction	30	03-May-18	07-Jun-18	K-1A-SV2-780, F	47
K-1A-SV1-422	Excavation and ELS up to formation level of tunnel box(6+200-6+227)	30	08-Jun-18	14-Jul-18	K-1A-SV1-412	47
K-1A-SV1-432	Construction of tunnel box sturcture (CH6+200 to CH6+227)	50	30-Aug-18	30-Oct-18	K-1A-SV1-422, F	47
K-1A-SV1-452	Backfilling	45	31-Oct-18	21-Dec-18	K-1A-SV1-432	47
Ventilation Adits		570	04-Oct-16	04-Sep-18		47
K-1A-SV1-300	Installation of sheetpile for adits(6+150-6+200)	30	04-Oct-16	08-Nov-16	K-PA-GSP-683, 1	82
K-1A-SV1-310	Excavation and ELS for ventilation adit 1,2&3(6+150-6+200)	35	09-Nov-16	19-Dec-16	K-1A-SV1-300, F	82
K-1A-SV1-330	Construction of ventilation adit 1,2&3 and service adit(6+150-6+200)	63	20-Dec-16	09-Mar-17	K-1A-SV1-310	82
K-1A-SV1-472	Installation of sheetpile for adits(6+200-6+227)	15	16-Jul-18	01-Aug-18	K-1A-SV1-422	47
K-1A-SV1-482	Excavation and ELS for ventilation adit 2(6+200-6+227)	15	31-Jul-18	16-Aug-18	K-1A-SV1-472	47
K-1A-SV1-492	Construction of ventilation adit 2 and service adit(6+15200-6+227)	21	11-Aug-18	04-Sep-18	K-1A-SV1-482	47
SUS and Ventilation Adits from CH6+227 to CH6+348 in Zone 2		950	22-Feb-16	28-Sep-18		0
D-Wall and Piling Works		480	22-Feb-16	15-Jun-17		56
D-Wall E/B and Socketted H-Piles(CH6+227 to CH6+348) in TTA Stage 1		275	22-Feb-16	23-Jan-17		47
K-1A-SV2-100	Implementation of TTA stage 1	7	22-Feb-16	29-Feb-16	K-PK-SPD-130, 1	26
K-1A-SV2-110	Predrilling works	32	14-Mar-16	23-Apr-16	K-PK-SPD-150, 1	85
K-1A-SV2-125	Construction of guide wall	35	25-Apr-16	06-Jun-16	K-1A-SV2-110, F	85
K-1A-SV2-128	Plant mobilization and set up for D-wall and socketted H-Pile	7	15-Jul-16	22-Jul-16	K-1A-SV2-110, F	47
K-1A-SV2-130	Construction of D-wall eastbound(CH6+227 to CH6+348)	152	23-Jul-16	23-Jan-17	K-PA-ADS-115, 1	47
K-1A-SV2-140	Installation of socketted H-piles (CH6+227 to CH6+348)	112	19-Jul-16	29-Nov-16	K-PK-SPD-250, 1	19
K-1A-SV2-800	Loading test for socketted H-Piles	8	30-Nov-16	08-Dec-16	K-1A-SV2-140	19
D-Wall W/B (CH6+227 to CH6+348) in TTA Stage 2		318	02-Aug-16	15-Jun-17		56
K-1A-SV2-203	Construction of temporary diversion road	60	05-Nov-16	03-Jan-17	K-PA-GSP-845, 1	0



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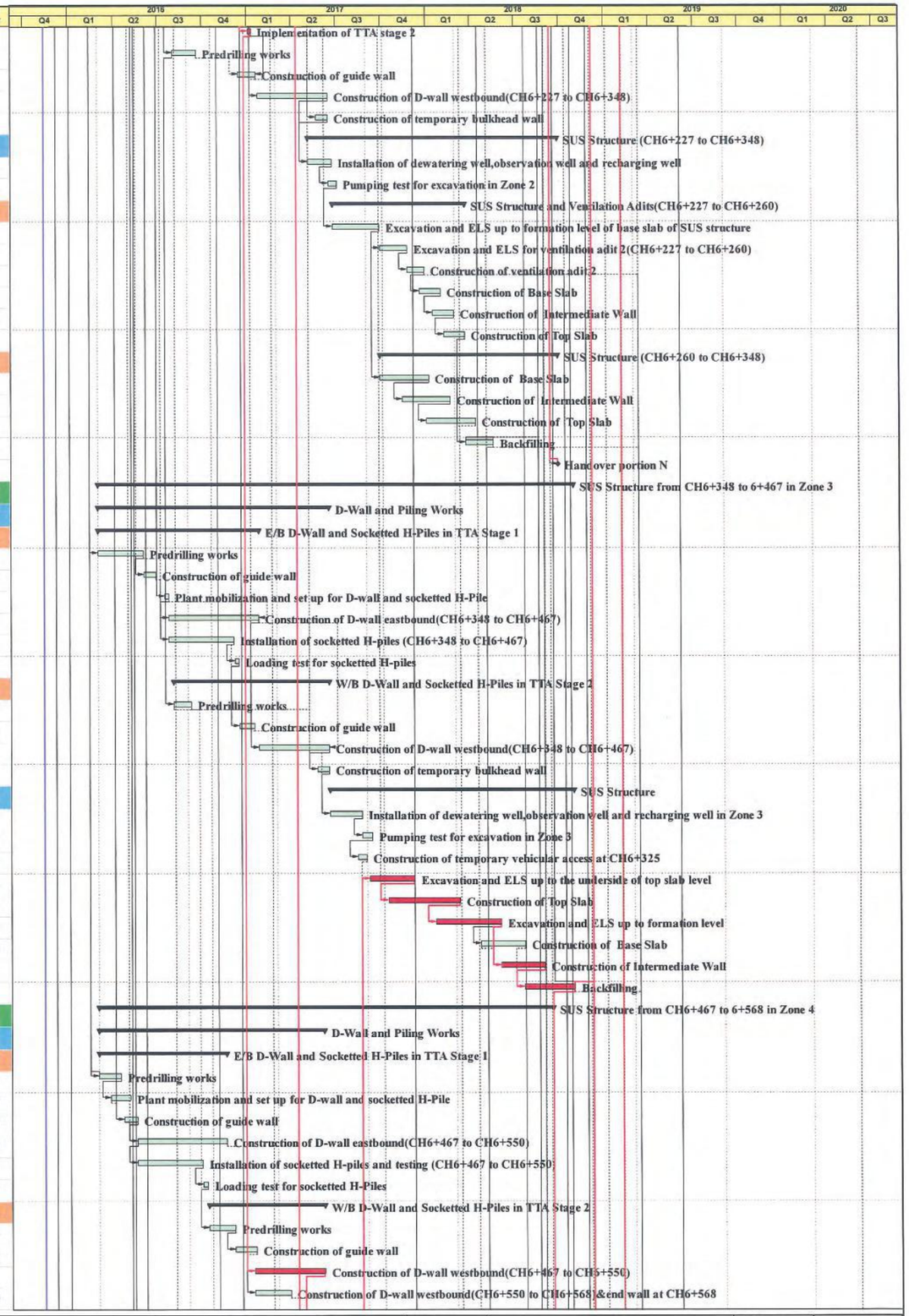
K-1A-SV2-205	Implementation of TTA stage 2	7	04-Jan-17	11-Jan-17	K-PA-GSP-810, I	0
K-1A-SV2-210	Predrilling works	42	02-Aug-16	20-Sep-16	K-1A-UDN-120	73
K-1A-SV2-215	Construction of guide wall	28	15-Dec-16	19-Jan-17	K-1A-SV2-210, I	50
K-1A-SV2-220	Construction of D-wall westbound(CH6+227 to CH6+348)	114	24-Jan-17	15-Jun-17	K-1A-SV2-215, I	47
K-1A-SV2-790	Construction of temporary bulkhead wall	21	23-May-17	15-Jun-17	K-1A-SV2-215, I	47
SUS Structure (CH6+227 to CH6+348)		419	06-May-17	28-Sep-18		0
K-1A-SV2-400	Installation of dewatering well,observation well and recharging well	42	06-May-17	23-Jun-17	K-1A-SV2-220, I	47
K-1A-SV2-410	Pumping test for excavation in Zone 2	14	16-Jun-17	03-Jul-17	K-1A-SV2-400	47
SUS Structure and Ventilation Adits(CH6+227 to CH6+260)		223	24-Jun-17	22-Mar-18		47
K-1A-SV2-420	Excavation and ELS up to formation level of base slab of SUS structure	82	24-Jun-17	28-Sep-17	K-PA-GSP-714, I	47
K-1A-SV2-500	Excavation and ELS for ventilation adit 2(CH6+227 to CH6+260)	45	29-Sep-17	23-Nov-17	K-1A-SV2-420	47
K-1A-SV2-520	Construction of ventilation adit 2	28	24-Nov-17	28-Dec-17	K-1A-SV2-500	47
K-1A-SV2-650	Construction of Base Slab	35	19-Dec-17	31-Jan-18	K-1A-SV2-520	47
K-1A-SV2-670	Construction of Intermediate Wall	35	15-Jan-18	27-Feb-18	K-1A-SV2-650	47
K-1A-SV2-680	Construction of Top Slab	35	07-Feb-18	22-Mar-18	K-1A-SV2-670	47
SUS Structure (CH6+260 to CH6+348)		295	29-Sep-17	28-Sep-18		0
K-1A-SV2-700	Construction of Base Slab	80	29-Sep-17	06-Jan-18	K-1A-SV2-420	51
K-1A-SV2-760	Construction of Intermediate Wall	80	13-Nov-17	20-Feb-18	K-1A-SV2-700	51
K-1A-SV2-770	Construction of Top Slab	80	02-Jan-18	12-Apr-18	K-1A-SV2-760	51
K-1A-SV2-780	Backfilling	45	23-Mar-18	19-May-18	K-1A-SV2-680, I	47
K-1A-SV2-810	Handover portion N	0		28-Sep-18*	K-1A-SV2-780	0
SUS Structure from CH6+348 to 6+467 in Zone 3		790	01-Mar-16	29-Oct-18		0
D-Wall and Piling Works		382	01-Mar-16	15-Jun-17		5
E/B D-Wall and Socketted H-Piles in TTA Stage 1		268	01-Mar-16	23-Jan-17		5
K-1A-SV3-130	Predrilling works	74	01-Mar-16	01-Jun-16	K-PA-GSP-547, I	26
K-1A-SV3-132	Construction of guide wall	21	02-Jun-16	27-Jun-16	K-1A-SV3-130, I	26
K-1A-SV3-133	Plant mobilization and set up for D-wall and socketted H-Pile	7	15-Jul-16	22-Jul-16	K-1A-SV3-130, I	5
K-1A-SV3-136	Construction of D-wall eastbound(CH6+348 to CH6+467)	152	23-Jul-16	23-Jan-17	K-PA-ADS-100, I	5
K-1A-SV3-150	Installation of socketted H-piles (CH6+348 to CH6+467)	112	23-Jul-16	03-Dec-16	K-1A-SV1-140, I	22
K-1A-SV3-276	Loading test for socketted H-piles	8	05-Dec-16	13-Dec-16	K-1A-SV3-150	22
W/B D-Wall and Socketted H-Piles in TTA Stage 2		258	02-Aug-16	15-Jun-17		5
K-1A-SV3-252	Predrilling works	32	02-Aug-16	07-Sep-16	K-1A-SV2-210	73
K-1A-SV3-254	Construction of guide wall	25	14-Dec-16	14-Jan-17	K-1A-SV3-252, I	22
K-1A-SV3-256	Construction of D-wall westbound(CH6+348 to CH6+467)	114	24-Jan-17	15-Jun-17	K-1A-SV3-136, I	5
K-1A-SV3-266	Construction of temporary bulkhead wall	21	23-May-17	15-Jun-17	K-1A-SV2-205, I	5
SUS Structure		408	16-Jun-17	29-Oct-18		0
K-1A-SUS-770	Installation of dewatering well,observation well and recharging well in Zone 3	56	16-Jun-17	21-Aug-17	K-1A-SV3-256, I	5
K-1A-SUS-780	Pumping test for excavation in Zone 3	18	22-Aug-17	11-Sep-17	K-1A-SUS-770	5
K-1A-SUS-790	Construction of temporary vehicular access at CH6+325	16	12-Aug-17	30-Aug-17	K-1A-SUS-780	5
K-1A-SUS-800	Excavation and ELS up to the underside of top slab level	75	06-Sep-17	05-Dec-17	K-1A-SUS-790, I	0
K-1A-SUS-850	Construction of Top Slab	120	13-Oct-17	09-Mar-18	K-1A-SUS-800, I	0
K-1A-SUS-852	Excavation and ELS up to formation level	105	19-Jan-18	31-May-18	K-1A-SUS-850	0
K-1A-SUS-853	Construction of Base Slab	75	20-Apr-18	20-Jul-18	K-1A-SUS-852	10
K-1A-SUS-854	Construction of Intermediate Wall	75	01-Jun-18	29-Aug-18	K-1A-SUS-852, I	0
K-1A-SUS-870	Backfilling	85	19-Jul-18	29-Oct-18	K-1A-SUS-854, I	0
SUS Structure from CH6+467 to 6+568 in Zone 4		756	01-Mar-16	15-Sep-18		21
D-Wall and Piling Works		372	01-Mar-16	03-Jun-17		0
E/B D-Wall and Socketted H-Piles in TTA Stage 1		213	01-Mar-16	16-Nov-16		16
K-1A-SV3-100	Predrilling works	35	01-Mar-16	14-Apr-16	K-PA-GSP-547, I	26
K-1A-SV3-110	Plant mobilization and set up for D-wall and socketted H-Pile	30	24-Mar-16	03-May-16	K-1A-SV3-100	36
K-1A-SV3-120	Construction of guide wall	21	21-Apr-16	17-May-16	K-PA-GSP-712, I	16
K-1A-SV3-135	Construction of D-wall eastbound(CH6+467 to CH6+550)	152	18-May-16	16-Nov-16	K-PA-ADS-115, I	16
K-1A-SV3-152	Installation of socketted H-piles and testing (CH6+467 to CH6+550)	112	18-May-16	28-Sep-16	K-1A-SV3-135	16
K-1A-SV3-286	Loading test for socketted H-Piles	8	29-Sep-16	08-Oct-16	K-1A-SV3-152	16
W/B D-Wall and Socketted H-Piles in TTA Stage 2		191	11-Oct-16	03-Jun-17		0
K-1A-SV3-210	Predrilling works	46	11-Oct-16	02-Dec-16	K-1A-SV3-252, I	16
K-1A-SV3-220	Construction of guide wall	35	03-Dec-16	16-Jan-17	K-1A-SV3-210	16
K-1A-SV3-232	Construction of D-wall westbound(CH6+467 to CH6+550)	114	12-Jan-17	03-Jun-17	K-1A-SV3-220, I	0
K-1A-SV3-296	Construction of D-wall westbound(CH6+550 to CH6+568)&end wall at CH6+568	60	12-Jan-17	25-Mar-17	K-1A-SV3-220, I	54

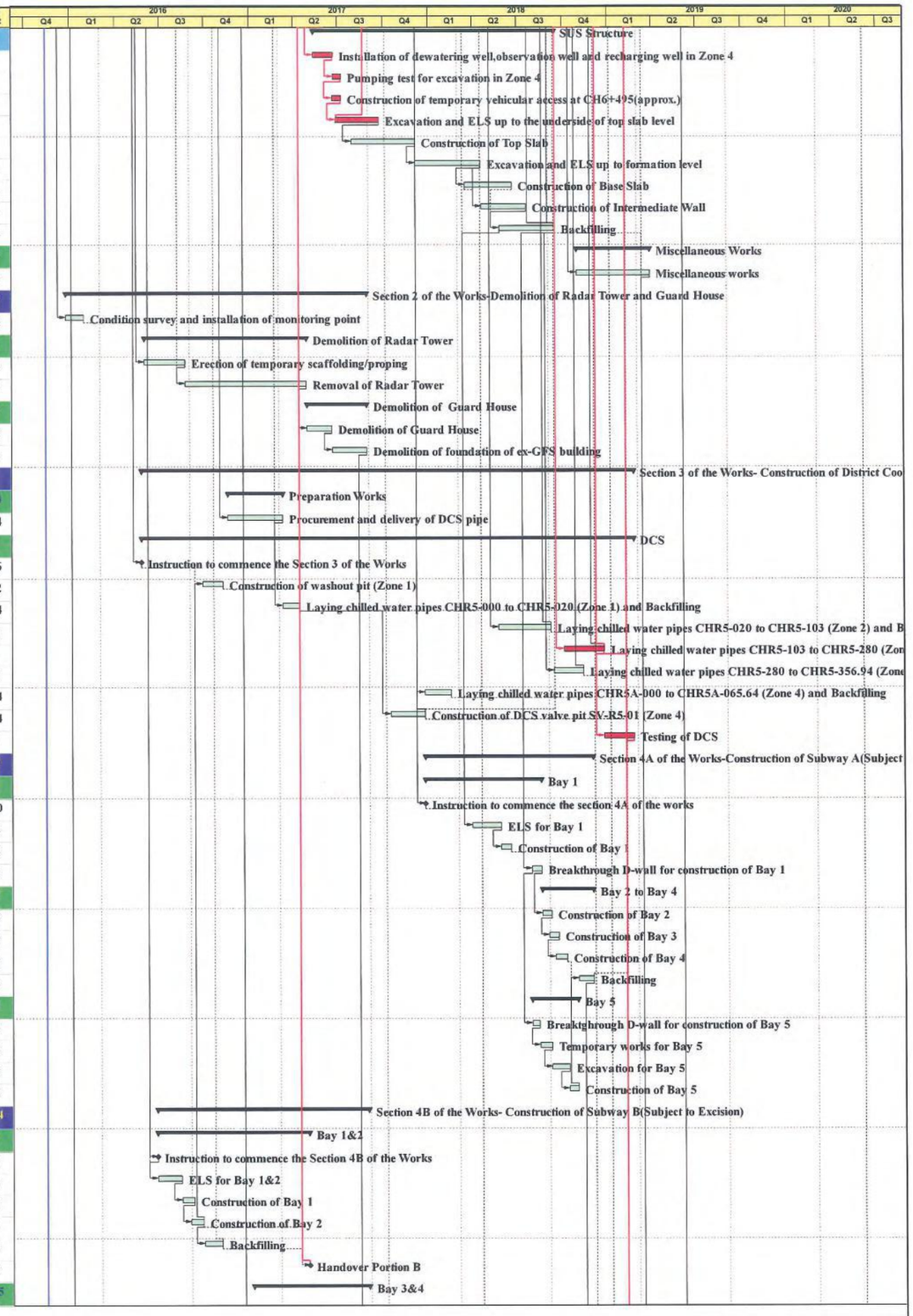


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work

Initial Works Programme Rev.1

Date	Revision	Checked	Approved
11-Jan-16	1		

Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
SUS Structure		404	12-May-17	15-Sep-18		21
K-1A-SUS-700	Installation of dewatering well,observation well and recharging well in Zone 4	35	12-May-17	21-Jun-17	K-1A-SV3-232, F	0
K-1A-SUS-710	Pumping test for excavation in Zone 4	14	22-Jun-17	08-Jul-17	K-1A-SUS-700	0
K-1A-SUS-715	Construction of temporary vehicular access at CH6+495(approx.)	16	20-Jun-17	08-Jul-17	K-1A-SUS-710	0
K-1A-SUS-720	Excavation and ELS up to the underside of top slab level	75	27-Jun-17	22-Sep-17	K-1A-SUS-715	0
K-1A-SUS-730	Construction of Top Slab	108	29-Jul-17	05-Dec-17	K-1A-SUS-720	21
K-1A-SUS-740	Excavation and ELS up to formation level	105	06-Dec-17	18-Apr-18	K-1A-SUS-730	21
K-1A-SUS-745	Construction of Base Slab	75	17-Mar-18	20-Jun-18	K-1A-SUS-740	31
K-1A-SUS-750	Construction of Intermediate Wall	75	19-Apr-18	19-Jul-18	K-1A-SUS-740, F	21
K-1A-SUS-760	Backfilling	95	26-May-18	15-Sep-18	K-1A-SUS-750, F	21
Miscellaneous Works		150	29-Oct-18	28-Mar-19		84
K-1A-MWS-100	Miscellaneous works	150	29-Oct-18	28-Mar-19	K-1A-SV2-520, F	84
Section 2 of the Works-Demolition of Radar Tower and Guard House		498	23-Dec-15	28-Aug-17		45
K-02-DRG-110	Condition survey and installation of monitoring point	30	23-Dec-15	28-Jan-16	K-PK-SPD-230	141
Demolition of Radar Tower		270	31-May-16	27-Apr-17		45
K-02-DRT-100	Erection of temporary scaffolding/proping	70	31-May-16	22-Aug-16	K-PA-GSP-732, 1	45
K-02-DRT-130	Removal of Radar Tower	200	23-Aug-16	27-Apr-17	K-PA-GSP-694, 1	45
Demolition of Guard House		102	28-Apr-17	28-Aug-17		45
K-02-DGH-140	Demolition of Guard House	42	28-Apr-17	17-Jun-17	K-02-DRT-130	45
K-02-DGH-150	Demolition of foundation of ex-GFS building	60	19-Jun-17	28-Aug-17	K-02-DGH-140	45
Section 3 of the Works- Construction of District Cooling System (Subject to Excision)		1004	24-May-16	21-Feb-19		0
Preparation Works		90	17-Nov-16	08-Mar-17		254
K-03-DCS-095	Procurement and delivery of DCS pipe	90	17-Nov-16	08-Mar-17	K-PK-PCC-100,	254
DCS		1004	24-May-16	21-Feb-19		0
K-03-DCS-100	Instruction to commence the Section 3 of the Works	0	24-May-16*		K-PK-PCC-100	456
K-03-DCS-105	Construction of washout pit (Zone 1)	35	26-Sep-16	07-Nov-16	K-4B-BAY-230, I	352
K-03-DCS-110	Laying chilled water pipes CHR5-000 to CHR5-020 (Zone 1) and Backfilling	28	09-Mar-17	11-Apr-17	K-PA-GSP-700, 1	254
K-03-DCS-130	Laying chilled water pipes CHR5-020 to CHR5-103 (Zone 2) and Backfilling	90	21-May-18	05-Sep-18	K-1A-SV2-780, F	90
K-03-DCS-140	Laying chilled water pipes CHR5-103 to CHR5-280 (Zone 3) and Backfilling	70	02-Oct-18	22-Dec-18	K-1A-SUS-870	0
K-03-DCS-160	Laying chilled water pipes CHR5-280 to CHR5-356.94 (Zone 4) and Backfilling	49	11-Sep-18	09-Nov-18	K-1A-SUS-760	37
K-03-DCS-180	Laying chilled water pipes CHR5A-000 to CHR5A-065.64 (Zone 4) and Backfilling	42	23-Dec-17	13-Feb-18	K-03-DCS-185	254
K-03-DCS-185	Construction of DCS valve pit SV-R5-01 (Zone 4)	60	13-Oct-17	22-Dec-17	K-03-DCS-110	254
K-03-DCS-195	Testing of DCS	61	22-Dec-18	21-Feb-19	K-03-DCS-140, F	0
Section 4A of the Works-Construction of Subway A(Subject to Excision)		343	22-Dec-17	29-Nov-18		53
Bay 1		237	22-Dec-17	15-Aug-18		51
K-4A-BAY-140	Instruction to commence the section 4A of the works	0	22-Dec-17*		K-PK-PCC-100	190
K-4A-BAY-150	ELS for Bay 1	45	28-Mar-18	25-May-18	K-4A-BAY-140, I	74
K-4A-BAY-180	Construction of Bay 1	18	26-May-18	15-Jun-18	K-4A-BAY-150	74
K-4A-BAY-185	Breakthrough D-wall for construction of Bay 1	18	26-Jul-18	15-Aug-18	K-1A-SUS-760, F	42
Bay 2 to Bay 4		88	16-Aug-18	29-Nov-18		42
K-4A-BAY-190	Construction of Bay 2	18	16-Aug-18	05-Sep-18	K-4A-BAY-185	60
K-4A-BAY-200	Construction of Bay 3	18	30-Aug-18	19-Sep-18	K-4A-BAY-190	60
K-4A-BAY-210	Construction of Bay 4	18	13-Sep-18	05-Oct-18	K-4A-BAY-200	60
K-4A-BAY-220	Backfilling	28	29-Oct-18	29-Nov-18	K-4A-BAY-210, I	42
Bay 5		78	26-Jul-18	27-Oct-18		42
K-4A-BAY-100	Breaktghrough D-wall for construction of Bay 5	14	26-Jul-18	10-Aug-18	K-4A-BAY-185	42
K-4A-BAY-110	Temporary works for Bay 5	21	11-Aug-18	04-Sep-18	K-4A-BAY-100	42
K-4A-BAY-120	Excavation for Bay 5	28	05-Sep-18	09-Oct-18	K-4A-BAY-110	42
K-4A-BAY-130	Construction of Bay 5	15	10-Oct-18	27-Oct-18	K-4A-BAY-120	42
Section 4B of the Works- Construction of Subway B(Subject to Excision)		432	23-Jun-16	28-Aug-17		304
Bay 1&2		310	23-Jun-16	28-Apr-17		0
K-4B-BAY-100	Instruction to commence the Section 4B of the Works	0	23-Jun-16*		K-PK-PCC-100	4
K-4B-BAY-200	ELS for Bay 1&2	42	23-Jun-16	11-Aug-16	K-PA-GSP-685, 1	3
K-4B-BAY-220	Construction of Bay 1	21	12-Aug-16	05-Sep-16	K-4B-BAY-200	3
K-4B-BAY-230	Construction of Bay 2	21	31-Aug-16	24-Sep-16	K-4B-BAY-220	3
K-4B-BAY-235	Backfilling	30	26-Sep-16	01-Nov-16	K-4B-BAY-230	3
K-4B-BAY-310	Handover Portion B	0		28-Apr-17*	K-4B-BAY-230, I	0
Bay 3&4		193	04-Jan-17	28-Aug-17		245

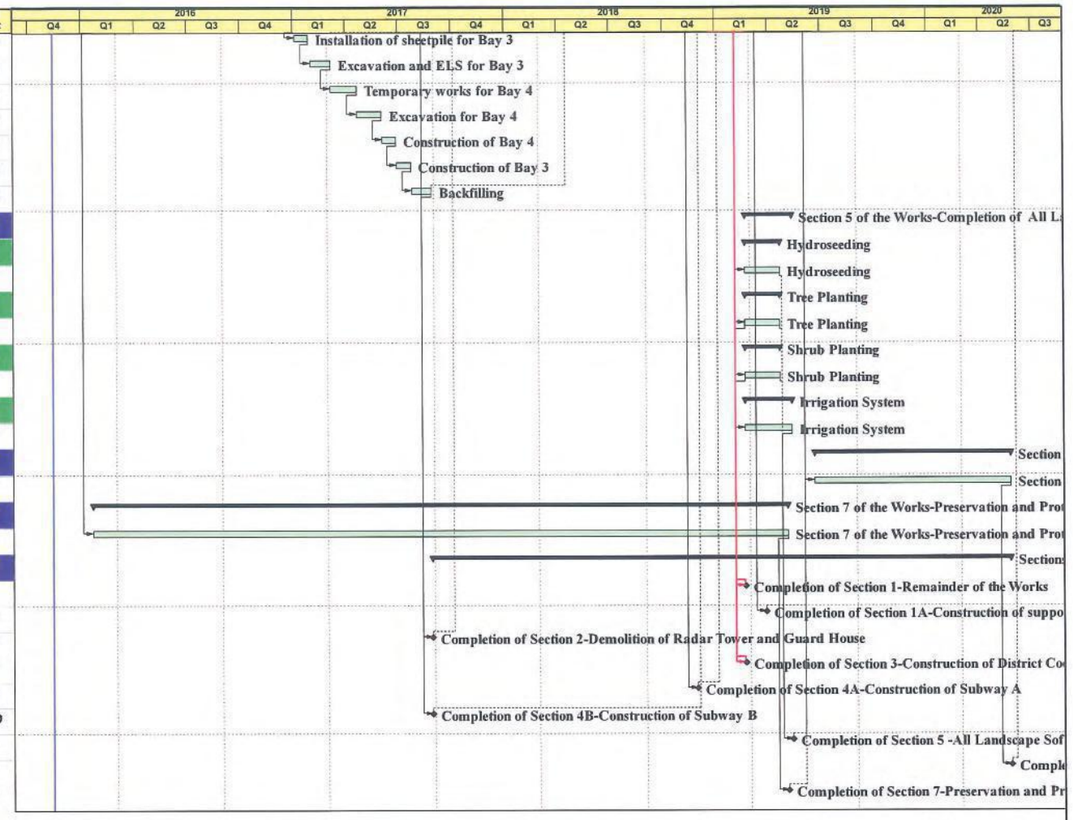


Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work

Initial Works Programme Rev.1

Date	Revision	Checked	Approved
11-Jan-16	1		

Activity ID	Activity Name	Original Duration	Start	Finish	Predecessors	Total Float
K-4B-BAY-250	Installation of sheetpile for Bay 3	21	04-Jan-17	27-Jan-17	K-1A-SV2-203	245
K-4B-BAY-260	Excavation and ELS for Bay 3	30	01-Feb-17	07-Mar-17	K-4B-BAY-250	245
K-4B-BAY-265	Temporary works for Bay 4	35	08-Mar-17	21-Apr-17	K-4B-BAY-260	245
K-4B-BAY-270	Excavation for Bay 4	35	22-Apr-17	03-Jun-17	K-4B-BAY-265	245
K-4B-BAY-280	Construction of Bay 4	21	05-Jun-17	28-Jun-17	K-4B-BAY-270	245
K-4B-BAY-290	Construction of Bay 3	21	29-Jun-17	24-Jul-17	K-4B-BAY-280	245
K-4B-BAY-300	Backfilling	30	25-Jul-17	28-Aug-17	K-4B-BAY-290	245
Section 5 of the Works-Completion of All Landscape Softworks		80	21-Feb-19	12-May-19		39
Hydroseeding		60	21-Feb-19	22-Apr-19		59
K-05-HYD-001	Hydroseeding	60	21-Feb-19	22-Apr-19	K-01-RWS-104, 1	59
Tree Planting		60	21-Feb-19	22-Apr-19		39
K-05-TPG-001	Tree Planting	60	21-Feb-19	22-Apr-19	K-01-RWS-104, 1	39
Shrub Planting		60	21-Feb-19	22-Apr-19		39
K-05-SPG-001	Shrub Planting	60	21-Feb-19	22-Apr-19	K-05-TPG-001	39
Irrigation System		80	21-Feb-19	12-May-19		39
K-05-ISM-001	Irrigation System	80	21-Feb-19	12-May-19	K-05-SPG-001	39
Section 6 of the Works-Completion of all Establishment Works for all Landscape Softworks		340	21-Jun-19	25-May-20		27
K-06-001-001	Section 6 of the Works-Completion of all Establishment Works for all Landscape Softworks	340	21-Jun-19	25-May-20	K-PK-PCD-100,	27
Section 7 of the Works-Preservation and Protection of Existing Trees		1200	21-Jan-16	04-May-19		47
K-07-001-001	Section 7 of the Works-Preservation and Protection of Existing Trees	1200	21-Jan-16	04-May-19	K-DR-PRE-173	47
Sections Completion		1001	28-Aug-17	25-May-20		27
K-PK-SCC-190	Completion of Section 1-Remainder of the Works	0		21-Feb-19	K-01-RWS-102, 1	0
K-PK-SCC-200	Completion of Section 1A-Construction of supporting underground structure	0		28-Mar-19	K-1A-MWS-100,	84
K-PK-SCC-204	Completion of Section 2-Demolition of Radar Tower and Guard House	0		28-Aug-17	K-02-DGH-150	54
K-PK-SCC-208	Completion of Section 3-Construction of District Cooling System (DCS)	0		21-Feb-19	K-03-DCS-185, F	0
K-PK-SCC-210	Completion of Section 4A-Construction of Subway A	0		29-Nov-18	K-4A-BAY-220	53
K-PK-SCC-220	Completion of Section 4B-Construction of Subway B	0		28-Aug-17	K-4B-BAY-300	479
K-PK-SCC-230	Completion of Section 5 -All Landscape Softworks	0		12-May-19	K-05-TPG-001, F	39
K-PK-SCC-240	Completion of Section 6-All Establishment Works for all Landscape Softworks	0		25-May-20	K-06-001-001	27
K-PK-SCC-250	Completion of Section 7-Preservation and Protection of Existing Trees	0		04-May-19	K-07-001-001	47



Remaining Level of Effort
Actual Work
Remaining Work
Critical Remaining Work

Date	Revision	Checked	Approved
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Appendix B

Alternative Monitoring Location Proposal

Alternative Monitoring Locations Proposal

B.1 Original Noise and TSP Monitoring Locations covered under this Contract

Noise and TSP monitoring should be conducted at the designated monitoring stations during the construction of Works Contract KL/2014/03. **Table B.1** shows the designated air quality and noise monitoring locations identified in the T2 EM&A Manual (AEIAR-174/2013).

Table B.1 Original Air Quality and Noise Monitoring Stations

SR and NSR ID	Location
KTD 1	Centre of Excellence in Paediatrics
KTD 2	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER 1	Future Residential Development at Kerry Godown

Site visit was conducted at the designated monitoring location KTD 1, KTD 2 and KER 1 in November 2015. Site conditions was evaluated and it was found that all of them are future sensitive receivers, their current conditions are summarized in **Table B.2**.

Table B.2 Current Conditions of Original Monitoring Locations

ASR and NSR ID	Location	Current Conditions
KTD 1	Centre of Excellence in Paediatrics	Renamed as Children's Hospital, currently under construction
KTD 2	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)	Currently no work in progress
KER 1	Future Residential Development at Kerry Godown	Operates as a warehouse for dangerous goods.

B.2 Alternative Monitoring Locations

When alternative air quality monitoring locations are proposed, the following criteria, as far as practicable, shall be followed:

(i) At the site boundary or such locations close to the major dust emission source;
(ii) Close to the ASRs;
(iii) Proper position/sitting and orientation of the monitoring equipment; and
(iv) Take into account the prevailing meteorological conditions.

In addition, with reference to T2 EM&A Manual (AEIAR-174/2013) Section 3.3.1.2, when alternative noise monitoring locations are proposed, they should be chosen based on the following criteria:

(i) The monitoring locations close to the major construction works activities that are likely to have noise impacts;
(ii) The monitoring close to the NSRs as defined in the EIAO-TM; and
(iii) The assurance of the minimal disturbance and working under a safe condition to the occupants during the monitoring in the vicinity of the NSRs.

In view of the above selection criteria, the proposed alternative monitoring location and reason of selection are listed in **Table B.3**.

Table B.3 Alternative Air Quality and Noise Monitoring Locations

Original Monitoring Station ID	Original Monitoring Location in T2 EM&A Manual (AEIAR-174/2013)	Alternative Monitoring Station ID	Alternative Monitoring Location	Reasons
KTD 1	Centre of Excellence in Paediatrics (Children's Hospital)	KTD 1a	Centre of Excellence in Paediatrics (Children's Hospital)	1. The original monitoring location situates at the site entrance of the Children's Hospital construction site and would be heavily affected by the construction works and associated activities of the hospital. 2. The alternative location is at the site boundary of this contract and close to the future Children's Hospital, the interference from existing non-project related construction activities is minimized. Thus it is a suitable alternative noise and TSP monitoring location.
KTD 2	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)	KTD 2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)	1. The original monitoring location is located at the site of future hospital, the construction of this future hospital is planned to commence in later stage. Considering its close proximity to the future construction site, non-project related dust and noise interference will be anticipated. 2. The alternative location is at the site boundary of the future hospital, and interference should be minimized. Thus it is considered as a suitable monitoring location.
KER 1	Future Residential Development at Kerry Godown	KER 1a	Site Boundary at Cheung Yip Street	1. The original monitoring location is in operation as a warehouse for dangerous goods. Warehouse activities, including frequent traffic of goods vehicles and loading and unloading of goods would generate non-project related dust and noise interference to the monitoring. Also, as the site may develop into residential building, any demolition/construction works involved will also generate dust and noise impact which are not related to this project. 2. The alternative monitoring location situates at the site boundary of this contract and close to the alignment of the Trunk Road T2. It is also in close proximity and representative to the existing Kerry Godown (future sensitive receiver), thus, it is a suitable monitoring location.

Note:
Façade noise measurement will be conducted for KTD 1a;
Free field noise measurement will be conducted for KTD 2a and KER 1a.

B.2.1 The proposed alternative monitoring locations satisfy the selection criteria as stated above, that the locations are situated at the site boundary and close to the sensitive receivers.

B.2.2 The alternative monitoring locations are listed in **Table B.4** and indicated in **Figure 2.**

Table B.4 Location of noise monitoring station

Monitoring Station	Location
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER1a	Site Boundary at Cheung Yip Street

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Appendix C

Calibration Certificates of Monitoring Equipment

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Feb 02, 2015 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 2154 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4720	3.2	2.00
2	NA	NA	1.00	1.0450	6.4	4.00
3	NA	NA	1.00	0.9320	7.9	5.00
4	NA	NA	1.00	0.8900	8.8	5.50
5	NA	NA	1.00	0.7330	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
1.0087	0.6852	1.4234		0.9957	0.6764	0.8799
1.0044	0.9612	2.0130		0.9915	0.9488	1.2443
1.0023	1.0754	2.2506		0.9894	1.0616	1.3912
1.0012	1.1249	2.3604		0.9883	1.1105	1.4591
0.9959	1.3587	2.8468		0.9831	1.3412	1.7597
Qstd slope (m) =		2.11451		Qa slope (m) =		1.32407
intercept (b) =		-0.02267		intercept (b) =		-0.01402
coefficient (r) =		0.99995		coefficient (r) =		0.99995
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

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Email : mcl@fugro.com.hk

MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 19-Jan-16
Location : KTD2a
Next Calibration Date: 18-Apr-16
Technician: Jimmy Lui

Brand: Tisch
Model: TE-5170 S/N: 3838

CONDITIONS

Sea Level Pressure (hPa):	1020.1	Corrected Pressure (mm Hg):	765
Temperature (°C):	18	Temperature (K):	291

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.11451
Model:	TE-5025A	Qstd Intercept:	-0.02267
Calibration Date:	2-Feb-15	Expiry Date:	2-Feb-16
S/N:	2154		

CALIBRATIONS

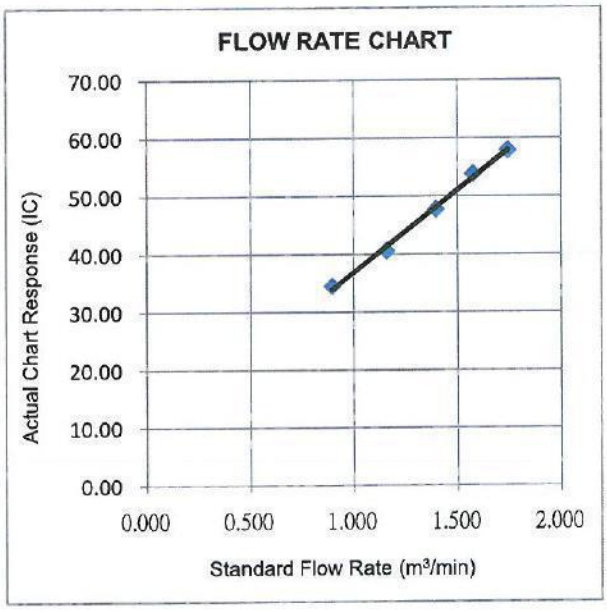
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	8.30	-4.70	13.000	1.742	57.00	57.87	Slope =	28.3252
13	7.10	-3.50	10.600	1.574	53.00	53.81	Intercept =	8.5930
10	5.90	-2.40	8.300	1.394	47.00	47.72	Corr. coeff.	0.9981
7	4.60	-1.10	5.700	1.157	40.00	40.61		
5	3.50	0.10	3.400	0.896	34.00	34.52		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



Report Date: 19th January, 2016

CHOI KAM HO
Project Consultant

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Email : mcl@fugro.com.hk

MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 19-Jan-16
Location : KTD1a
Next Calibration Date: 18-Apr-16
Brand: Tisch
Technician: Jimmy Lui
Model: TE-5170 S/N: 3478

CONDITIONS

Sea Level Pressure (hPa):	1020.1	Corrected Pressure (mm Hg):	765
Temperature (°C):	18	Temperature (K):	291

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.11451
Model:	TE-5025A	Qstd Intercept:	-0.02267
Calibration Date:	2-Feb-15	Expiry Date:	2-Feb-16
S/N:	2154		

CALIBRATIONS

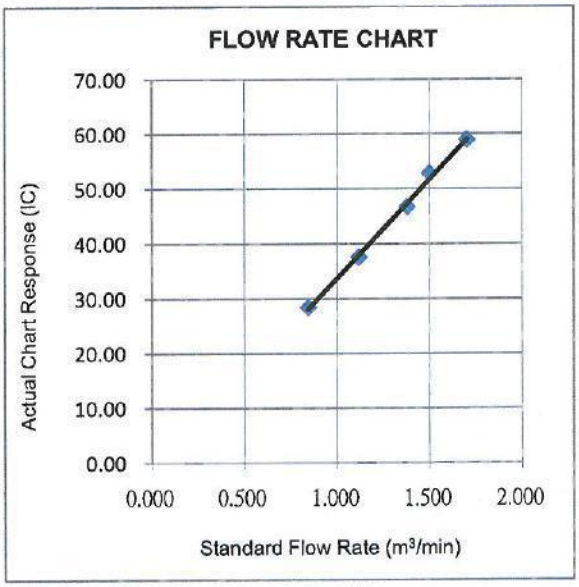
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	8.00	-4.40	12.400	1.701	58.00	58.89	Slope =	36.0577
13	6.30	-3.30	9.600	1.498	52.00	52.79	Intercept =	-2.2566
10	5.80	-2.30	8.100	1.377	46.00	46.70	Corr. coeff.	0.9984
7	4.40	-0.90	5.300	1.116	37.00	37.57		
5	3.30	0.30	3.000	0.842	28.00	28.43		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



Report Date: 19th January,2016

CHOI KAM HO
Project Consultant

MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong.
Tel : (852)-24508238
Fax : (852)-24508032
Email : mcl@fugro.com.hk

MaterialLab

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Project : Environmantal Monitoring Works For Contract No. KLN/2015/07
Date of Calibration: 19-Jan-16
Location : KER1a
Next Calibration Date: 18-Apr-16
Technician: Jimmy Lui

Brand: Tisch
Model: TE-5170 S/N: 3482

CONDITIONS

Sea Level Pressure (hPa):	1020.1	Corrected Pressure (mm Hg):	765
Temperature (°C):	18	Temperature (K):	291

CALIBRATION ORIFICE

Make:	Tisch	Qstd Slope:	2.11451
Model:	TE-5025A	Qstd Intercept:	-0.02267
Calibration Date:	2-Feb-15	Expiry Date:	2-Feb-16
S/N:	2154		

CALIBRATIONS

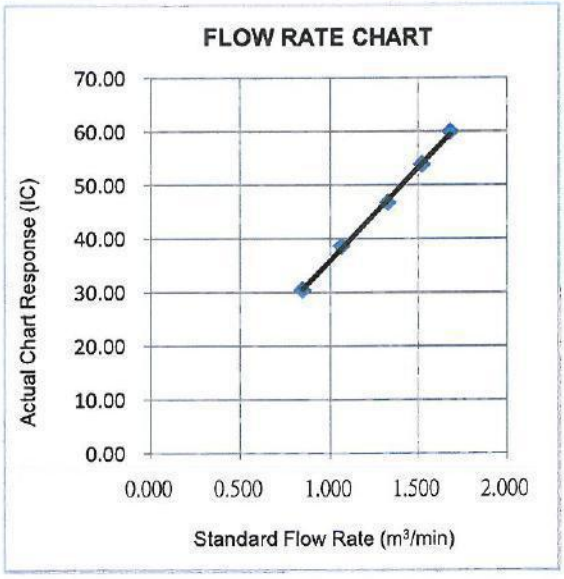
Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m^3/min)	I (chart)	IC (corrected)	LINEAR REGRESSION	
18	7.80	-4.30	12.100	1.681	59.00	59.90	Slope =	34.6096
13	6.60	-3.30	9.900	1.521	53.00	53.81	Intercept =	1.3613
10	5.50	-2.00	7.500	1.326	46.00	46.70	Corr. coeff.	0.9994
7	4.10	-0.70	4.800	1.063	38.00	38.58		
5	3.20	0.20	3.000	0.842	30.00	30.46		

Calculations:

Qstd = 1/m[Sqrt(H2O(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]
Qstd = standard flow rate
IC = corrected chart response
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration (deg K)
Pa = actual pressure during calibration (mm Hg)
Tstd = 298 deg K
Pstd = 760 mm Hg

For subsequent calculation of sampler flow:

1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)
m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



Report Date: 19th January,2016

CHOI KAM HO
Project Consultant

SIBATA

SIBATA SCIENTIFIC TECHNOLOGY LTD.
1-1-62, Nakane, Soka, Saitama, 340-0005 Japan
TEL : 048-933-1582 FAX : 048-933-1591

CALIBRATION CERTIFICATE

Date: August 4, 2015

Equipment Name	:	Digital Dust Indicator, Model LD-3B
Code No.	:	080000-42
Quantity	:	1 unit
Serial No.	:	567195
Sensitivity	:	0.001 mg/m3
Sensitivity Adjustment	:	552CPM
Scale Setting	:	June 8, 2015

We hereby certify that the avobe mentioned instrment has been calibrated satisfactory.

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Shintaro Okamura

Shintaro Okamura
Overseas Sales Division

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report no. : 940891CA151495(3)

CALIBRATION CERTIFICATE OF DUST METER

Client : Fugro Technical Services Limited

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-3B
Serial No.	: 567195
Specification Limit	: NA
Next Calibration Date	: 18-Aug-2016

Laboratory Information

Description	: Reference balance
Equipment ID.	: R-039-4
Date of Calibration	: 19-Aug-2015 Ambient Temperature : 32 °C
Calibration Location	: Calibration Lab. of MateriaLab
Method Used	: By direct comparison the weight of dust particle trapped in a filter paper using high volume sampler (TSP method) for a certain period, with the reading of the UUT. They should be placed at the same location and powered on and off at the same time.

Calibration Results :

Reference concentration (mg/m^3)	Total count for 1 hour	CPM (Count per minute)
0.0948	1111	18.52
0.1254	1342	22.37
0.1028	1191	19.85

Remarks:

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The interpolation equation : Concentration (mg/m^3) = K x UUT reading (CPM) where K = 0.00533
3. Correlation coefficient (r) : 0.9956

Checked by : _____ Date : 24-8-2015 Certified by : _____ Date : 24 Aug., 2015

So Chi Kuen (Engineer)

CA-R-297 (22/07/2009)

** End of Report **

SIBATA

SIBATA SCIENTIFIC TECHNOLOGY LTD.
1-1-62, Nakane, Soka, Saitama, 340-0005 Japan
TEL : 048-933-1582 FAX : 048-933-1591

CALIBRATION CERTIFICATE

Date: August 4, 2015

Equipment Name	:	Digital Dust Indicator, Model LD-3B
Code No.	:	080000-42
Quantity	:	1 unit
Serial No.	:	567191
Sensitivity	:	0.001 mg/m3
Sensitivity Adjustment	:	528CPM
Scale Setting	:	June 8, 2015

We hereby certify that the avobe mentioned instrment has been calibrated satisfactory.

Sincerely

SIBATA SCIENTIFIC TECHNOLOGY LTD.

Shintaro Okamura

Shintaro Okamura
Overseas Sales Division

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report no. : 940891CA151495(1)

CALIBRATION CERTIFICATE OF DUST METER

Client : Fugro Technical Services Limited

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

Description	: Laser Dust Monitor
Manufacturer	: SIBATA
Model No.	: LD-3B
Serial No.	: 567191
Specification Limit	: NA
Next Calibration Date	: 18-Aug-2016

Laboratory Information

Description	: Reference balance
Equipment ID.	: R-039-4
Date of Calibration	: 19-Aug-2015 Ambient Temperature : 32 °C
Calibration Location	: Calibration Lab. of MateriaLab
Method Used	: By direct comparison the weight of dust particle trapped in a filter paper using high volume sampler (TSP method) for a certain period, with the reading of the UUT. They should be placed at the same location and powered on and off at the same time.

Calibration Results :

Reference concentration (mg/m^3)	Total count for 1 hour	CPM (Count per minute)
0.0948	1108	18.47
0.1254	1752	29.20
0.1028	1330	22.17

Remarks:

1. The equipment being used in this calibration is traceable to recognized National Standards.
2. The interpolation equation : Concentration (mg/m^3) = K x UUT reading (CPM) where K = 0.00456
3. Correlation coefficient (r) : 0.9958

Checked by : _____ Date : 24-8-2015 Certified by : _____ Date : 24 Aug., 2015

So Chi Kuen (Engineer)

CA-R-297 (22/07/2009)

** End of Report **

CASELLA

Certificate of Conformity and Calibration

Instrument Model:-	**CEL-633C**		
Serial Number	2451083		
Firmware revision	V129-08		
Microphone Type:-	**CEL-251**	**Preamplifier Type:-**	**CEL-495**
Serial Number	938	**Serial Number**	**002845**
Instrument Class/Type:-	**1**		

Applicable standards:-

IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters)
IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)

Note:- The test sequences performed in this report are in accordance with the current Sound level meter *Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.*

Test Conditions:-	23.6 °C	**Test Engineer:-**	Millie Duncan
	44 %RH	**Date of Issue:-**	August 18, 2015
	1008.4 mBar		

Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

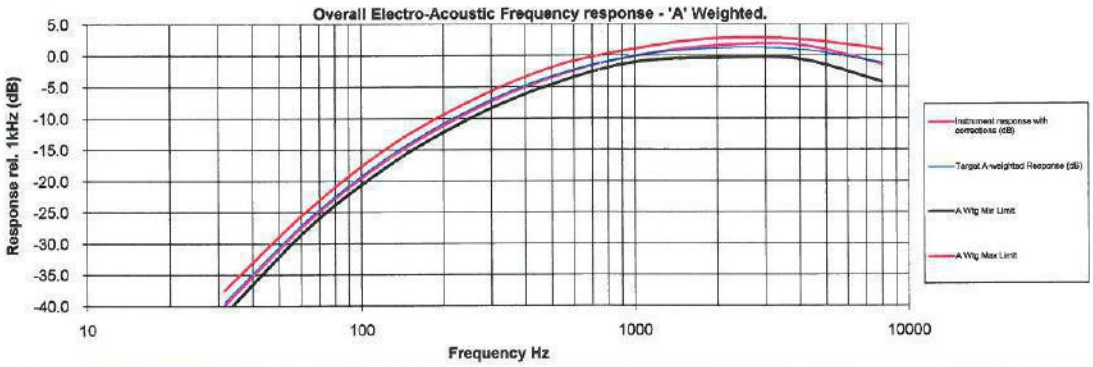
Test Summary:-

Self Generated Noise Test	**All Tests Pass**
Electrical Signal Test Of Frequency Weightings	**All Tests Pass**
Frequency & Time Weightings At 1 kHz	**All Tests Pass**
Level Linearity On The Reference Level Range	**All Tests Pass**
Toneburst Response Test	**All Tests Pass**
C-peak Sound Levels	**All Tests Pass**
Overload Indication	**All Tests Pass**
Acoustic Tests	**All Tests Pass**

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



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Toll Free. (800) 366-2966
Tel: (603) 672-0031 Fax: (603) 672-8053
E-mail: info@casellausa.com
Web: www.casellausa.com

CASELLA

Certificate of Conformity and Calibration

Instrument Model:-	**CEL-633A**		
Serial Number	2451048		
Firmware revision	V129-09		
Microphone Type:-	**CEL-251**	**Preamplifier Type:-**	**CEL-495**
Serial Number	1276	**Serial Number**	**002748**
Instrument Class/Type:-	**1**		

Applicable standards:-

IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters)
IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)

Note:- The test sequences performed in this report are in accordance with the current Sound level meter *Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.*

Test Conditions:-	29 °C 43 %RH 1000 mBar	**Test Engineer:-** **Date of Issue:-**	Nicola Cartwright December 18, 2015

Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

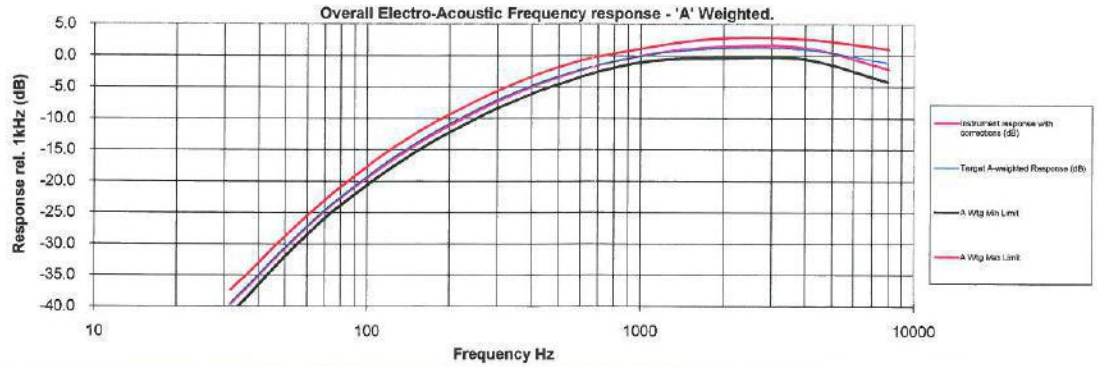
Test Summary:-

Self Generated Noise Test	**All Tests Pass**
Electrical Signal Test Of Frequency Weightings	**All Tests Pass**
Frequency & Time Weightings At 1 kHz	**All Tests Pass**
Level Linearity On The Reference Level Range	**All Tests Pass**
Toneburst Response Test	**All Tests Pass**
C-peak Sound Levels	**All Tests Pass**
Overload Indication	**All Tests Pass**
Acoustic Tests	**All Tests Pass**

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



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E-mail: info@casellausa.com
Web: www.casellausa.com

CASELLA

Certificate of Conformity and Calibration

Instrument Model:-	**CEL-633A**		
Serial Number	2451028		
Firmware revision	V129-09		
Microphone Type:-	**CEL-251**	**Preamplifier Type:-**	**CEL-495**
Serial Number	1163	Serial Number	002850
Instrument Class/Type:-	**1**		

Applicable standards:-

IEC 61672: 2002 / EN 60651 (Electroacoustics - Sound Level Meters)
IEC 60651 1979 (Sound Level Meters), ANSI S1.4: 1983 (Specifications For Sound Level Meters)

Note:- The test sequences performed in this report are in accordance with the current Sound level meter *Standard - IEC61672. The combination of tests performed are considered to confirm the products electro-acoustic performance to all applicable standards including superceeded Sound Level Meter Standards - IEC60651 and IEC60804.*

Test Conditions:-	21.3 °C	Test Engineer:-	Millie Duncan
	45.1 %RH	Date of Issue:-	October 26, 2015
	1008.8 mBar		

Declaration of conformity:-

This test certificate confirms that the instrument specified above has been successfully tested to comply with the manufacturer's published specifications. Tests are performed using equipment traceable to national standards in accordance with Casella's ISO 9001:2008 quality procedures. This product is certified as being compliant to the requirements of the CE Directive.

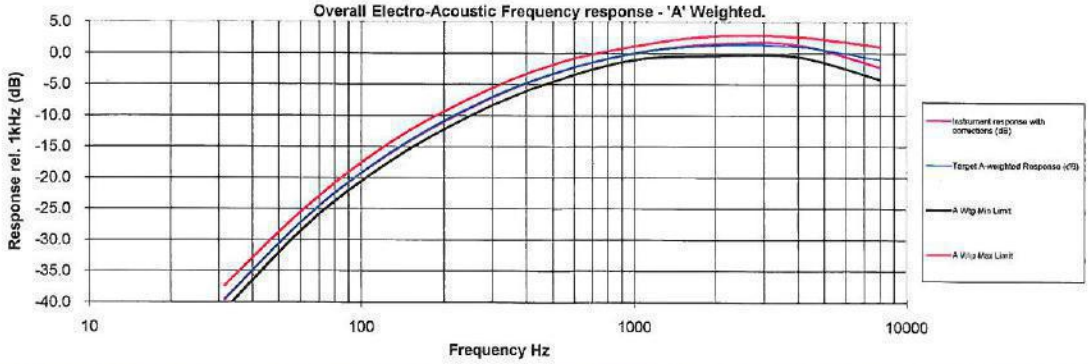
Test Summary:-

Self Generated Noise Test	**All Tests Pass**
Electrical Signal Test Of Frequency Weightings	**All Tests Pass**
Frequency & Time Weightings At 1 kHz	**All Tests Pass**
Level Linearity On The Reference Level Range	**All Tests Pass**
Toneburst Response Test	**All Tests Pass**
C-peak Sound Levels	**All Tests Pass**
Overload Indication	**All Tests Pass**
Acoustic Tests	**All Tests Pass**

Combined Electro-Acoustic Frequency Response - A Weighted

Combined Electro-Acoustic Frequency Response - A Weighted (IEC 61672-3:2006)

The following A-Weighted frequency response graph shows this instruments overall frequency response based upon the application of multi-frequency pressure field calibrations. The microphones Pressure to Free field correction coefficients are applied to pressure response. Reference level taken at 1kHz.



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华南国家计量测试中心
广东省计量科学研究院
SOUTH CHINA NATIONAL CENTER OF METROLOGY
GUANGDONG INSTITUTE OF METROLOGY

ilac-MRA CNAS 校准 CNAS L0730

校准证书
CALIBRATION CERTIFICATE

证书编号 Certificate No. SSD201504447

委托方 Client	MateriaLab Consultants Limited
委托方地址 Add. of Client	Fugro Development Centre, 5 Lok Yi Street, Tai Lam, Tuen Mun, N T., Hong Kong
计量器具名称 Description	Sound Level Calibrator
型号规格 Model/Type	CEL-120/1
制造厂 Manufacturer	CASELLA
出厂编号 Serial No.	5230950
设备编号 Equipment No.	———
接收日期 Date of Receipt	2015年 07 月 27 日 (Y M D)
结论 Conclusion	符合JJG 176-2005中1级技术要求
校准日期 Date of Calibration	2015年 07 月 28 日 (Y M D)

批准人 Approved Signatory

核验 Checked by

校准 Calibrated by

证书专用章 Stamp

本中心地址：中国广州市广园中路松柏东街30号　　邮政编码：510405
电话：(8620)86594172 传真：(8620)86590743 投诉电话：(8620)26296063 E-mail：scm@scm.com.cn
Add: No.30, Songbaidong Street, Guangyuanzhong Road, Guangzhou, P. R. China
Post Code: 510405　Tel: (8620)86594172　Fax: (8620)86590743　Complaint Tel: (8620)26296063

说　明

证书编号 SSD201504447
Certificate No.

DIRECTIONS

1. 本中心是国家质量监督检验检疫总局在华南地区设立的国家法定计量检定机构，计量授权证书号是：（国）法计（2012）01043号、（国）法计（2012）01032号。本中心质量管理体系符合ISO/IEC 17025:2005标准的要求。
This laboratory is the National Legal Metrological Verification Institution in southern China set up by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) under authorization certificates No.(2012)01043 & (2012)01032. The quality system is in accordance with ISO/IEC 17025:2005.

2. 本中心所出具的数据均可溯源至国家计量基准和国际单位制(SI)。
All data issued by this laboratory are traceable to national primary standards and International System of Units (SI).

3. 本次校准的技术依据：
Reference documents for the calibration:
JJG 176-2005 声校准器检定规程　V.R. of Sound Calibrators

4. 本次校准所使用的主要计量标准器具：
Major standards of measurement used in the calibration:

设备名称/型号 Name of Equipment /Model	编号 Serial No.	证书号/有效期 Certificate No. /Due Date	计量特性 Metrological Characteristic
测量放大器 Measuring Amplifier /2636	2160821	SSD201500612 /2016-01-27	1 级 Grade 1
声校准器 Sound Calibrator /4231	2713562	SSD201503065 /2016-05-25	1 级 Grade 1

5. 校准地点、环境条件：
Place and environmental conditions of the calibration:
地点 Place　声学/振动实验室 Acoustics/Vibration Lab.　温度 Temperature　(23±3) ℃　相对湿度 R.H.　(50～60) %

6. 被校准仪器限制使用条件：
Limiting condition of the instrument calibrated:
——

注：1. 本证书校准结果只与受校准仪器有关。
2. 未经本机构书面批准，不得部分复制此证书。
Note: 1. The results relate only to the items calibrated.
2. This certificate shall not be reproduced except in full, without the written approval of our laboratory.

校准结果
RESULTS OF CALIBRATION

证书编号： SSD201504447 原始记录编号： 2201504447 第 3 页，共 4 页
Certification No. Record No. Page of

1 外观： 合格

Apparent inspection: Pass

2 声压级（dB）：见表1

Sound Pressure Level: Showed in table 1

表1 Table 1

标称值（dB）Nominal Value	实测值（dB）Measured Value	允差（dB）Tolerance	结论 Conclusion	稳定度（dB）Stabilization	稳定度允差（dB）Stabilization Tolerance	结论 Conclusion
94	93.93	±0.40	合格(Pass)	0.01	≤0.10	合格(Pass)
114	113.93	±0.40	合格(Pass)	0.01	≤0.10	合格(Pass)

3 频率：见表2

Frequency: Showed in table 2

表2 Table 2

标称值（Hz）Nominal Value	实测值（Hz）Measured Value	允差（%）Tolerance	结论 Conclusion
1000	1000.0	±1.0	合格(Pass)

4 总失真： 见表3

Total harmonic distortion: Showed in table 3

表3 Table 3

频率（Hz）Frequency	声压级（dB）Sound Pressure Level	总失真（%）Total Harmonic Distortion	允差（%）Tolerance	结论 Conclusion
1000	94	0.1	≤3	合格(Pass)
1000	114	0.2	≤3	合格(Pass)

校准结果
RESULTS OF CALIBRATION

证书编号： SSD201504447 原始记录编号： 2201504447 第 4 页，共 4 页
Certification No. Record No. Page of

说明(Note)：

1 测量结果扩展不确定度：

Expanded uncertainty of measurement:

声压级：U=0.15 dB，k=2

Sound Pressure Level Calibration

频率：U_{rel}=0.1 %，k=2

Frequency

失真度：U_{rel}=1.4 %，k=2

Harmonic distortion

（依据JJF 1059.1-2012 测量不确定度评定与表示）

(According to JJF 1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

2 建议校准周期不超过1年。

The interval of calibration advised within one year.

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report no.: 940891CA150535

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

Description	:	Sound Calibrator
Manufacturer	:	Casella (Model no. CEL-120/1
Serial No.	:	5230923 (Eqt. No. N-15)
Next Calibration Date	:	12-Mar-2016
Specification Limit	:	±0.5dB

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226

Equipment ID. : R-108-1

Date of Calibration : 13-Mar-2015 Ambient Temperature : 21 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	0.2dB	±0.5dB
114dB	0.1dB	

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. Sound level meter used is Casella sound level meter (S/N: 4637931).
4. The equipment does comply with specification limit.

Checked by : T.W.Tsang Date : 16 Mar., 2015 Certified by : _____ Date : 16 Mar., 2015

So Chi Kuen (Engineer)

CA-R-297 (22/07/2009)

** End of Report **

FUGRO TECHNICAL SERVICES LIMITED
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Tuen Mun, N.T.,
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Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com.hk
Website : www.materialab.com.hk

MateriaLab

Report no.: 940891CA150256(1)

CALIBRATION CERTIFICATE OF SOUND CALIBRATOR

Client : Fugro Technical Services Ltd.

Project : Calibration Services

Client Supplied Information

Details of Unit Under Test, UUT

Description	:	Sound Calibrator
Manufacturer	:	Casella (Model no. CEL-120/1
Serial No.	:	5230758
Next Calibration Date	:	02-Feb-2016
Specification Limit	:	±0.5dB

Laboratory Information

Description : B & K Acoustic Multifunction Calibrator 4226

Equipment ID. : R-108-1

Date of Calibration : 03-Feb-2015 Ambient Temperature : 21 °C

Calibration Location : Calibration Laboratory of MateriaLab

Method Used : By direct comparison

Calibration Results :

Parameters (Setting of UUT)	Mean Value (error of measurement)	Specification Limit(dB)
94dB	0.2dB	±0.5dB
114dB	0.2dB	

Remarks :

1. The equipment used in this calibration is traceable to recognized National Standards.
2. The mean value is the average of four measurements.
3. Sound level meter used is client sound level meter (S/N: 3321814).
4. The equipment does comply with specification limit.

Checked by : T.W.Tsang Date : 03 Feb., 2015 Certified by : _____ Date : 03 Feb, 2015

So Chi Kuen (Engineer)

CA-R-297 (22/07/2009)

** End of Report **

MATERIALAB CONSULTANTS LIMITED
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Appendix D

Baseline Air Quality Monitoring Data

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1-hr TSP Monitoring

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)

1-hour TSP (µg/m³)					
Date	**Start Time**	**1st hr**	**2nd hr**	**3rd hr**	**Weather**
21-Jan-16	9:30	307	254	260	Fine
22-Jan-16	11:30	88	90	90	Rainy
23-Jan-16	9:35	22	24	32	Fine
24-Jan-16	10:20	30	32	35	Rainy
25-Jan-16	9:20	20	23	25	Sunny
26-Jan-16	13:51	41	39	39	Rainy
27-Jan-16	9:56	73	32	36	Rainy
28-Jan-16	13:59	39	42	36	Rainy
29-Jan-16	10:03	29	36	31	Rainy
30-Jan-16	10:00	30	23	22	Fine
31-Jan-16	9:19	34	33	33	Cloudy
1-Feb-16	13:59	26	35	48	Cloudy
2-Feb-16	9:55	42	24	28	Cloudy
3-Feb-16	13:58	32	36	28	Cloudy

Average	54
Max	307
Min	20

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

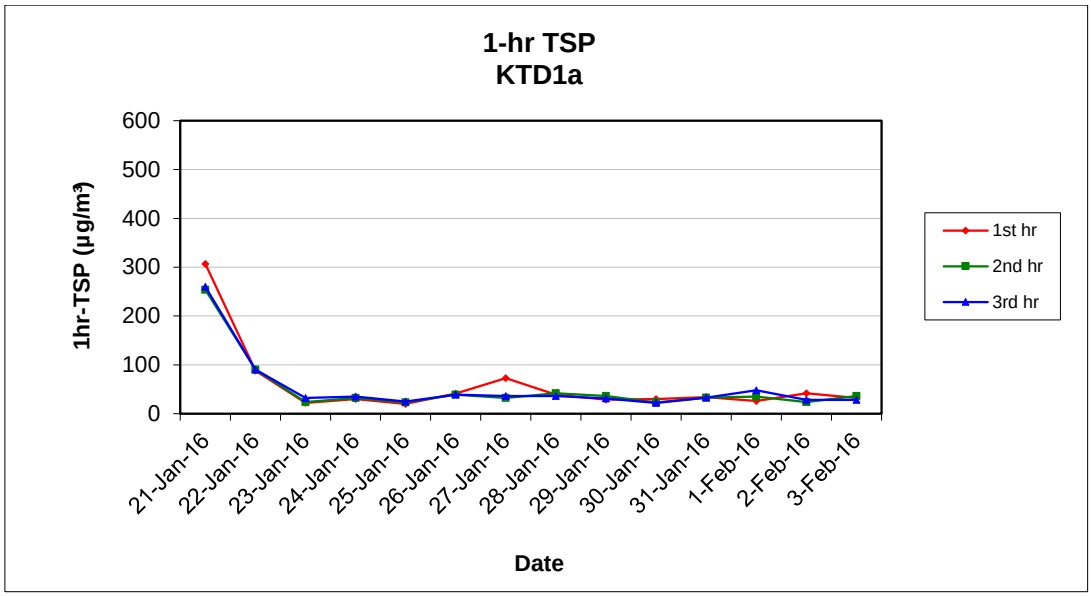
1-hour TSP (µg/m³)					
Date	**Start Time**	**1st hr**	**2nd hr**	**3rd hr**	**Weather**
21-Jan-16	12:40	78	108	127	Fine
22-Jan-16	12:05	81	80	73	Rainy
23-Jan-16	13:09	34	36	45	Fine
24-Jan-16	10:10	21	18	21	Rainy
25-Jan-16	9:05	18	21	21	Sunny
26-Jan-16	13:46	32	30	33	Rainy
27-Jan-16	9:52	51	42	57	Rainy
28-Jan-16	13:54	31	28	32	Rainy
29-Jan-16	11:25	34	26	42	Rainy
30-Jan-16	9:45	74	42	64	Fine
31-Jan-16	9:07	46	41	43	Cloudy
1-Feb-16	13:53	7	13	17	Cloudy
2-Feb-16	9:49	20	22	17	Cloudy
3-Feb-16	13:51	66	70	92	Cloudy

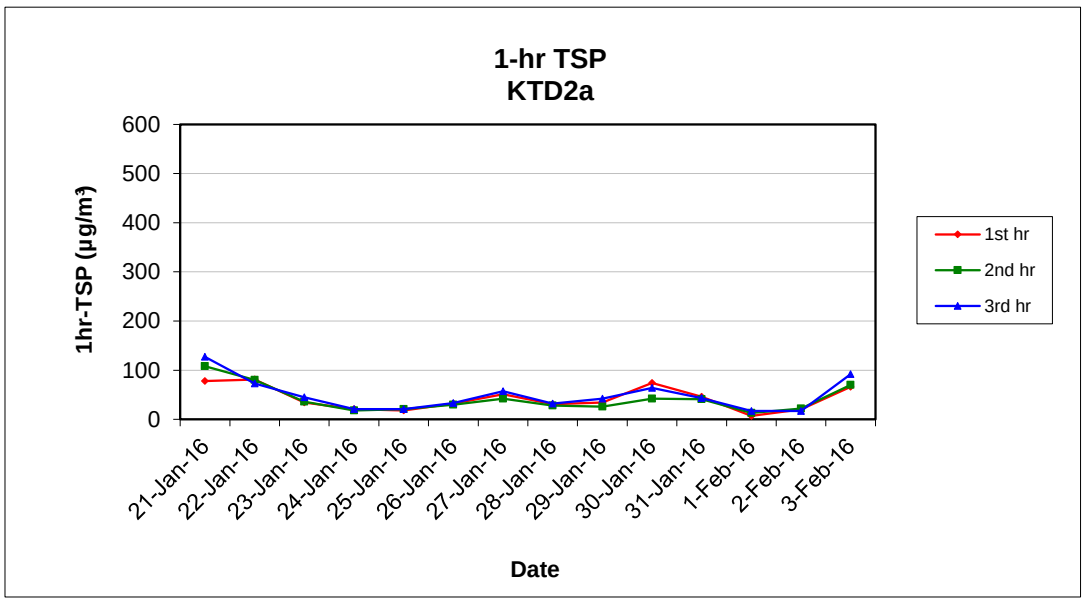
Average	44
Max	127
Min	7

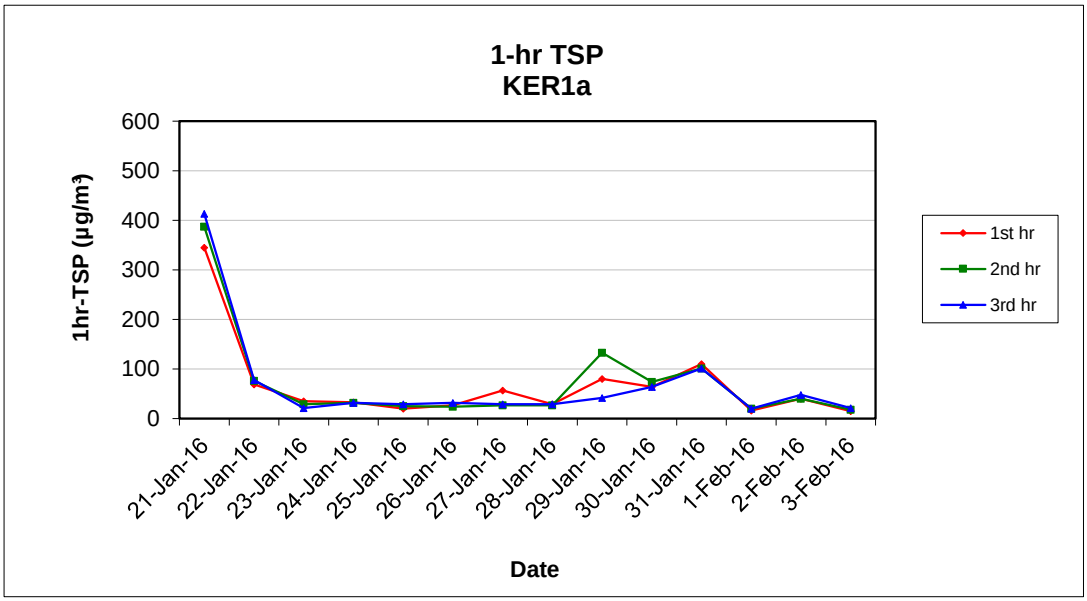
KER1a - Site Boundary ay Cheung Yip Street

1-hour TSP (µg/m³)					
Date	**Start Time**	**1st hr**	**2nd hr**	**3rd hr**	**Weather**
21-Jan-16	12:30	345	387	413	Fine
22-Jan-16	15:15	69	76	78	Rainy
23-Jan-16	13:20	35	29	21	Fine
24-Jan-16	13:30	33	32	32	Rainy
25-Jan-16	12:30	20	25	29	Sunny
26-Jan-16	13:34	27	24	32	Rainy
27-Jan-16	9:41	57	27	29	Rainy
28-Jan-16	13:42	29	27	29	Rainy
29-Jan-16	9:40	80	133	42	Rainy
30-Jan-16	13:00	64	74	64	Fine
31-Jan-16	8:57	110	101	101	Cloudy
1-Feb-16	13:42	16	20	20	Cloudy
2-Feb-16	9:37	40	40	48	Cloudy
3-Feb-16	13:39	15	18	21	Cloudy

Average	69
Max	413
Min	15


1-hr TSP
KTD1a
1hr-TSP (µg/m³)
600
500
400
300
200
100
0
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
3-Feb-16
Date
1st hr
2nd hr
3rd hr


1-hr TSP
KTD2a
1hr-TSP (µg/m³)
600
500
400
300
200
100
0
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
3-Feb-16
Date
1st hr
2nd hr
3rd hr


1-hr TSP
KER1a
1hr-TSP (µg/m³)
600
500
400
300
200
100
0
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
3-Feb-16
Date
1st hr
2nd hr
3rd hr

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24-hr TSP Monitoring

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)

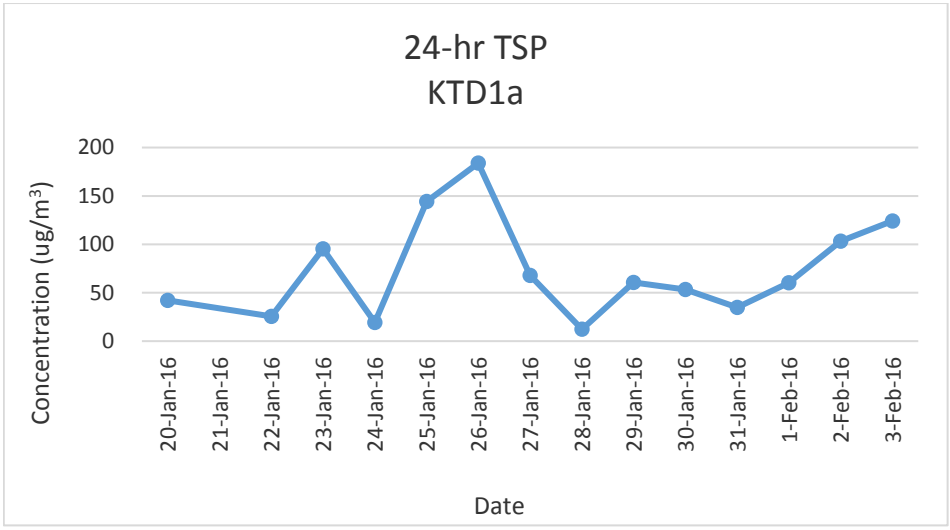
Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume ($m^{3)}$	Conc. (ug/m^3)
				Initial	Final			Initial	Final			
20-Jan-16	Rainy	288.5	764.8	2.6814	2.7518	0.0704	24	1.19	1.17	1.18	1672.6	42
22-Jan-16	Rainy	287.1	764.2	2.7117	2.7612	0.0495	24	1.37	1.34	1.35	1946.2	25
23-Jan-16	Fine	281.5	770.4	2.6837	2.8655	0.1818	24	1.38	1.34	1.36	1906.3	95
24-Jan-16	Rainy	277.9	766.0	2.6837	2.7195	0.0358	24	1.33	1.28	1.31	1862.5	19
25-Jan-16	Sunny	280.4	774.5	2.6886	2.9720	0.2834	24	1.39	1.34	1.36	1966.2	144
26-Jan-16	Rainy	283.4	770.4	2.6905	3.0354	0.3449	24	1.32	1.28	1.30	1875.8	184
27-Jan-16	Rainy	286.0	767.1	2.6925	2.8218	0.1293	24	1.31	1.28	1.30	1901.7	68
28-Jan-16	Rainy	289.1	763.7	2.6937	2.7165	0.0228	24	1.30	1.28	1.29	1862.9	12
29-Jan-16	Rainy	289.6	763.5	2.6983	2.8079	0.1096	24	1.30	1.28	1.29	1806.9	61
30-Jan-16	Fine	290.6	765.1	2.8575	2.9506	0.0931	24	1.25	1.23	1.24	1743.8	53
31-Jan-16	Cloudy	288.7	765.0	2.6972	2.7609	0.0637	24	1.31	1.28	1.29	1825.4	35
1-Feb-16	Cloudy	285.4	766.7	2.8627	2.9780	0.1153	24	1.31	1.34	1.33	1910.4	60
2-Feb-16	Cloudy	283.4	768.4	2.8842	3.0812	0.1970	24	1.38	1.28	1.33	1906.2	103
3-Feb-16	Cloudy	285.5	767.8	2.8695	3.1061	0.2366	24	1.32	1.28	1.30	1904.4	124
											Min	12
											Max	184
											Average	73

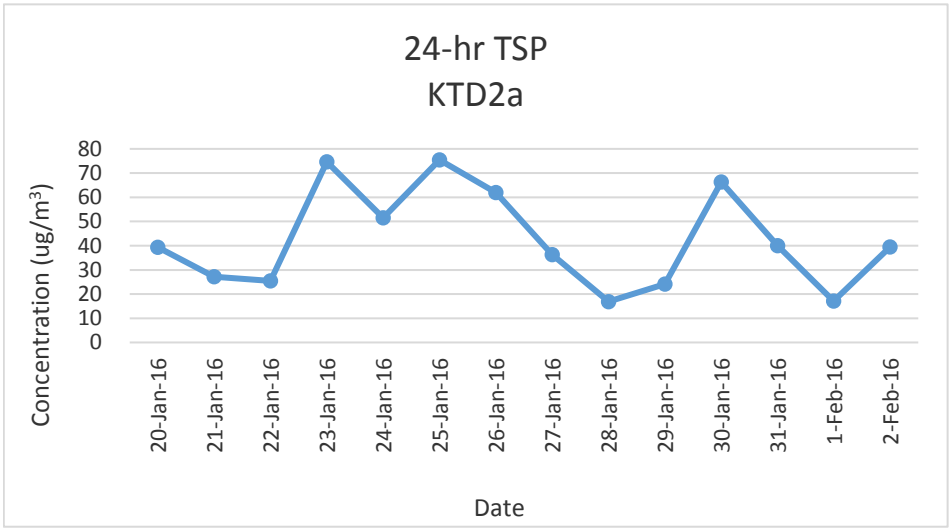
KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)

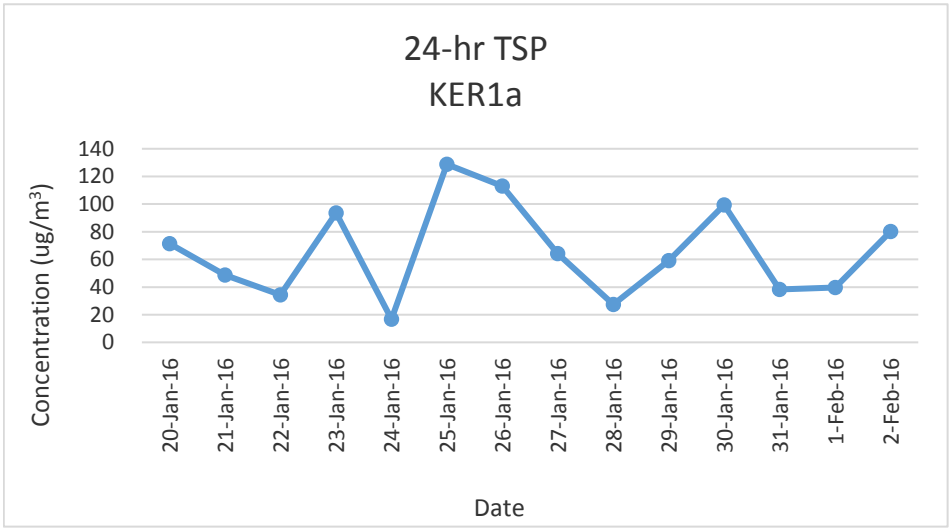
Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume ($m^{3)}$	Conc. (ug/m^3)
				Initial	Final			Initial	Final			
20-Jan-16	Rainy	288.5	764.8	2.6795	2.7552	0.0757	24	1.35	1.32	1.33	1921.0	39
21-Jan-16	Fine	289.1	763.3	2.6817	2.7325	0.0508	24	1.27	1.32	1.30	1868.8	27
22-Jan-16	Rainy	287.1	764.2	2.6959	2.7449	0.0490	24	1.35	1.32	1.34	1923.7	25
23-Jan-16	Fine	281.5	770.4	2.6827	2.8316	0.1489	24	1.41	1.36	1.38	1990.6	75
24-Jan-16	Rainy	277.9	766.0	2.6750	2.7594	0.0844	24	1.16	1.11	1.13	1632.8	52
25-Jan-16	Sunny	280.4	774.5	2.6777	2.8091	0.1314	24	1.23	1.18	1.20	1731.6	75
26-Jan-16	Rainy	283.4	770.4	2.6682	2.7820	0.1138	24	1.29	1.25	1.27	1829.0	62
27-Jan-16	Rainy	286.0	767.1	2.7054	2.7642	0.0588	24	1.14	1.11	1.12	1616.5	36
28-Jan-16	Rainy	289.1	763.7	2.6895	2.7168	0.0273	24	1.13	1.11	1.12	1612.2	17
29-Jan-16	Rainy	289.6	763.5	2.6888	2.7277	0.0389	24	1.13	1.11	1.12	1611.4	24
30-Jan-16	Fine	290.6	765.1	2.8769	2.9906	0.1137	24	1.19	1.18	1.19	1709.2	66
31-Jan-16	Cloudy	288.7	765.0	2.8535	2.9243	0.0708	24	1.24	1.21	1.23	1769.1	40
1-Feb-16	Cloudy	285.4	766.7	2.8430	2.8743	0.0313	24	1.28	1.25	1.27	1822.5	17
2-Feb-16	Cloudy	283.4	768.4	2.8723	2.9447	0.0724	24	1.30	1.25	1.27	1832.6	39
											Min	17
											Max	75
											Average	42

KER1a - Site Boundary at Cheung Yip Street

Start Date	Weather Condition	Air Temperature (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Sampling Time(hrs)	Flow Rate (m^3/min.)		Average flow (m^3/min.)	Total volume ($m^{3)}$	Conc. (ug/m^3)
				Initial	Final			Initial	Final			
20-Jan-16	Rainy	288.5	764.8	2.6789	2.7949	0.1160	24	1.14	1.12	1.13	1623.9	71
21-Jan-16	Fine	289.1	763.3	2.6830	2.7621	0.0791	24	1.14	1.12	1.13	1622.2	49
22-Jan-16	Rainy	287.1	764.2	2.6988	2.7555	0.0567	24	1.17	1.15	1.16	1648.9	34
23-Jan-16	Fine	281.5	770.4	2.6949	2.8552	0.1603	24	1.22	1.17	1.20	1712.2	94
24-Jan-16	Rainy	277.9	766.0	2.6704	2.6979	0.0275	24	1.16	1.12	1.14	1640.6	17
25-Jan-16	Sunny	280.4	774.5	2.6758	2.8916	0.2158	24	1.16	1.12	1.14	1675.7	129
26-Jan-16	Rainy	283.4	770.4	2.6844	2.8656	0.1812	24	1.15	1.12	1.14	1602.6	113
27-Jan-16	Rainy	286.0	767.1	2.7052	2.8159	0.1107	24	1.21	1.17	1.19	1724.6	64
28-Jan-16	Rainy	289.1	763.7	2.6959	2.7419	0.0460	24	1.14	1.12	1.13	1682.6	27
29-Jan-16	Rainy	289.6	763.5	2.6850	2.7807	0.0957	24	1.14	1.12	1.13	1616.8	59
30-Jan-16	Fine	290.6	765.1	2.8534	3.0273	0.1739	24	1.25	1.23	1.24	1751.5	99
31-Jan-16	Cloudy	288.7	765.0	2.6980	2.7588	0.0608	24	1.14	1.12	1.13	1590.6	38
1-Feb-16	Cloudy	285.4	766.7	2.8847	2.9530	0.0683	24	1.21	1.17	1.19	1726.7	40
2-Feb-16	Cloudy	283.4	768.4	2.8777	3.0174	0.1397	24	1.21	1.17	1.19	1740.9	80
											Min	17
											Max	129
											Average	65


24-hr TSP
KTD1a
Concentration (ug/m³)
200
150
100
50
0
20-Jan-16
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
3-Feb-16
Date


24-hr TSP
KTD2a
Concentration (ug/m³)
80
70
60
50
40
30
20
10
0
20-Jan-16
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
Date


24-hr TSP
KER1a
Concentration (ug/m³)
140
120
100
80
60
40
20
0
20-Jan-16
21-Jan-16
22-Jan-16
23-Jan-16
24-Jan-16
25-Jan-16
26-Jan-16
27-Jan-16
28-Jan-16
29-Jan-16
30-Jan-16
31-Jan-16
1-Feb-16
2-Feb-16
Date

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Appendix E

Baseline Noise Monitoring Data

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
21/1/2016	7:00	66	68	62	
21/1/2016	7:30	67	69	62	
21/1/2016	8:00	66	67	62	
21/1/2016	8:30	65	68	62	
21/1/2016	9:00	67	69	61	
21/1/2016	9:30	65	66	61	
21/1/2016	10:00	65	67	61	
21/1/2016	10:30	73	68	61	
21/1/2016	11:00	77	81	70	
21/1/2016	11:30	75	76	66	
21/1/2016	12:00	67	73	61	
21/1/2016	12:30	64	65	62	
21/1/2016	13:00	70	73	63	
21/1/2016	13:30	73	76	70	
21/1/2016	14:00	72	77	64	
21/1/2016	14:30	74	75	70	
21/1/2016	15:00	71	72	66	
21/1/2016	15:30	72	73	65	
21/1/2016	16:00	73	74	68	
21/1/2016	16:30	69	70	65	
21/1/2016	17:00	Maintenance			
21/1/2016	17:30	Maintenance			
21/1/2016	18:00	61	63	60	
21/1/2016	18:30	60	62	59	
22/1/2016	7:00	66	68	64	
22/1/2016	7:30	67	69	65	
22/1/2016	8:00	69	70	67	
22/1/2016	8:30	79	76	69	
22/1/2016	9:00	75	77	74	
22/1/2016	9:30	83	85	81	W
22/1/2016	10:00	82	83	82	W
22/1/2016	10:30	82	83	82	W
22/1/2016	11:00	82	83	81	W
22/1/2016	11:30	79	83	73	
22/1/2016	12:00	Maintenance			
22/1/2016	12:30	77	72	65	
22/1/2016	13:00	80	75	67	R
22/1/2016	13:30	80	81	74	R
22/1/2016	14:00	77	78	71	
22/1/2016	14:30	78	77	70	
22/1/2016	15:00	76	76	70	
22/1/2016	15:30	78	78	70	
22/1/2016	16:00	77	79	71	
22/1/2016	16:30	77	77	69	
22/1/2016	17:00	82	88	69	
22/1/2016	17:30	70	70	66	
22/1/2016	18:00	67	69	65	
22/1/2016	18:30	67	69	64	W
23/1/2016	7:00	62	65	59	
23/1/2016	7:30	65	66	60	
23/1/2016	8:00	72	72	61	
23/1/2016	8:30	83	84	82	
23/1/2016	9:00	83	84	82	
23/1/2016	9:30	83	84	82	
23/1/2016	10:00	83	84	83	W
23/1/2016	10:30	83	84	83	
23/1/2016	11:00	83	84	83	
23/1/2016	11:30	75	77	63	
23/1/2016	12:00	65	68	62	
23/1/2016	12:30	81	84	62	
23/1/2016	13:00	84	85	83	
23/1/2016	13:30	83	84	82	W
23/1/2016	14:00	83	84	83	W
23/1/2016	14:30	83	84	83	W
23/1/2016	15:00	81	84	65	W
23/1/2016	15:30	76	79	64	W
23/1/2016	16:00	67	69	63	W
23/1/2016	16:30	69	70	63	
23/1/2016	17:00	66	69	62	
23/1/2016	17:30	67	69	62	W

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
23/1/2016	18:00	65	67	62	W
23/1/2016	18:30	65	67	60	W
24/1/2016	7:00	58	59	53	W
24/1/2016	7:30	57	59	53	W
24/1/2016	8:00	59	60	55	W
24/1/2016	8:30	61	61	55	W
24/1/2016	9:00	63	66	55	W
24/1/2016	9:30	65	66	55	W
24/1/2016	10:00	63	66	56	W
24/1/2016	10:30	64	67	56	W
24/1/2016	11:00	64	66	56	W
24/1/2016	11:30	64	67	56	W
24/1/2016	12:00	64	67	56	W
24/1/2016	12:30	65	68	56	W
24/1/2016	13:00	65	68	56	W
24/1/2016	13:30	65	68	57	
24/1/2016	14:00	65	68	57	R
24/1/2016	14:30	67	69	56	R
24/1/2016	15:00	67	70	57	
24/1/2016	15:30	65	69	57	
24/1/2016	16:00	66	69	57	
24/1/2016	16:30	65	68	57	
24/1/2016	17:00	65	68	58	
24/1/2016	17:30	65	69	57	
24/1/2016	18:00	65	69	57	W
24/1/2016	18:30	64	68	55	W
25/1/2016	7:00	64	66	62	
25/1/2016	7:30	65	67	62	
25/1/2016	8:00	64	67	61	
25/1/2016	8:30	63	64	61	
25/1/2016	9:00	63	64	61	
25/1/2016	9:30	63	64	61	
25/1/2016	10:00	63	64	61	
25/1/2016	10:30	68	70	62	
25/1/2016	11:00	71	72	66	
25/1/2016	11:30	72	74	66	
25/1/2016	12:00	73	74	65	
25/1/2016	12:30	68	69	64	
25/1/2016	13:00	66	67	64	
25/1/2016	13:30	74	79	65	
25/1/2016	14:00	77	81	67	
25/1/2016	14:30	77	80	68	
25/1/2016	15:00	73	78	66	
25/1/2016	15:30	70	73	66	
25/1/2016	16:00	75	80	66	
25/1/2016	16:30	76	79	68	
25/1/2016	17:00	69	71	66	
25/1/2016	17:30	69	71	64	
25/1/2016	18:00	68	70	63	
25/1/2016	18:30	68	69	63	
26/1/2016	7:00	63	64	61	
26/1/2016	7:30	64	66	62	
26/1/2016	8:00	65	66	63	
26/1/2016	8:30	66	69	64	
26/1/2016	9:00	68	70	66	
26/1/2016	9:30	73	71	66	
26/1/2016	10:00	69	71	66	
26/1/2016	10:30	68	70	66	
26/1/2016	11:00	68	70	67	
26/1/2016	11:30	67	68	66	
26/1/2016	12:00	65	66	58	
26/1/2016	12:30	65	66	58	
26/1/2016	13:00	66	68	58	
26/1/2016	13:30	64	66	58	
26/1/2016	14:00	71	65	58	
26/1/2016	14:30	79	80	78	
26/1/2016	15:00	77	79	72	
26/1/2016	15:30	77	81	72	
26/1/2016	16:00	81	81	80	
26/1/2016	16:30	80	81	80	

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
26/1/2016	17:00	77	81	64	
26/1/2016	17:30	65	67	60	
26/1/2016	18:00	65	67	59	
26/1/2016	18:30	64	66	58	
27/1/2016	7:00	66	69	64	
27/1/2016	7:30	66	68	64	
27/1/2016	8:00	67	68	64	
27/1/2016	8:30	66	68	64	
27/1/2016	9:00	68	68	63	
27/1/2016	9:30	67	68	63	
27/1/2016	10:00	66	68	63	
27/1/2016	10:30	68	70	64	
27/1/2016	11:00	67	68	65	
27/1/2016	11:30	69	69	64	
27/1/2016	12:00	67	69	65	
27/1/2016	12:30	67	69	65	W
27/1/2016	13:00	67	69	65	
27/1/2016	13:30	72	73	66	
27/1/2016	14:00	69	71	66	
27/1/2016	14:30	75	77	67	
27/1/2016	15:00	73	75	66	
27/1/2016	15:30	73	77	66	
27/1/2016	16:00	70	72	66	
27/1/2016	16:30	71	72	66	
27/1/2016	17:00	69	71	65	
27/1/2016	17:30	67	68	65	
27/1/2016	18:00	67	68	64	
27/1/2016	18:30	66	68	64	
28/1/2016	7:00	65	66	61	
28/1/2016	7:30	65	66	61	
28/1/2016	8:00	64	65	60	
28/1/2016	8:30	64	66	60	
28/1/2016	9:00	65	67	60	R
28/1/2016	9:30	64	66	60	R
28/1/2016	10:00	65	67	60	R
28/1/2016	10:30	66	67	60	R
28/1/2016	11:00	64	66	59	
28/1/2016	11:30	67	70	63	
28/1/2016	12:00	64	66	62	
28/1/2016	12:30	66	69	63	
28/1/2016	13:00	78	78	66	R
28/1/2016	13:30	78	83	68	R
28/1/2016	14:00	77	81	69	
28/1/2016	14:30	81	85	69	
28/1/2016	15:00	82	85	68	
28/1/2016	15:30	81	86	69	
28/1/2016	16:00	81	85	71	
28/1/2016	16:30	82	82	67	
28/1/2016	17:00	67	70	63	
28/1/2016	17:30	65	67	62	
28/1/2016	18:00	63	66	61	
28/1/2016	18:30	63	65	62	
29/1/2016	7:00	64	65	61	
29/1/2016	7:30	65	67	63	
29/1/2016	8:00	65	67	63	
29/1/2016	8:30	69	72	64	
29/1/2016	9:00	78	77	68	
29/1/2016	9:30	87	91	71	
29/1/2016	10:00	83	85	74	
29/1/2016	10:30	83	85	77	
29/1/2016	11:00	82	85	78	R
29/1/2016	11:30	84	85	66	R
29/1/2016	12:00	66	69	60	
29/1/2016	12:30	66	68	63	
29/1/2016	13:00	82	85	66	
29/1/2016	13:30	83	86	77	
29/1/2016	14:00	85	87	78	
29/1/2016	14:30	84	87	77	
29/1/2016	15:00	83	86	73	
29/1/2016	15:30	78	79	71	

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
29/1/2016	16:00	76	78	71	
29/1/2016	16:30	74	76	70	
29/1/2016	17:00	72	74	67	
29/1/2016	17:30	69	71	62	
29/1/2016	18:00	66	69	61	
29/1/2016	18:30	66	68	61	
30/1/2016	7:00	61	63	59	
30/1/2016	7:30	64	65	60	
30/1/2016	8:00	68	67	61	
30/1/2016	8:30	81	83	68	
30/1/2016	9:00	85	86	85	
30/1/2016	9:30	85	86	85	
30/1/2016	10:00	85	86	85	
30/1/2016	10:30	Maintenance			
30/1/2016	11:00	Maintenance			
30/1/2016	11:30	76	79	65	
30/1/2016	12:00	66	68	63	
30/1/2016	12:30	67	66	62	
30/1/2016	13:00	77	79	64	
30/1/2016	13:30	78	79	77	W
30/1/2016	14:00	78	79	77	W
30/1/2016	14:30	78	79	77	W
30/1/2016	15:00	78	79	77	W
30/1/2016	15:30	78	78	77	
30/1/2016	16:00	78	79	78	
30/1/2016	16:30	78	79	78	W
30/1/2016	17:00	78	79	78	W
30/1/2016	17:30	74	79	64	
30/1/2016	18:00	66	67	62	
30/1/2016	18:30	65	67	61	
31/1/2016	7:00	61	62	60	W
31/1/2016	7:30	62	63	61	W
31/1/2016	8:00	62	64	61	W
31/1/2016	8:30	63	64	61	W
31/1/2016	9:00	63	65	61	W
31/1/2016	9:30	65	67	62	W
31/1/2016	10:00	Maintenance			W
31/1/2016	10:30	64	66	61	W
31/1/2016	11:00	65	67	61	W
31/1/2016	11:30	64	65	60	W
31/1/2016	12:00	66	66	60	W
31/1/2016	12:30	67	66	60	W
31/1/2016	13:00	65	66	61	W
31/1/2016	13:30	66	68	62	W
31/1/2016	14:00	66	68	62	W
31/1/2016	14:30	67	68	62	W
31/1/2016	15:00	66	68	62	W
31/1/2016	15:30	66	68	61	W
31/1/2016	16:00	66	68	61	W
31/1/2016	16:30	66	68	61	
31/1/2016	17:00	65	67	61	
31/1/2016	17:30	65	67	61	
31/1/2016	18:00	66	67	61	
31/1/2016	18:30	65	67	61	
1/2/2016	7:00	61	63	56	
1/2/2016	7:30	64	65	59	
1/2/2016	8:00	65	67	61	
1/2/2016	8:30	64	67	61	
1/2/2016	9:00	64	67	61	
1/2/2016	9:30	66	68	61	
1/2/2016	10:00	64	66	60	
1/2/2016	10:30	60	63	56	
1/2/2016	11:00	62	65	56	
1/2/2016	11:30	62	66	56	
1/2/2016	12:00	63	66	57	
1/2/2016	12:30	63	67	57	
1/2/2016	13:00	64	67	56	
1/2/2016	13:30	76	69	57	
1/2/2016	14:00	66	69	57	
1/2/2016	14:30	66	68	58	

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
1/2/2016	15:00	67	69	58	
1/2/2016	15:30	67	69	59	
1/2/2016	16:00	67	69	60	
1/2/2016	16:30	66	69	58	
1/2/2016	17:00	67	69	59	
1/2/2016	17:30	67	70	58	
1/2/2016	18:00	66	69	58	
1/2/2016	18:30	65	68	58	
2/2/2016	7:00	64	65	63	W
2/2/2016	7:30	64	65	63	W
2/2/2016	8:00	64	65	63	W
2/2/2016	8:30	65	67	64	W
2/2/2016	9:00	71	74	63	
2/2/2016	9:30	76	82	63	
2/2/2016	10:00	84	85	83	
2/2/2016	10:30	84	86	82	
2/2/2016	11:00	84	86	83	
2/2/2016	11:30	78	84	70	
2/2/2016	12:00	70	72	67	
2/2/2016	12:30	77	83	68	
2/2/2016	13:00	84	86	83	
2/2/2016	13:30	84	86	83	
2/2/2016	14:00	84	85	83	
2/2/2016	14:30	83	85	82	
2/2/2016	15:00	83	84	82	
2/2/2016	15:30	84	86	83	
2/2/2016	16:00	85	85	83	
2/2/2016	16:30	84	85	82	
2/2/2016	17:00	76	82	67	
2/2/2016	17:30	69	71	67	
2/2/2016	18:00	68	70	66	
2/2/2016	18:30	67	69	66	
3/2/2016	7:00	66	67	65	
3/2/2016	7:30	67	69	65	
3/2/2016	8:00	68	70	66	
3/2/2016	8:30	80	83	68	
3/2/2016	9:00	83	84	82	
3/2/2016	9:30	Maintenance			
3/2/2016	10:00	84	84	83	
3/2/2016	10:30	83	84	83	
3/2/2016	11:00	84	85	83	
3/2/2016	11:30	80	85	75	
3/2/2016	12:00	75	76	75	
3/2/2016	12:30	77	83	68	
3/2/2016	13:00	84	85	83	W
3/2/2016	13:30	85	86	83	W
3/2/2016	14:00	85	86	85	
3/2/2016	14:30	87	89	81	
3/2/2016	15:00	88	89	87	
3/2/2016	15:30	90	92	88	
3/2/2016	16:00	92	93	91	
3/2/2016	16:30	92	93	91	
3/2/2016	17:00	89	93	67	
3/2/2016	17:30	68	70	66	
3/2/2016	18:00	68	70	66	
3/2/2016	18:30	68	69	65	
4/2/2016	7:00	64	62	55	
4/2/2016	7:30	58	59	54	
4/2/2016	8:00	57	58	53	
4/2/2016	8:30	56	57	52	
4/2/2016	9:00	55	57	52	
4/2/2016	9:30	66	57	50	
4/2/2016	10:00	55	55	49	
4/2/2016	10:30	60	54	49	
4/2/2016	11:00	53	55	50	
4/2/2016	11:30	53	55	51	
4/2/2016	12:00	53	55	51	
4/2/2016	12:30	56	56	51	
4/2/2016	13:00	56	57	52	
4/2/2016	13:30	58	59	52	

KTD1a - Centre of Excellence in Paediatrics (Children's Hospital)
Measurement Period: All Days 0700-1900
Measurement Type: Façade Measurement

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
4/2/2016	14:00	64	67	55	
4/2/2016	14:30	63	67	55	
4/2/2016	15:00	65	67	55	
4/2/2016	15:30	64	67	56	
4/2/2016	16:00	64	67	56	
4/2/2016	16:30	65	66	57	
4/2/2016	17:00	63	66	57	
4/2/2016	17:30	63	65	56	
4/2/2016	18:00	61	64	55	
4/2/2016	18:30	62	65	54	
5/2/2016	7:00	59	59	52	
5/2/2016	7:30	59	57	52	
5/2/2016	8:00	59	60	53	
5/2/2016	8:30	59	60	53	
5/2/2016	9:00	61	62	55	
5/2/2016	9:30	59	61	55	
5/2/2016	10:00	65	69	57	
5/2/2016	10:30	65	68	57	
5/2/2016	11:00	66	68	58	
5/2/2016	11:30	66	69	58	
5/2/2016	12:00	66	69	59	
5/2/2016	12:30	66	69	59	W
5/2/2016	13:00	65	68	58	W
5/2/2016	13:30	65	68	56	
5/2/2016	14:00	64	68	56	
5/2/2016	14:30	62	65	55	
5/2/2016	15:00	61	62	55	
5/2/2016	15:30	62	66	53	W
5/2/2016	16:00	63	66	52	W
5/2/2016	16:30	59	60	51	W
5/2/2016	17:00	66	63	51	
5/2/2016	17:30	58	56	50	W
5/2/2016	18:00	60	59	50	
5/2/2016	18:30	64	65	50	
6/2/2016	7:00	61	62	57	
6/2/2016	7:30	64	61	56	
6/2/2016	8:00	58	60	55	
6/2/2016	8:30	59	60	56	
6/2/2016	9:00	59	61	55	
6/2/2016	9:30	60	60	55	
6/2/2016	10:00	66	68	62	
6/2/2016	10:30	66	69	61	W
6/2/2016	11:00	66	68	61	
6/2/2016	11:30	66	69	61	
6/2/2016	12:00	65	67	61	W
6/2/2016	12:30	66	68	61	W
6/2/2016	13:00	66	69	61	W
6/2/2016	13:30	65	69	60	W
6/2/2016	14:00	65	68	60	W
6/2/2016	14:30	66	68	59	W
6/2/2016	15:00	66	69	60	
6/2/2016	15:30	71	69	60	W
6/2/2016	16:00	67	69	59	W
6/2/2016	16:30	67	69	59	
6/2/2016	17:00	65	69	59	
6/2/2016	17:30	67	68	59	
6/2/2016	18:00	65	68	59	W
6/2/2016	18:30	65	67	59	

Note:
W: Period with average wind speed over 5m/s
R: Period with rain

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
21/1/2016	7:00	63	64	63	
21/1/2016	7:30	63	64	63	
21/1/2016	8:00	63	63	62	
21/1/2016	8:30	62	63	62	
21/1/2016	9:00	62	63	62	
21/1/2016	9:30	63	63	62	
21/1/2016	10:00	62	63	62	
21/1/2016	10:30	65	66	64	
21/1/2016	11:00	65	66	64	
21/1/2016	11:30	64	65	63	
21/1/2016	12:00	64	65	63	
21/1/2016	12:30	64	65	64	
21/1/2016	13:00	65	65	64	
21/1/2016	13:30	65	66	64	
21/1/2016	14:00	65	66	64	
21/1/2016	14:30	65	66	64	
21/1/2016	15:00	66	67	64	
21/1/2016	15:30	66	67	64	
21/1/2016	16:00	65	67	64	
21/1/2016	16:30	65	66	64	
21/1/2016	17:00	65	66	64	
21/1/2016	17:30	65	65	64	
21/1/2016	18:00	64	65	63	
21/1/2016	18:30	63	64	63	
22/1/2016	7:00	63	64	63	
22/1/2016	7:30	65	66	63	
22/1/2016	8:00	65	66	64	
22/1/2016	8:30	68	70	65	
22/1/2016	9:00	67	68	65	
22/1/2016	9:30	66	67	65	W
22/1/2016	10:00	65	67	64	W
22/1/2016	10:30	66	68	63	W
22/1/2016	11:00	66	67	65	W
22/1/2016	11:30	64	65	64	
22/1/2016	12:00	64	65	64	
22/1/2016	12:30	67	69	64	
22/1/2016	13:00	67	68	65	R
22/1/2016	13:30	66	68	65	R
22/1/2016	14:00	68	68	66	
22/1/2016	14:30	67	68	66	
22/1/2016	15:00	68	69	67	
22/1/2016	15:30	68	69	66	
22/1/2016	16:00	68	70	66	
22/1/2016	16:30	66	68	64	
22/1/2016	17:00	67	68	65	
22/1/2016	17:30	68	69	66	
22/1/2016	18:00	67	68	66	
22/1/2016	18:30	65	66	65	W
23/1/2016	7:00	63	64	63	
23/1/2016	7:30	66	66	64	
23/1/2016	8:00	67	68	65	
23/1/2016	8:30	66	68	65	
23/1/2016	9:00	67	68	65	
23/1/2016	9:30	68	68	65	
23/1/2016	10:00		Maintenance		W
23/1/2016	10:30	67	68	65	
23/1/2016	11:00	66	67	65	
23/1/2016	11:30	66	67	65	
23/1/2016	12:00	64	66	64	
23/1/2016	12:30	65	66	64	
23/1/2016	13:00	65	66	64	
23/1/2016	13:30	66	67	65	W
23/1/2016	14:00	66	66	65	W
23/1/2016	14:30	65	66	65	W
23/1/2016	15:00	65	66	64	W
23/1/2016	15:30	65	66	65	W
23/1/2016	16:00	66	67	65	W
23/1/2016	16:30	67	69	65	
23/1/2016	17:00	67	68	65	
23/1/2016	17:30	66	67	65	W

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
23/1/2016	18:00	66	67	65	W
23/1/2016	18:30	68	68	65	W
24/1/2016	7:00	64	65	63	W
24/1/2016	7:30	65	67	63	W
24/1/2016	8:00	67	67	63	W
24/1/2016	8:30	67	68	63	W
24/1/2016	9:00	66	68	63	W
24/1/2016	9:30	66	67	63	W
24/1/2016	10:00	67	68	63	W
24/1/2016	10:30	68	69	65	W
24/1/2016	11:00	67	69	65	W
24/1/2016	11:30	66	67	65	W
24/1/2016	12:00	66	67	64	W
24/1/2016	12:30	67	67	64	W
24/1/2016	13:00	64	65	63	W
24/1/2016	13:30	65	66	64	
24/1/2016	14:00	67	68	64	R
24/1/2016	14:30	65	66	64	R
24/1/2016	15:00	64	66	63	
24/1/2016	15:30	65	66	64	
24/1/2016	16:00	64	65	63	
24/1/2016	16:30	64	64	63	
24/1/2016	17:00	64	66	63	
24/1/2016	17:30	64	65	63	
24/1/2016	18:00	64	65	63	W
24/1/2016	18:30	65	66	64	W
24/1/2016	19:00	64	65	63	
25/1/2016	7:30	65	66	64	
25/1/2016	8:00	66	67	65	
25/1/2016	8:30	65	66	64	
25/1/2016	9:00	67	68	64	
25/1/2016	9:30	67	69	64	
25/1/2016	10:00	67	67	64	
25/1/2016	10:30	65	66	63	
25/1/2016	11:00	65	66	63	
25/1/2016	11:30	64	65	63	
25/1/2016	12:00	64	65	63	
25/1/2016	12:30	64	65	63	
25/1/2016	13:00	65	66	63	
25/1/2016	13:30	65	68	63	
25/1/2016	14:00	66	68	63	
25/1/2016	14:30	66	69	64	
25/1/2016	15:00	65	66	63	
25/1/2016	15:30	64	66	63	
25/1/2016	16:00	64	65	63	
25/1/2016	16:30	64	65	63	
25/1/2016	17:00	64	65	63	
25/1/2016	17:30	64	65	64	
25/1/2016	18:00	64	65	64	
25/1/2016	18:30	63	64	63	
26/1/2016	7:00	63	64	62	
26/1/2016	7:30	64	65	63	
26/1/2016	8:00	64	65	63	
26/1/2016	8:30	64	65	63	
26/1/2016	9:00	64	65	63	
26/1/2016	9:30	65	66	64	
26/1/2016	10:00	66	69	64	
26/1/2016	10:30	67	69	65	
26/1/2016	11:00	66	68	65	
26/1/2016	11:30	65	66	64	
26/1/2016	12:00	64	66	63	
26/1/2016	12:30	64	65	63	
26/1/2016	13:00	66	67	64	
26/1/2016	13:30	65	67	64	
26/1/2016	14:00	66	67	64	
26/1/2016	14:30	66	67	65	
26/1/2016	15:00	66	67	65	
26/1/2016	15:30	66	67	65	
26/1/2016	16:00	66	67	65	
26/1/2016	16:30	65	66	65	

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
26/1/2016	17:00	65	66	65	
26/1/2016	17:30	65	67	65	
26/1/2016	18:00	65	66	65	
26/1/2016	18:30	65	65	64	
27/1/2016	7:00	65	66	64	
27/1/2016	7:30	66	67	65	
27/1/2016	8:00	66	67	65	
27/1/2016	8:30	67	68	65	
27/1/2016	9:00	66	67	65	
27/1/2016	9:30		Maintenance		
27/1/2016	10:00	66	67	64	
27/1/2016	10:30	65	66	64	
27/1/2016	11:00	65	66	64	
27/1/2016	11:30	65	66	64	
27/1/2016	12:00	65	66	64	
27/1/2016	12:30	66	67	64	W
27/1/2016	13:00	67	68	66	
27/1/2016	13:30	66	67	65	
27/1/2016	14:00	66	67	65	
27/1/2016	14:30	65	67	64	
27/1/2016	15:00	65	66	64	
27/1/2016	15:30	65	67	64	
27/1/2016	16:00	66	67	64	
27/1/2016	16:30	65	67	64	
27/1/2016	17:00	65	67	64	
27/1/2016	17:30	65	67	64	
27/1/2016	18:00	64	65	63	
27/1/2016	18:30	63	64	63	
28/1/2016	7:00	62	63	62	
28/1/2016	7:30	63	64	62	
28/1/2016	8:00	65	66	63	
28/1/2016	8:30	64	65	63	
28/1/2016	9:00	67	68	64	R
28/1/2016	9:30	69	70	67	R
28/1/2016	10:00	69	71	66	R
28/1/2016	10:30	68	71	65	R
28/1/2016	11:00	67	68	66	
28/1/2016	11:30	66	67	66	
28/1/2016	12:00	66	67	65	
28/1/2016	12:30	67	68	65	
28/1/2016	13:00	68	70	66	R
28/1/2016	13:30	68	70	67	R
28/1/2016	14:00	67	68	66	
28/1/2016	14:30	68	69	66	
28/1/2016	15:00	67	68	66	
28/1/2016	15:30	67	68	66	
28/1/2016	16:00	67	69	66	
28/1/2016	16:30	67	68	66	
28/1/2016	17:00	67	68	66	
28/1/2016	17:30	67	68	66	
28/1/2016	18:00	65	66	65	
28/1/2016	18:30	66	67	65	
29/1/2016	7:00	65	67	64	
29/1/2016	7:30	66	67	65	
29/1/2016	8:00	67	68	66	
29/1/2016	8:30	71	74	68	
29/1/2016	9:00	68	69	67	
29/1/2016	9:30	68	71	67	
29/1/2016	10:00	75	71	66	
29/1/2016	10:30	67	69	65	
29/1/2016	11:00	67	69	65	R
29/1/2016	11:30		Maintenance		R
29/1/2016	12:00	73	66	63	
29/1/2016	12:30	64	65	62	
29/1/2016	13:00	64	66	62	
29/1/2016	13:30	64	66	63	
29/1/2016	14:00	64	66	63	
29/1/2016	14:30	63	64	62	
29/1/2016	15:00	63	64	62	
29/1/2016	15:30	63	64	62	

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
29/1/2016	16:00	62	64	62	
29/1/2016	16:30	62	64	61	
29/1/2016	17:00	62	63	61	
29/1/2016	17:30	62	63	61	
29/1/2016	18:00	61	63	60	
29/1/2016	18:30	61	62	60	
30/1/2016	7:00	59	60	58	
30/1/2016	7:30	62	63	59	
30/1/2016	8:00	60	62	59	
30/1/2016	8:30	62	63	61	
30/1/2016	9:00	61	63	60	
30/1/2016	9:30		Maintenance		
30/1/2016	10:00		Maintenance		
30/1/2016	10:30	61	62	60	
30/1/2016	11:00	63	64	62	
30/1/2016	11:30	63	65	61	
30/1/2016	12:00	61	62	60	
30/1/2016	12:30	60	62	59	
30/1/2016	13:00	62	64	60	
30/1/2016	13:30	64	66	62	W
30/1/2016	14:00	64	66	62	W
30/1/2016	14:30	65	66	62	W
30/1/2016	15:00	65	67	63	W
30/1/2016	15:30	64	65	62	
30/1/2016	16:00	64	66	62	
30/1/2016	16:30	62	64	61	W
30/1/2016	17:00	61	62	60	W
30/1/2016	17:30	61	62	60	
30/1/2016	18:00	60	62	60	
30/1/2016	18:30	60	61	59	
31/1/2016	7:00	66	69	58	W
31/1/2016	7:30	65	68	58	W
31/1/2016	8:00	68	71	59	W
31/1/2016	8:30	69	72	59	W
31/1/2016	9:00	68	68	59	W
31/1/2016	9:30	70	73	60	W
31/1/2016	10:00	71	74	61	W
31/1/2016	10:30	73	77	61	W
31/1/2016	11:00	69	71	60	W
31/1/2016	11:30	62	64	60	W
31/1/2016	12:00	61	63	59	W
31/1/2016	12:30	60	61	59	W
31/1/2016	13:00	61	63	60	W
31/1/2016	13:30	63	65	59	W
31/1/2016	14:00	61	62	59	W
31/1/2016	14:30	65	67	60	W
31/1/2016	15:00	68	71	61	W
31/1/2016	15:30	65	67	60	W
31/1/2016	16:00	62	64	59	W
31/1/2016	16:30	61	62	59	
31/1/2016	17:00	60	61	59	
31/1/2016	17:30	60	62	59	
31/1/2016	18:00	61	62	59	
31/1/2016	18:30	60	61	58	
1/2/2016	7:00	61	62	58	
1/2/2016	7:30	61	62	59	
1/2/2016	8:00	65	63	59	
1/2/2016	8:30	62	63	60	
1/2/2016	9:00	62	63	60	
1/2/2016	9:30	68	64	60	
1/2/2016	10:00	62	63	60	
1/2/2016	10:30	62	64	61	
1/2/2016	11:00	63	64	60	
1/2/2016	11:30	61	62	60	
1/2/2016	12:00	60	61	58	
1/2/2016	12:30	60	61	58	
1/2/2016	13:00	61	62	59	
1/2/2016	13:30	61	62	60	
1/2/2016	14:00	60	62	59	
1/2/2016	14:30	62	63	60	

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
1/2/2016	15:00	61	62	60	
1/2/2016	15:30	60	62	60	
1/2/2016	16:00	61	62	60	
1/2/2016	16:30	60	61	59	
1/2/2016	17:00	60	61	59	
1/2/2016	17:30	60	61	59	
1/2/2016	18:00	60	61	59	
1/2/2016	18:30	59	60	58	
2/2/2016	7:00	58	60	56	W
2/2/2016	7:30	61	63	58	W
2/2/2016	8:00	62	63	60	W
2/2/2016	8:30	62	64	61	W
2/2/2016	9:00	62	63	62	
2/2/2016	9:30	62	63	61	
2/2/2016	10:00	62	64	61	
2/2/2016	10:30	62	63	60	
2/2/2016	11:00	61	62	60	
2/2/2016	11:30	60	62	59	
2/2/2016	12:00	60	62	59	
2/2/2016	12:30	61	62	59	
2/2/2016	13:00	62	64	61	
2/2/2016	13:30	62	64	61	
2/2/2016	14:00	62	63	60	
2/2/2016	14:30	62	63	60	
2/2/2016	15:00	61	63	60	
2/2/2016	15:30	62	63	60	
2/2/2016	16:00	61	62	60	
2/2/2016	16:30	60	62	59	
2/2/2016	17:00	60	62	59	
2/2/2016	17:30	60	62	59	
2/2/2016	18:00	60	61	58	
2/2/2016	18:30	59	61	58	
3/2/2016	7:00	58	59	57	
3/2/2016	7:30	59	61	58	
3/2/2016	8:00	60	61	59	
3/2/2016	8:30	60	62	59	
3/2/2016	9:00	61	62	59	
3/2/2016	9:30	60	62	59	
3/2/2016	10:00	60	61	59	
3/2/2016	10:30	61	62	60	
3/2/2016	11:00	60	62	59	
3/2/2016	11:30	60	61	59	
3/2/2016	12:00	60	61	59	
3/2/2016	12:30	60	62	59	
3/2/2016	13:00	60	62	59	W
3/2/2016	13:30	60	62	59	W
3/2/2016	14:00	61	62	60	
3/2/2016	14:30	61	62	60	
3/2/2016	15:00	61	62	59	
3/2/2016	15:30	60	62	59	
3/2/2016	16:00	60	61	59	
3/2/2016	16:30	60	61	59	
3/2/2016	17:00	60	61	59	
3/2/2016	17:30	60	62	59	
3/2/2016	18:00	56	57	55	
3/2/2016	18:30	57	58	56	
4/2/2016	7:00	53	54	51	
4/2/2016	7:30	53	54	51	
4/2/2016	8:00	54	56	51	
4/2/2016	8:30	55	57	52	
4/2/2016	9:00	54	56	52	
4/2/2016	9:30	55	57	53	
4/2/2016	10:00	56	58	55	
4/2/2016	10:30	58	60	57	
4/2/2016	11:00	58	60	57	
4/2/2016	11:30	59	60	57	
4/2/2016	12:00	59	60	57	
4/2/2016	12:30	59	60	58	
4/2/2016	13:00	58	60	57	
4/2/2016	13:30	57	59	56	

KTD2a - G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
4/2/2016	14:00	57	58	56	
4/2/2016	14:30	56	57	55	
4/2/2016	15:00	56	58	55	
4/2/2016	15:30	56	58	55	
4/2/2016	16:00	56	58	55	
4/2/2016	16:30	57	58	56	
4/2/2016	17:00	56	58	55	
4/2/2016	17:30	57	58	56	
4/2/2016	18:00	57	59	56	
4/2/2016	18:30	56	58	55	
5/2/2016	7:00	59	60	56	
5/2/2016	7:30	60	61	58	
5/2/2016	8:00	60	61	59	
5/2/2016	8:30	61	62	59	
5/2/2016	9:00	61	63	60	
5/2/2016	9:30	61	62	59	
5/2/2016	10:00	62	64	60	
5/2/2016	10:30	61	62	59	
5/2/2016	11:00	62	63	59	
5/2/2016	11:30	61	63	59	
5/2/2016	12:00	60	62	58	
5/2/2016	12:30	61	63	59	W
5/2/2016	13:00	61	62	59	W
5/2/2016	13:30	61	62	59	
5/2/2016	14:00	61	63	59	
5/2/2016	14:30	63	65	60	
5/2/2016	15:00	61	63	60	
5/2/2016	15:30	63	64	60	W
5/2/2016	16:00	62	65	60	W
5/2/2016	16:30	63	65	60	W
5/2/2016	17:00	61	64	59	
5/2/2016	17:30	62	63	59	W
5/2/2016	18:00	60	62	59	
5/2/2016	18:30	60	61	58	
6/2/2016	7:00	56	57	54	
6/2/2016	7:30	56	56	53	
6/2/2016	8:00	55	56	53	
6/2/2016	8:30	53	54	53	
6/2/2016	9:00	53	55	52	
6/2/2016	9:30	54	55	52	
6/2/2016	10:00	54	55	52	
6/2/2016	10:30	54	55	52	W
6/2/2016	11:00	53	54	52	
6/2/2016	11:30	53	55	52	
6/2/2016	12:00	54	55	52	W
6/2/2016	12:30	55	55	53	W
6/2/2016	13:00	55	56	54	W
6/2/2016	13:30	58	60	55	W
6/2/2016	14:00	59	61	58	W
6/2/2016	14:30	59	60	58	W
6/2/2016	15:00	58	59	57	
6/2/2016	15:30	58	59	56	W
6/2/2016	16:00	57	58	56	W
6/2/2016	16:30	57	58	56	
6/2/2016	17:00	57	59	56	
6/2/2016	17:30	58	59	56	
6/2/2016	18:00	57	58	56	W
6/2/2016	18:30	57	58	56	

Note:
W: Period with average wind speed over 5m/s
R: Period with rain

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
21/1/2016	7:00	64	68	53	
21/1/2016	7:30	64	68	54	
21/1/2016	8:00	65	68	54	
21/1/2016	8:30	66	68	55	
21/1/2016	9:00	64	68	56	
21/1/2016	9:30	66	70	55	
21/1/2016	10:00	67	71	56	
21/1/2016	10:30	68	72	60	
21/1/2016	11:00	66	70	58	
21/1/2016	11:30	67	71	58	
21/1/2016	12:00	69	72	58	
21/1/2016	12:30	69	72	58	
21/1/2016	13:00	70	73	59	
21/1/2016	13:30	68	71	59	
21/1/2016	14:00	68	71	57	
21/1/2016	14:30	65	69	56	
21/1/2016	15:00	66	70	55	
21/1/2016	15:30	65	69	55	
21/1/2016	16:00	68	71	55	
21/1/2016	16:30	68	70	55	
21/1/2016	17:00	66	70	55	
21/1/2016	17:30	65	69	55	
21/1/2016	18:00	66	70	54	
21/1/2016	18:30	65	68	60	
22/1/2016	7:00	58	60	48	
22/1/2016	7:30	55	56	49	
22/1/2016	8:00	59	64	49	
22/1/2016	8:30	61	64	51	
22/1/2016	9:00	61	63	50	
22/1/2016	9:30	63	67	51	W
22/1/2016	10:00	63	66	53	W
22/1/2016	10:30	63	67	52	W
22/1/2016	11:00	64	68	51	W
22/1/2016	11:30	63	67	52	
22/1/2016	12:00	64	69	54	
22/1/2016	12:30	65	69	57	
22/1/2016	13:00	65	69	52	R
22/1/2016	13:30	65	69	52	R
22/1/2016	14:00	65	69	53	
22/1/2016	14:30	67	71	53	
22/1/2016	15:00	66	70	53	
22/1/2016	15:30	66	70	53	
22/1/2016	16:00	65	69	53	
22/1/2016	16:30	66	69	53	
22/1/2016	17:00	66	70	53	
22/1/2016	17:30	64	69	53	
22/1/2016	18:00	65	69	52	
22/1/2016	18:30	64	68	52	W
23/1/2016	7:00	67	69	59	
23/1/2016	7:30	67	69	59	
23/1/2016	8:00	64	68	58	
23/1/2016	8:30	64	66	58	
23/1/2016	9:00	63	65	57	
23/1/2016	9:30	58	60	48	
23/1/2016	10:00	58	58	48	W
23/1/2016	10:30	59	55	45	
23/1/2016	11:00	55	55	45	
23/1/2016	11:30	61	63	50	
23/1/2016	12:00	59	63	50	
23/1/2016	12:30	60	63	51	
23/1/2016	13:00	61	64	50	
23/1/2016	13:30	59	62	48	W
23/1/2016	14:00	62	66	51	W
23/1/2016	14:30	62	65	51	W
23/1/2016	15:00	62	66	51	W
23/1/2016	15:30	62	67	51	W
23/1/2016	16:00	62	66	50	W
23/1/2016	16:30	62	66	53	
23/1/2016	17:00	60	65	50	
23/1/2016	17:30	61	66	50	W

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
23/1/2016	18:00	62	65	51	W
23/1/2016	18:30	58	62	50	W
24/1/2016	7:00	52	52	47	W
24/1/2016	7:30	55	56	48	W
24/1/2016	8:00	55	52	48	W
24/1/2016	8:30	56	55	48	W
24/1/2016	9:00	57	58	49	W
24/1/2016	9:30	57	58	50	W
24/1/2016	10:00	58	61	51	W
24/1/2016	10:30	59	62	50	W
24/1/2016	11:00	60	64	51	W
24/1/2016	11:30	61	66	51	W
24/1/2016	12:00	61	65	50	W
24/1/2016	12:30	62	67	51	W
24/1/2016	13:00	63	67	51	W
24/1/2016	13:30	65	68	51	
24/1/2016	14:00	63	67	51	R
24/1/2016	14:30	65	68	52	R
24/1/2016	15:00	66	68	54	
24/1/2016	15:30	65	68	54	
24/1/2016	16:00	64	67	55	
24/1/2016	16:30	64	67	54	
24/1/2016	17:00	65	68	53	
24/1/2016	17:30	63	67	52	
24/1/2016	18:00	63	67	51	W
24/1/2016	18:30	62	66	51	W
25/1/2016	7:00	63	67	51	
25/1/2016	7:30	64	68	51	
25/1/2016	8:00	62	66	51	
25/1/2016	8:30	62	66	51	
25/1/2016	9:00	64	68	51	
25/1/2016	9:30	63	67	51	
25/1/2016	10:00	62	66	52	
25/1/2016	10:30	63	66	53	
25/1/2016	11:00	63	66	52	
25/1/2016	11:30	67	70	55	
25/1/2016	12:00	75	75	59	
25/1/2016	12:30	70	71	60	
25/1/2016	13:00	66	70	55	
25/1/2016	13:30	63	68	53	
25/1/2016	14:00	63	66	56	
25/1/2016	14:30	59	56	50	
25/1/2016	15:00	62	57	46	
25/1/2016	15:30	51	50	47	
25/1/2016	16:00	63	62	47	
25/1/2016	16:30	63	67	52	
25/1/2016	17:00	63	67	56	
25/1/2016	17:30	59	62	49	
25/1/2016	18:00	58	61	49	
25/1/2016	18:30	58	59	50	
26/1/2016	7:00	62	64	59	
26/1/2016	7:30	61	63	56	
26/1/2016	8:00	63	66	57	
26/1/2016	8:30	63	66	57	
26/1/2016	9:00	64	66	60	
26/1/2016	9:30	64	65	61	
26/1/2016	10:00	62	65	53	
26/1/2016	10:30	54	54	53	
26/1/2016	11:00	54	54	53	
26/1/2016	11:30	60	63	53	
26/1/2016	12:00	59	63	54	
26/1/2016	12:30	61	65	55	
26/1/2016	13:00	65	68	56	
26/1/2016	13:30	61	64	56	
26/1/2016	14:00	63	66	56	
26/1/2016	14:30	64	66	55	
26/1/2016	15:00	61	64	55	
26/1/2016	15:30	60	63	55	
26/1/2016	16:00	61	64	55	
26/1/2016	16:30	60	62	54	

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
26/1/2016	17:00	59	62	54	
26/1/2016	17:30	60	63	55	
26/1/2016	18:00	63	64	55	
26/1/2016	18:30	60	64	56	
27/1/2016	7:00	62	64	57	
27/1/2016	7:30	62	64	57	
27/1/2016	8:00	64	66	60	
27/1/2016	8:30	61	64	56	
27/1/2016	9:00	63	65	57	
27/1/2016	9:30	57	56	55	
27/1/2016	10:00	56	56	54	
27/1/2016	10:30	56	57	55	
27/1/2016	11:00	57	56	54	
27/1/2016	11:30	61	63	54	
27/1/2016	12:00	63	65	59	
27/1/2016	12:30	60	62	56	W
27/1/2016	13:00	65	70	58	
27/1/2016	13:30	61	65	56	
27/1/2016	14:00	62	65	55	
27/1/2016	14:30	62	64	55	
27/1/2016	15:00	60	63	55	
27/1/2016	15:30	59	62	55	
27/1/2016	16:00	61	63	55	
27/1/2016	16:30	60	62	54	
27/1/2016	17:00	60	62	54	
27/1/2016	17:30	60	64	55	
27/1/2016	18:00	62	65	55	
27/1/2016	18:30	60	62	55	
28/1/2016	7:00	65	68	57	
28/1/2016	7:30	61	65	54	
28/1/2016	8:00	65	67	59	
28/1/2016	8:30	64	66	62	
28/1/2016	9:00	66	65	63	R
28/1/2016	9:30	62	64	59	R
28/1/2016	10:00	56	56	53	R
28/1/2016	10:30	55	55	53	R
28/1/2016	11:00	56	55	53	
28/1/2016	11:30	61	64	54	
28/1/2016	12:00	61	64	54	
28/1/2016	12:30	62	65	56	
28/1/2016	13:00	61	64	55	R
28/1/2016	13:30	60	65	55	R
28/1/2016	14:00	63	66	54	
28/1/2016	14:30	61	64	54	
28/1/2016	15:00	61	65	54	
28/1/2016	15:30	60	63	54	
28/1/2016	16:00	61	64	54	
28/1/2016	16:30	61	65	53	
28/1/2016	17:00	60	62	53	
28/1/2016	17:30	62	64	54	
28/1/2016	18:00	60	61	53	
28/1/2016	18:30	59	61	53	
29/1/2016	7:00	62	64	56	
29/1/2016	7:30	64	66	58	
29/1/2016	8:00	63	66	58	
29/1/2016	8:30	66	64	55	
29/1/2016	9:00	62	62	59	
29/1/2016	9:30	65	61	46	
29/1/2016	10:00	61	64	54	
29/1/2016	10:30	68	71	56	
29/1/2016	11:00	67	70	55	R
29/1/2016	11:30	69	72	55	R
29/1/2016	12:00	71	73	58	
29/1/2016	12:30	Maintenance			
29/1/2016	13:00	68	71	62	
29/1/2016	13:30	69	72	62	
29/1/2016	14:00	70	73	64	
29/1/2016	14:30	69	72	62	
29/1/2016	15:00	69	72	62	
29/1/2016	15:30	68	71	61	

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
29/1/2016	16:00	68	71	61	
29/1/2016	16:30	67	71	62	
29/1/2016	17:00	66	69	60	
29/1/2016	17:30	68	68	59	
29/1/2016	18:00	65	68	59	
29/1/2016	18:30	65	68	58	
30/1/2016	7:00	66	68	62	
30/1/2016	7:30	64	67	56	
30/1/2016	8:00	62	66	57	
30/1/2016	8:30	63	66	58	
30/1/2016	9:00	67	68	60	
30/1/2016	9:30	79	85	61	
30/1/2016	10:00	65	69	60	
30/1/2016	10:30	66	69	59	
30/1/2016	11:00	66	68	61	
30/1/2016	11:30	64	67	60	
30/1/2016	12:00	66	69	58	
30/1/2016	12:30	63	67	57	
30/1/2016	13:00	65	68	59	
30/1/2016	13:30	66	69	59	W
30/1/2016	14:00	66	70	60	W
30/1/2016	14:30	71	71	62	W
30/1/2016	15:00	67	70	61	W
30/1/2016	15:30	66	69	61	
30/1/2016	16:00	66	69	60	
30/1/2016	16:30	66	69	60	W
30/1/2016	17:00	65	68	58	W
30/1/2016	17:30	64	68	59	
30/1/2016	18:00	64	68	58	
30/1/2016	18:30	64	67	56	
31/1/2016	7:00	61	63	55	W
31/1/2016	7:30	60	63	55	W
31/1/2016	8:00	60	63	55	W
31/1/2016	8:30	61	64	56	W
31/1/2016	9:00	63	66	56	W
31/1/2016	9:30	63	67	57	W
31/1/2016	10:00	64	67	56	W
31/1/2016	10:30	63	66	56	W
31/1/2016	11:00	65	68	57	W
31/1/2016	11:30	63	66	55	W
31/1/2016	12:00	66	67	55	W
31/1/2016	12:30	63	66	56	W
31/1/2016	13:00	63	66	56	W
31/1/2016	13:30	63	67	56	W
31/1/2016	14:00	64	67	56	W
31/1/2016	14:30	64	68	56	W
31/1/2016	15:00	66	70	57	W
31/1/2016	15:30	66	70	57	W
31/1/2016	16:00	64	67	56	W
31/1/2016	16:30	64	68	56	
31/1/2016	17:00	63	66	55	
31/1/2016	17:30	63	66	55	
31/1/2016	18:00	63	66	55	
31/1/2016	18:30	63	66	54	
1/2/2016	7:00	60	63	55	
1/2/2016	7:30	62	66	56	
1/2/2016	8:00	64	68	56	
1/2/2016	8:30	64	68	59	
1/2/2016	9:00	65	68	59	
1/2/2016	9:30	65	68	60	
1/2/2016	10:00	Maintenance			
1/2/2016	10:30	69	73	61	
1/2/2016	11:00	69	72	61	
1/2/2016	11:30	67	70	62	
1/2/2016	12:00	68	70	60	
1/2/2016	12:30	66	69	59	
1/2/2016	13:00	67	70	60	
1/2/2016	13:30	67	71	61	
1/2/2016	14:00	66	69	62	
1/2/2016	14:30	69	71	62	

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
1/2/2016	15:00	66	69	61	
1/2/2016	15:30	66	69	61	
1/2/2016	16:00	67	70	61	
1/2/2016	16:30	68	71	61	
1/2/2016	17:00	68	72	60	
1/2/2016	17:30	64	68	60	
1/2/2016	18:00	64	67	59	
1/2/2016	18:30	64	66	57	
2/2/2016	7:00	62	65	56	W
2/2/2016	7:30	62	66	57	W
2/2/2016	8:00	64	68	57	W
2/2/2016	8:30	66	70	59	W
2/2/2016	9:00	66	69	60	
2/2/2016	9:30	67	70	60	
2/2/2016	10:00	68	71	61	
2/2/2016	10:30	67	70	61	
2/2/2016	11:00	66	69	61	
2/2/2016	11:30	66	68	59	
2/2/2016	12:00	66	69	59	
2/2/2016	12:30	65	68	58	
2/2/2016	13:00	65	68	60	
2/2/2016	13:30	66	69	60	
2/2/2016	14:00	65	68	60	
2/2/2016	14:30	65	68	60	
2/2/2016	15:00	65	68	59	
2/2/2016	15:30	64	67	59	
2/2/2016	16:00	64	67	58	
2/2/2016	16:30	64	67	59	
2/2/2016	17:00	64	67	58	
2/2/2016	17:30	64	66	58	
2/2/2016	18:00	63	66	58	
2/2/2016	18:30	61	64	55	
3/2/2016	7:00	60	62	55	
3/2/2016	7:30	62	65	56	
3/2/2016	8:00	63	67	56	
3/2/2016	8:30	63	67	58	
3/2/2016	9:00	63	67	58	
3/2/2016	9:30	65	68	60	
3/2/2016	10:00	65	69	60	
3/2/2016	10:30	66	69	61	
3/2/2016	11:00	65	68	60	
3/2/2016	11:30	65	68	59	
3/2/2016	12:00	65	68	58	
3/2/2016	12:30	64	67	58	
3/2/2016	13:00	64	67	60	W
3/2/2016	13:30	66	69	59	W
3/2/2016	14:00	65	68	60	
3/2/2016	14:30	65	68	60	
3/2/2016	15:00	65	68	61	
3/2/2016	15:30	65	68	60	
3/2/2016	16:00	64	67	59	
3/2/2016	16:30	64	67	60	
3/2/2016	17:00	65	68	59	
3/2/2016	17:30	65	68	59	
3/2/2016	18:00	64	68	59	
3/2/2016	18:30	63	67	57	
4/2/2016	7:00	57	62	51	
4/2/2016	7:30	60	63	49	
4/2/2016	8:00	60	63	47	
4/2/2016	8:30	55	57	46	
4/2/2016	9:00	52	51	46	
4/2/2016	9:30	54	54	47	
4/2/2016	10:00	56	59	47	
4/2/2016	10:30	57	58	48	
4/2/2016	11:00	58	61	48	
4/2/2016	11:30	61	65	50	
4/2/2016	12:00	63	65	57	
4/2/2016	12:30	62	65	56	
4/2/2016	13:00	63	66	59	
4/2/2016	13:30	63	65	55	

KER1a - Site Boundary ay Cheung Yip Street
Measurement Period: All Days 0700-1900
Measurement Type: Free Field Measurement (+3 dB(A) correction made)

Data	Start Time	Leq(30mins) dB(A)	L10 dB(A)	L90 dB(A)	Remarks
4/2/2016	14:00	64	65	58	
4/2/2016	14:30	57	59	53	
4/2/2016	15:00	56	56	53	
4/2/2016	15:30	53	54	52	
4/2/2016	16:00	57	56	52	
4/2/2016	16:30	62	65	52	
4/2/2016	17:00	63	65	57	
4/2/2016	17:30	66	69	64	
4/2/2016	18:00	65	69	61	
4/2/2016	18:30	64	65	61	
5/2/2016	7:00	60	62	56	
5/2/2016	7:30	62	64	56	
5/2/2016	8:00	62	66	55	
5/2/2016	8:30	65	67	61	
5/2/2016	9:00	61	64	55	
5/2/2016	9:30	62	64	55	
5/2/2016	10:00	55	55	52	
5/2/2016	10:30	54	54	52	
5/2/2016	11:00	53	53	52	
5/2/2016	11:30	62	64	53	
5/2/2016	12:00	60	62	54	
5/2/2016	12:30	60	64	54	W
5/2/2016	13:00	65	67	61	W
5/2/2016	13:30	61	63	57	
5/2/2016	14:00	62	65	57	
5/2/2016	14:30	61	64	57	
5/2/2016	15:00	62	64	57	
5/2/2016	15:30	60	62	56	W
5/2/2016	16:00	61	64	56	W
5/2/2016	16:30	61	62	55	W
5/2/2016	17:00	59	62	55	
5/2/2016	17:30	60	62	55	W
5/2/2016	18:00	62	63	56	
5/2/2016	18:30	68	63	61	
6/2/2016	7:00	64	66	56	
6/2/2016	7:30	64	67	55	
6/2/2016	8:00	66	69	60	
6/2/2016	8:30	64	67	61	
6/2/2016	9:00	64	67	57	
6/2/2016	9:30	57	59	54	
6/2/2016	10:00	55	54	53	
6/2/2016	10:30	62	63	53	W
6/2/2016	11:00	60	62	53	
6/2/2016	11:30	62	63	54	
6/2/2016	12:00	64	65	60	W
6/2/2016	12:30	64	65	62	W
6/2/2016	13:00	67	69	65	W
6/2/2016	13:30	67	68	65	W
6/2/2016	14:00	63	67	55	W
6/2/2016	14:30	63	66	55	W
6/2/2016	15:00	63	66	55	
6/2/2016	15:30	63	66	57	W
6/2/2016	16:00	64	67	55	W
6/2/2016	16:30	63	67	54	
6/2/2016	17:00	64	67	55	
6/2/2016	17:30	64	67	56	
6/2/2016	18:00	64	67	54	W
6/2/2016	18:30	63	64	54	

Note:
W: Period with average wind speed over 5m/s
R: Period with rain

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Appendix F

Weather and Meteorological Conditions during Baseline Monitoring Period

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Date	Mean Pressure (hPa)	Air Temperature			Mean Relative Humidity (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)		
January 2016						
20	1019.6	16.8	15.5	14.8	90	3.3
21	1017.7	17.1	16.1	15.1	95	0.1
22	1018.9	16.2	14.1	10.3	92	12.9
23	1027.1	10.4	8.5	7	70	0.5
24	1034.6	7.1	4.9	3.1	61	4
25	1032.6	10.8	7.4	4.3	46	0
26	1027.1	13.5	10.4	8.1	59	Trace
27	1022.7	15.3	13	9.8	92	3.5
28	1018.2	17.4	16.1	14.8	98	42.5
29	1017.9	17.4	16.6	15.9	96	32.8
30	1020	19.9	17.6	16.2	88	0
31	1019.9	16.2	15.7	15.3	86	0.3
February 2016						
1	1022.2	15.6	12.4	10.7	93	11.3
2	1024.4	11.2	10.4	9.4	79	Trace
3	1023.6	14.3	12.5	10.3	77	Trace
4	1021.8	18.8	15.2	13.3	76	0
5	1021.2	18.6	14.8	12.3	66	0
6	1024.9	17.4	13.6	11.2	39	0

Source: Hong Kong Observatory – Hong Kong Observatory

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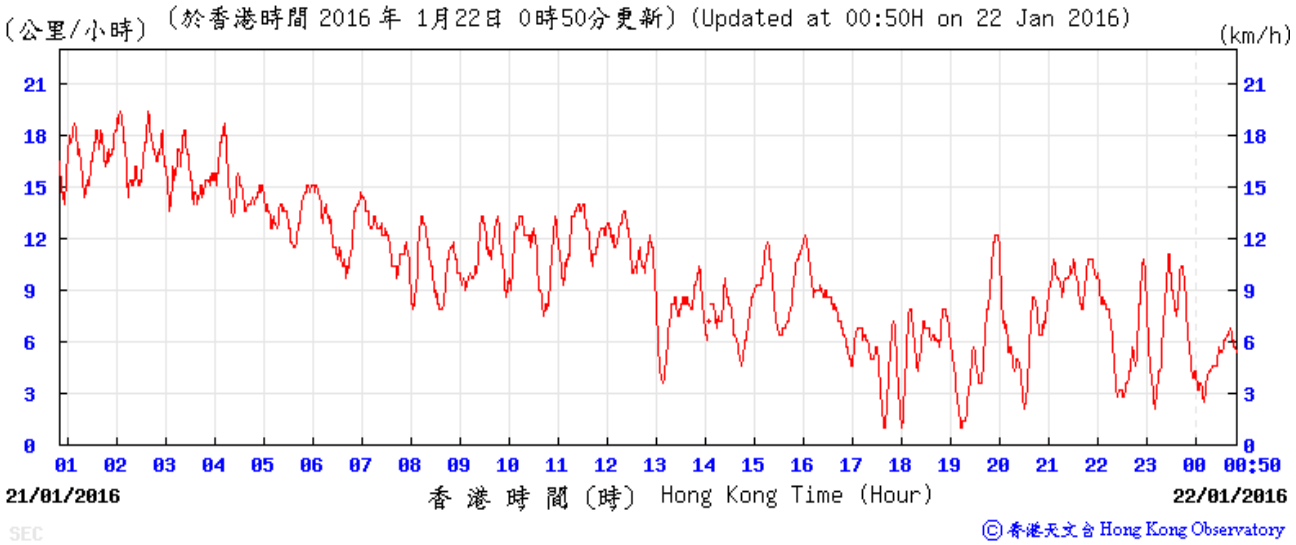
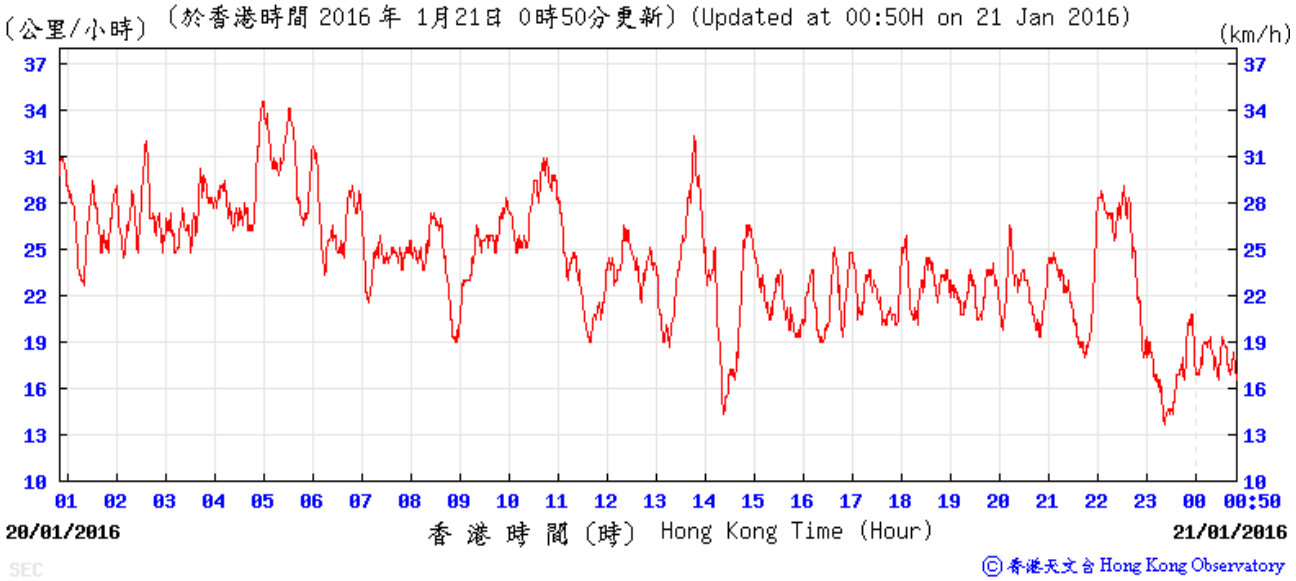
Wind Speed and Wind Direction Data by Hong Kong Observatory – **Kai Tak**

Elevation of station: 3m above mean sea level
Elevation of Anemometer: 16m above mean sea level





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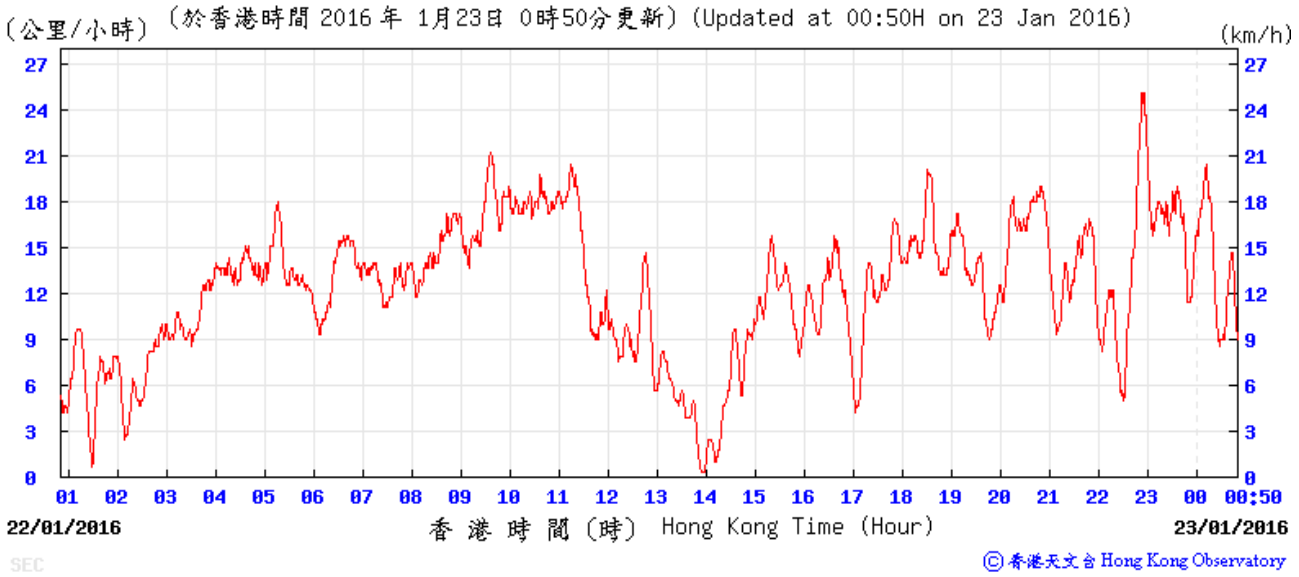

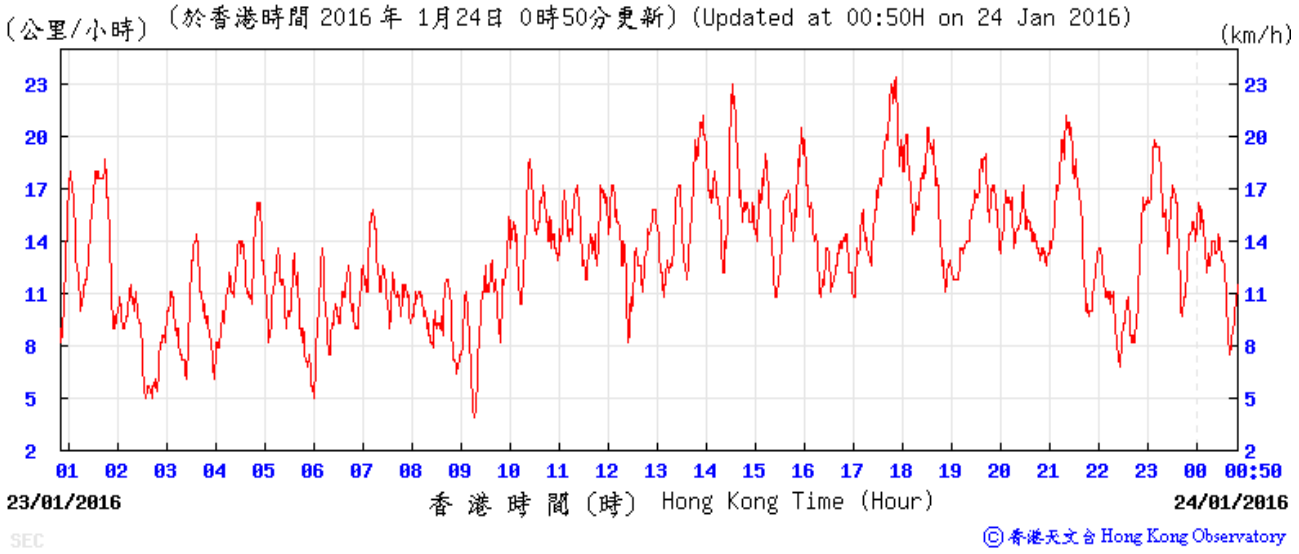

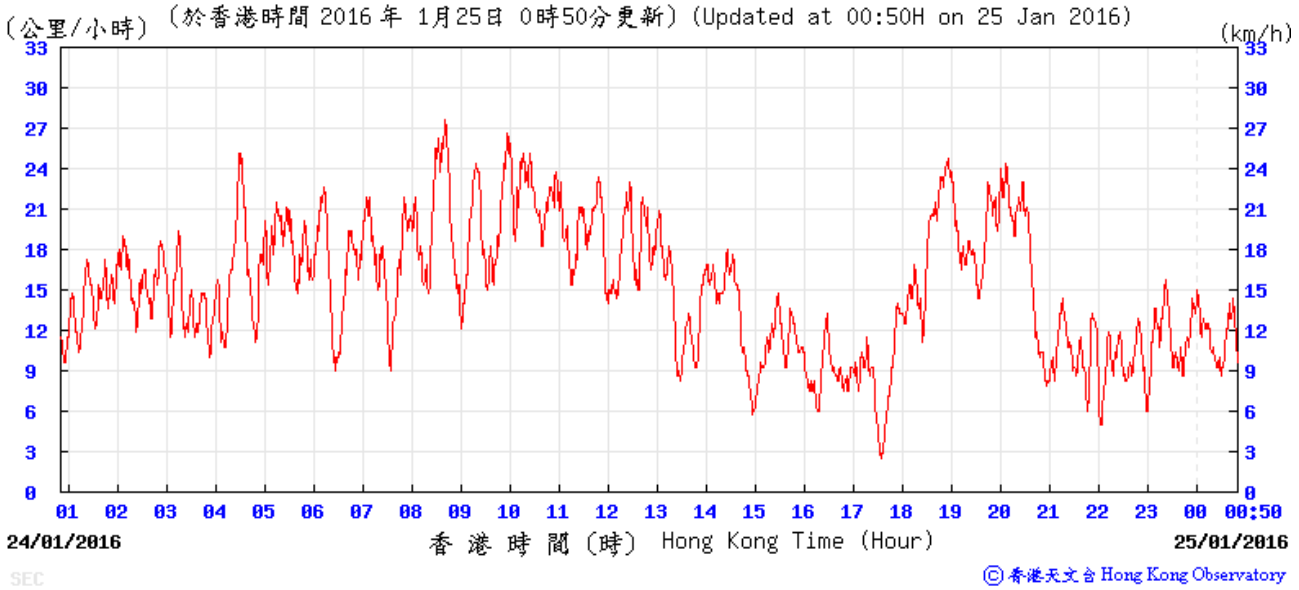

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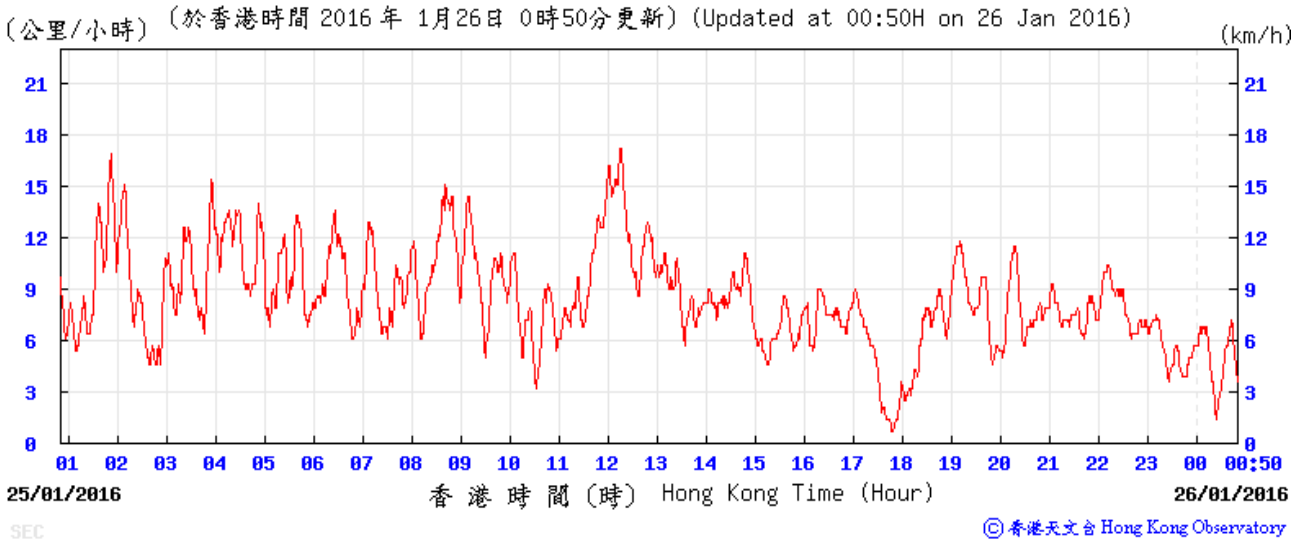

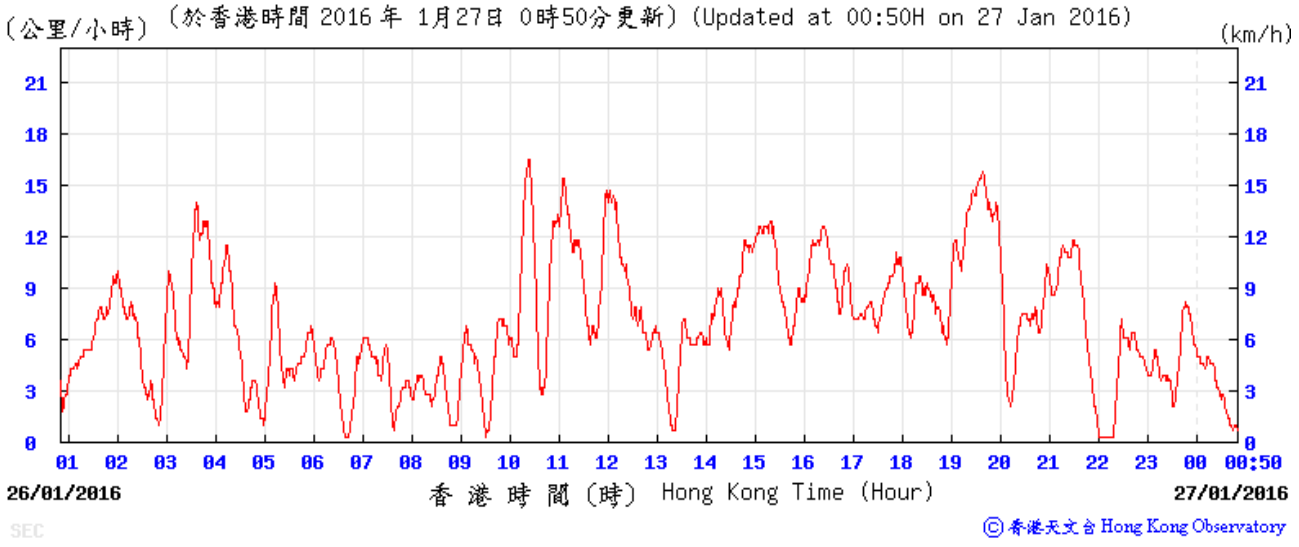

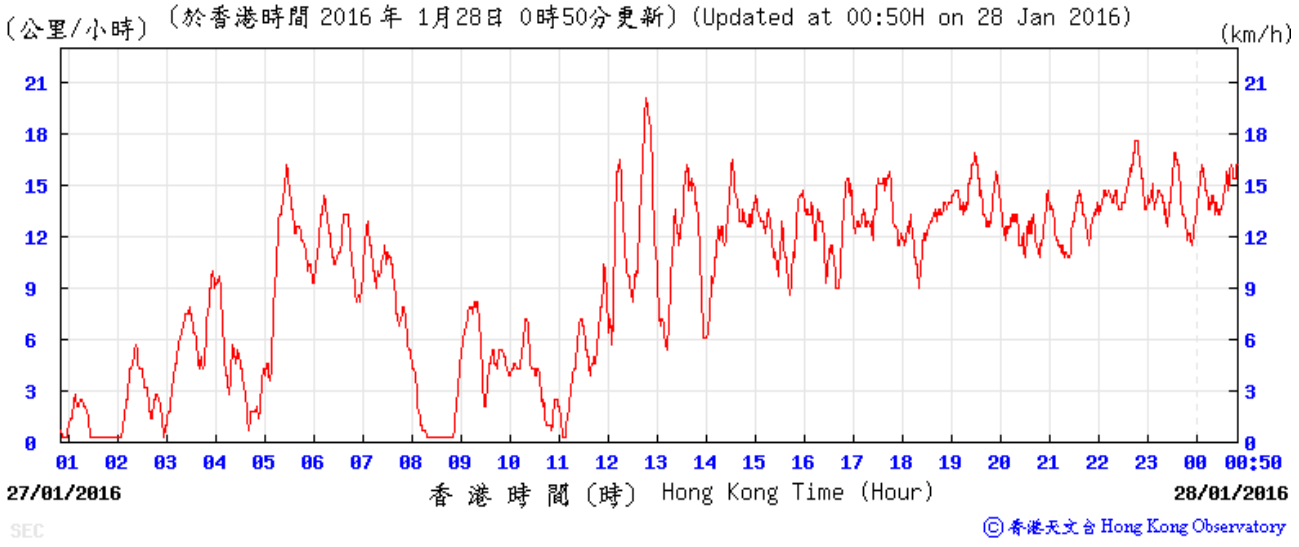

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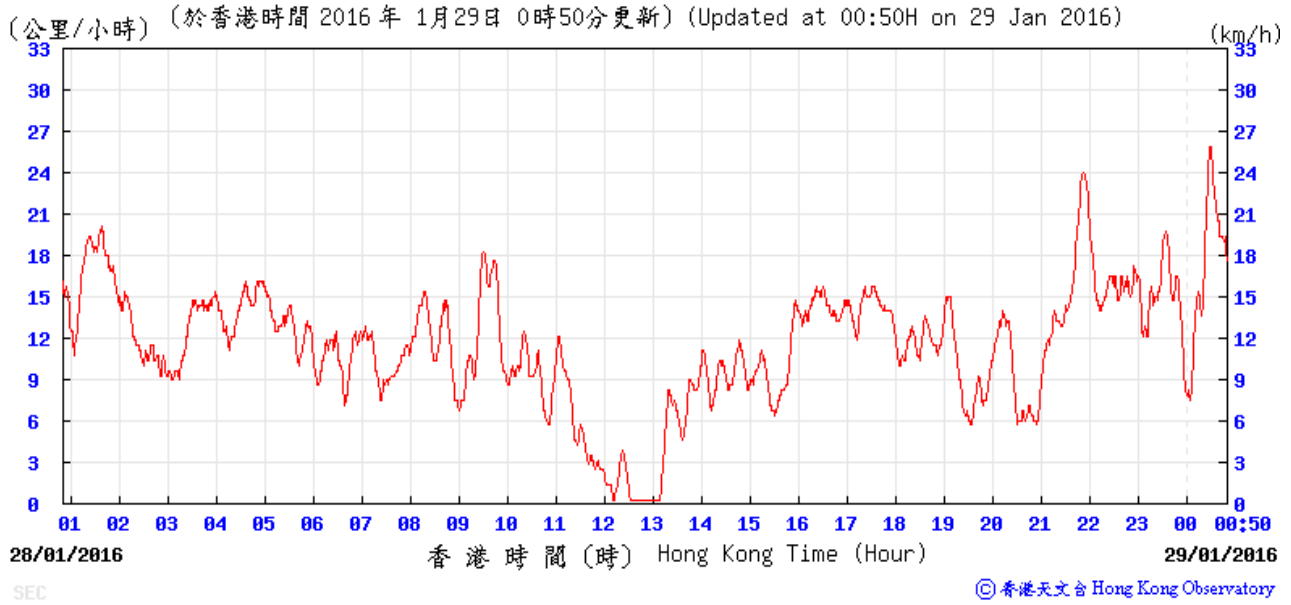

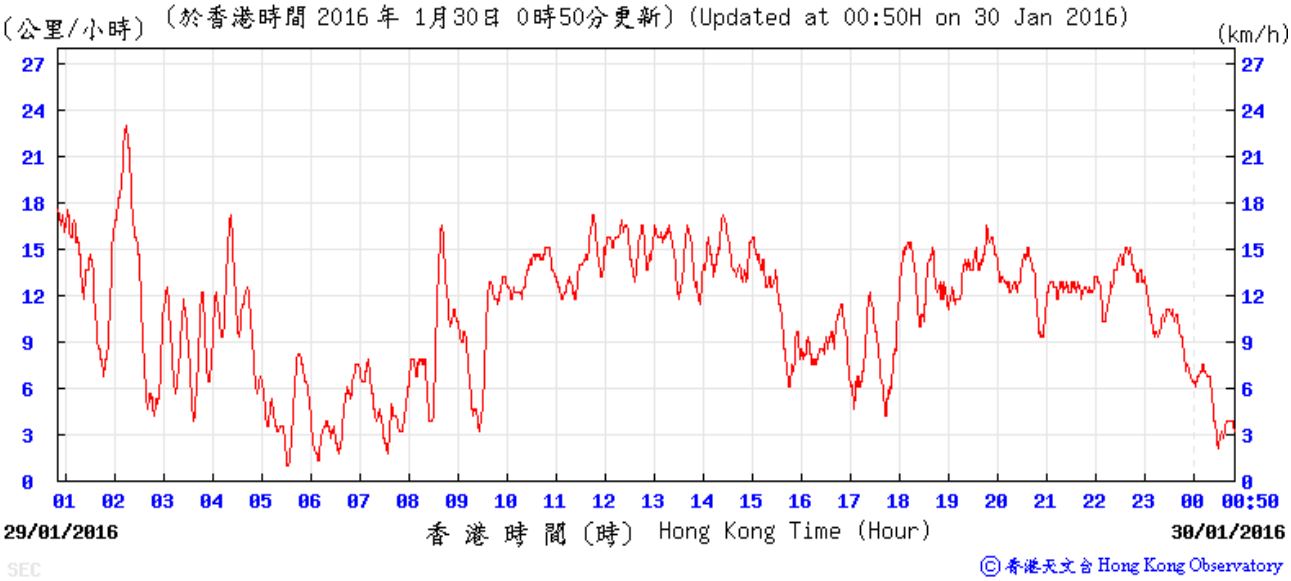

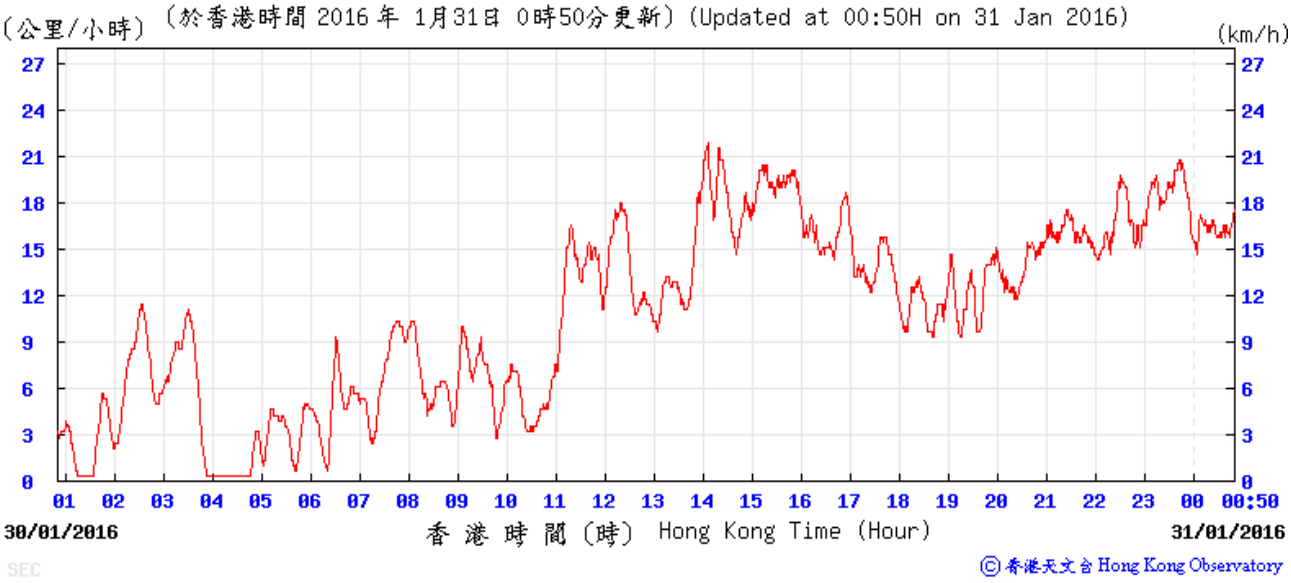

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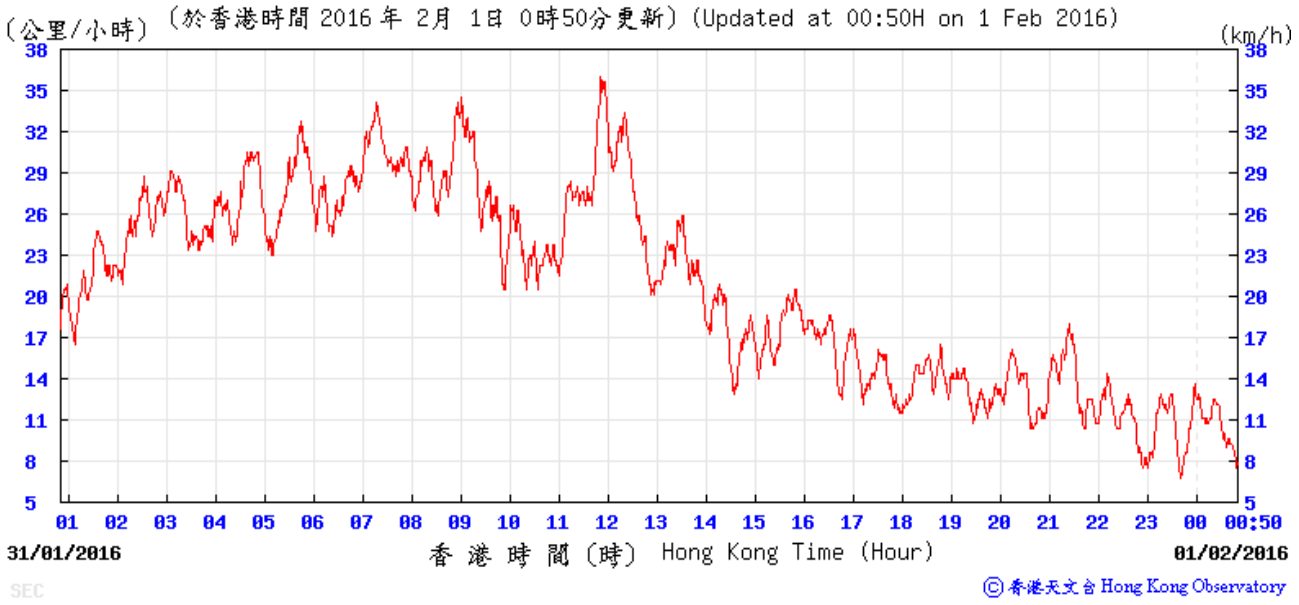

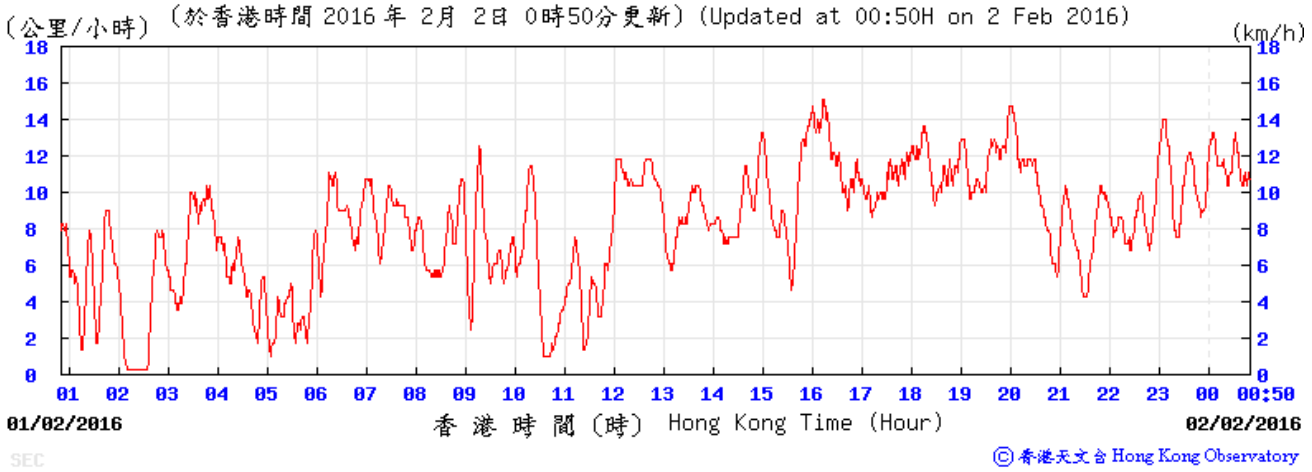

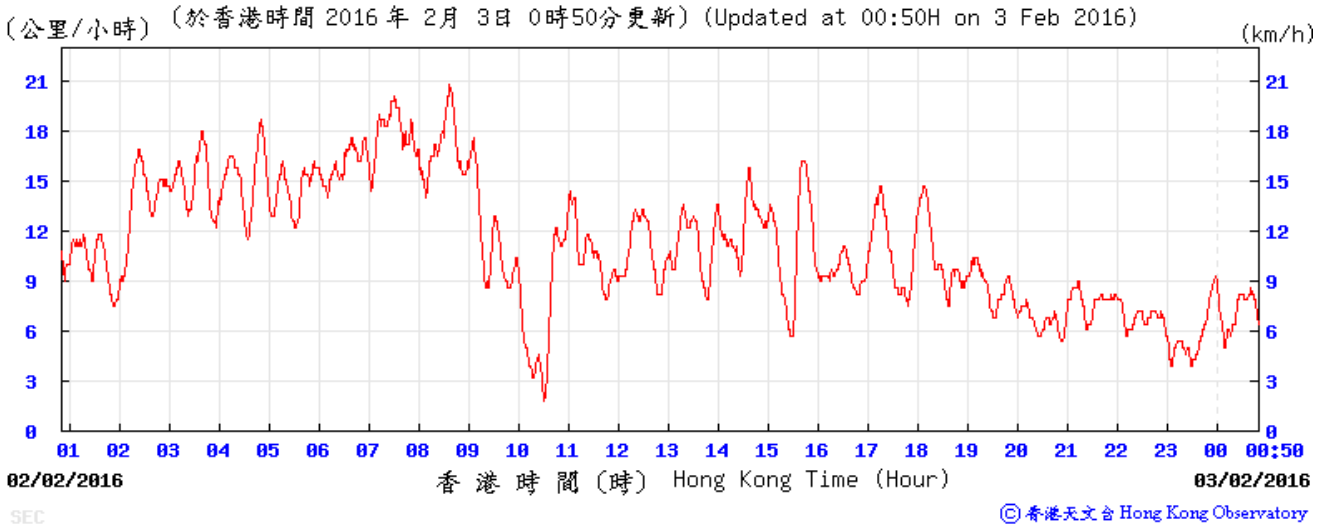

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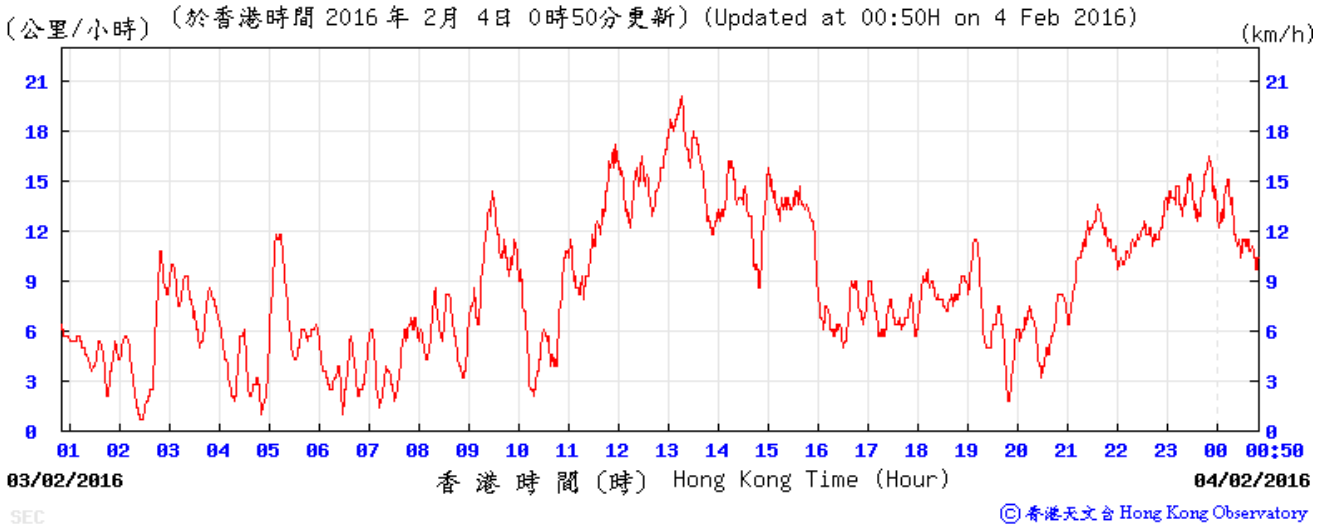

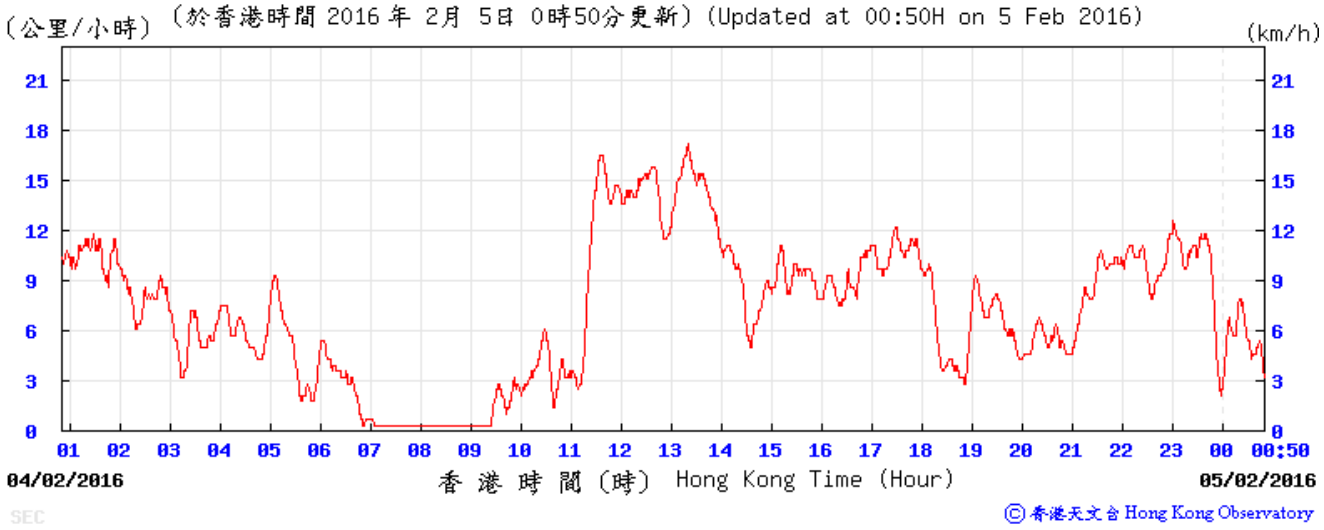

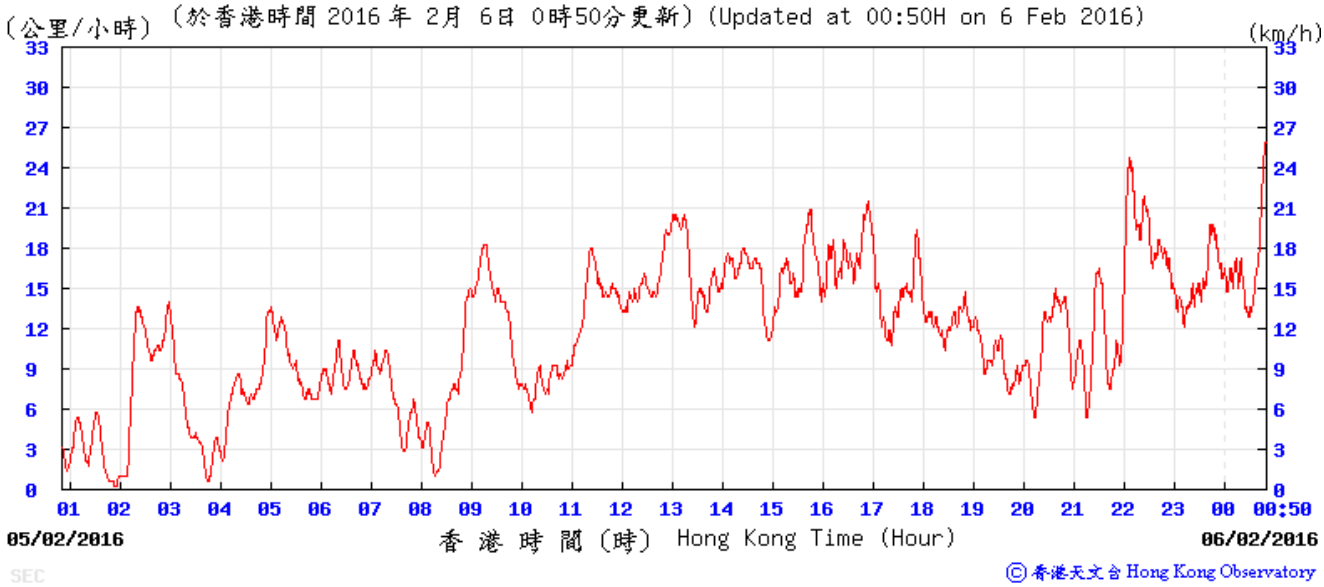

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