



Lam Geotechnics Limited

Contract No. HK/2015/01
Wan Chai Development Phase II and Central Wanchai Bypass
- Sampling, Field Measurement and Testing Works (Stage 3)
Monthly EM&A Report (June 2017)

CONTRACT NO: HK/2015/01

**WANCHAI DEVELOPMENT PHASE II AND CENTRAL
WANCHAI BYPASS
SAMPLING, FIELD MEASUREMENT AND TESTING WORK
(STAGE 3)**

**ENVIRONMENTAL PERMIT NO. EP-376/2009,
FURTHER ENVIRONMENTAL PERMITS NO. FEP-01/376/2009
AND FEP-02/376/2009**

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

- JUNE 2017 -

CLIENTS:

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CERTIFIED BY:

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DATE:

11 July 2017

Ref.: AACWBIECEM00_0_9537L.17

12 July 2017

AECOM Asia Company Limited
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Hong Kong

By Post and Fax (2691 2649)

Attention: Mr. Conrad Ng

Dear Mr. Ng,

**Re: Contract No. HK/2015/01
Wan Chai Development Phase II - Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 3)**

**Monthly Environmental Monitoring and Audit Report (June 2017)
for EP-376/2009, FEP-01/376/2009 and FEP-02/376/2009**

Reference is made to the Environmental Team's submission of the captioned Monthly Environmental Monitoring and Audit (EM&A) Report for June 2017 received by e-mail on 11 July 2017 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 in the captioned Environmental Permit.

Thank you very much for your attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	CEDD	Attn: Mr. L K Tsang	by fax: 2577 5040
	Lam	Attn: Mr. Raymond Dai	by fax: 2882 3331
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EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – **June 2017** specific for Environmental Permit no. EP-376/2009 and Further Environmental Permits no. FEP-01/376/2009 and FEP-02/376/2009. The EM&A report is prepared by the Environmental Team (ET) employed under Contract No. HK/2015/01 – Wan Chai Development Phase II and Central Wanchai Bypass – Sampling, Field Measurement and Testing Works (Stage 3). This report presents the environmental monitoring findings and information recorded during the period of **27th May 2017 to 26th June 2017**. The cut-off date of reporting is at 26th of each reporting month.

ii. In the reporting month, the principal work activities of the contract are included as follows:
Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

- **Drainage**

Noise Monitoring

- iii. Noise monitoring was conducted at M1a – Harbour Road Sports Centre.
- iv. With respect to the shift in major construction site portions at Wan Chai North, the noise monitoring station M1a – Harbour Road Sports Centre was finely adjusted from East of Harbour Road Sports Centre to West of Harbour Road Sports Centre on 21 June 2016.
- v. With respect to the demolition of Ex-Harbour Road Sports Centre, the respective noise monitoring station M1a – Harbour Road Sports Centre were finely adjusted on 16 and 25 May 2017 and thereafter to the Footbridge for Harbour Road Sports for noise monitoring.
- vi. **Five limit level exceedances were recorded on 31 May 2017, 8, 13, 22 and 26 June 2017 in this reporting month. After the investigation, the exceedances were concluded as non-project related.**

Air Quality Monitoring

- vii. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted on every six days basis at CMA5b – Pedestrian Plaza and CMA6a – Contractor HK/2012/08 Site Office.
- viii. **Due to electricity supply interruption, the 24 TSP monitoring was rescheduled as follow:
CMA5b was rescheduled from 14 and 26 June 2017 to 15 and 28 June 2017 respectively
CMA6a was rescheduled from 20 June 2017 to 22 June 2017**
- ix. **One limit level exceedance was recorded at CM5b – Pedestrian Plaza was recorded on 03 June 2017 in the reporting month. The exceedance was concluded as non-Project related.**

Complaints, Notifications of Summons and Successful Prosecutions

- x. **No environmental complaint was received in this reporting month.**

Site Inspections and Audit

- xi. The Environmental Team (ET) conducted weekly site inspection for Contract no. HK/2012/08 in this reporting period. The Contractors rectified major observations and recommendations made during the audit sessions. No non-conformance was identified during the site inspections.

Future Key Issues

- xii. In the coming reporting month, the principal work activities of the contract is anticipated as follows:

Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

- Drainage

1 INTRODUCTION

1.1 Scope of the Report

- 1.1.1. Lam Geotechnics Limited (LGL) has been appointed take up the role as the Environmental Team (ET) under Environmental Permit no. EP-376/2009 and Further Environmental Permits no. FEP-01/376/2009 and FEP-02/376/2009 to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Wan Chai Development Phase II and Central-Wan Chai Bypass (Register No.: AEIAR-458/2008).

This report documents the finding of EM&A works for Environmental Permit (EP) no. EP-376/2009 and Further Environmental Permits no. FEP-01/376/2009 and FEP-02/376/2009, during the period of [27th May 2017 to 26th June 2017](#). The cut-off date of reporting is the 26th of each reporting month.

1.2 Structure of the Report

- Section 1** ***Introduction*** – details the scope and structure of the report.
- Section 2** ***Project Background*** – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.
- Section 3** ***Status of Regulatory Compliance*** – summarizes the status of valid Environmental Permits / Licenses during the reporting period.
- Section 4** ***Monitoring Requirements*** – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.
- Section 5** ***Monitoring Results*** – summarizes the monitoring results obtained in the reporting period.
- Section 6** ***Compliance Audit*** – summarizes the auditing of monitoring results, all exceedances environmental parameters.
- Section 7** ***Cumulative Construction Impact due to the Concurrent Projects*** – summarizes the relevant cumulative construction impact due to the concurrent activities of the concurrent Projects.

- Section 8** ***Environmental Site Audit*** – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.
- Section 9** ***Complaints, Notification of summons and Prosecution*** – summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 10** ***Conclusion***

2 PROJECT BACKGROUND

2.1 Background

2.1.1 Wan Chai Development phase II and Central-Wan Chai Bypass (hereafter called “the Project”) are Designated Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Report for Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) has been approved on 11 December 2008.

2.2 Scope of the Project and Site Description

2.2.1. The design and construction of Wan Chai Development Phase II and Central Wanchai Bypass involves the construction and operation of primary and district distributor roads that is shown at [Figure 2.1](#).

2.2.2. The key purpose of the study area encompasses the Wan Chai harbourfront area. The area starts at the boundary of Central Reclamation Phase III (CRIII) at the west and connects to the existing Hung Hing Road at the east. The scope of the project includes:

- A dual 2-lane primary distributor road, Road P2, approximately 0.6km in length; and
- Other new primary and district distributor roads connecting to the slip roads of the Central-Wan Chai Bypass with a total length of approximately 0.7km.

2.2.3. The project also contains various Schedule 2 DP that, under the EIAO, require Environmental Permits (EPs) to be granted by the DEP before they may be either constructed or operated. **Table 2.1** summarises the DP under this Project. [Figure 2.1](#) shows the locations of these Schedule 2 DP.

Table 2.1 Schedule 2 Designated Project under this Project

Item	Designated Project	EIAO Reference
DP2	Road P2 and other roads which are classified as primary/district distributor roads	Schedule 2, Part I, A.1

2.2.4. The designated project work II (DP2) was awarded to China State-Leader Joint Venture HK/2012/08 (Contract Title: Wan Chai Development Phase II Central – Wan Chai Bypass at Wan Chai West) as part of the Project works by the Civil Engineering and Development Department (CEDD). The construction work under Contract no. HK/2012/08 was commenced on 13 May 2015.

2.3 Project Organization and Contact Personnel

2.3.1 Civil Engineering and Development Department and Highway Department are the overall project controllers for the Wan Chai Development Phase II and Central-Wan Chai Bypass

respectively. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.

- 2.3.2 The proposed project organization and lines of communication with respect to environmental protection works are shown in [Figure 2.2](#). Key personnel and contact particulars are summarized in **Table 2.2**:

Table 2.2 Contact Details of Key Personnel

Party	Role	Post	Name	Contact No.	Contact Fax
AECOM	Engineer's Representative for WDII	Principal Resident Engineer	Mr. Frankie Fan	2587 1778	2587 1877
	Engineer's Representative for CWB	Principal Resident Engineer	Mr. Peter Poon	3922 3388	3912 3010
China State-Build King Joint Venture	Contractor under Contract no. HK/2012/08	Project Director	C. N. LAI	9106 5806	2877 1522
		Project Manager	Mr. Eddie Chung	9189 8118	
		Site Agent	Mr. Keith Tse	9037 1839	
		Environmental Officer	Mr. James Ma	9130 9549	
Ramboll Environ Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3465 2888	3465 2899
Lam Geotechnics Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

- 2.3.3 In this reporting month, the principal work activities of the contract is included as follows:
Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

- [Drainage](#)

- 2.3.4 In coming reporting month, the principal work activities of the contract is anticipated as follows:

Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West

- [Drainage](#)

3 STATUS OF REGULATORY COMPLIANCE

3.1 Status of Environmental Licensing and Permitting under the Project

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in **Table 3.1**.

Table 3.1 Summary of the current status on licences and/or permits on environmental protection pertinent to the Project

Permits and/or Licences	Reference No.	Issued Date	Status
Environmental Permit	EP-376/2009	13 Nov 2009	Valid
Further Environmental Permit	FEP-01/376/2009	31 Mar 2015	Valid
Further Environmental Permit	FEP-02/376/2009	1 Aug 2016	Valid

3.1.2. The current status on licences and/or permits on environmental protection pertinent for contract no. HK/2012/08 under FEP-02/376/2009 showed in **Table 3.2** and **Table 3.3**

Table 3.2 Cumulative Summary of Valid Licences and Permits under Contract no. HK/2012/08

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Further Environmental Permit	FEP-01/376/2009	31 Mar 2015	N/A	Valid
	FEP-02/376/2009	1 Aug 2016	N/A	Valid
Notification of Works Under APCO	355439	4 Feb 2013	N/A	Valid
Registration as a Chemical Waste Producer	5213-134-C3790-01	30 Jun 2016	N/A	Valid
Billing Account under Waste Disposal Ordinance	7016883	18 Feb 2013	18 Jul 2017	Valid
Water Discharge Licence	WT00018470-2014	6 Mar 2014	31 Mar 2019	Valid

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Construction Noise Permit	GW-RS1332-16	29 Dec 2016	13 Jan 2017 to 12 Jul 2017	Valid
	GW-RS0385-17	27 Apr 2017	5 May 2017 to 4 Nov 2017	Valid

Table 3.3 Summary of submission status under FEP-01/376/2009 Condition

EP Condition	Submission	Date of Submission
Condition 2.9	Noise Management Plan (Rev. 2)	Generally in order as commented by EPD on 27 Oct 2015
Condition 2.10	Landscape Plan (Rev. 0)	Generally in order as commented by EPD on 5 Aug 2015

- 3.1.3. Implementation status of the recommended mitigation measures during this reporting month is presented in [Appendix 3.1](#).

4 MONITORING REQUIREMENTS

4.1 Noise Monitoring

NOISE MONITORING STATION

- 4.1.1. The noise monitoring station for the Project is listed and shown in **Table 4.1** and **Figure 4.1**. [Appendix 4.1](#) shows the established Action/Limit Levels for the monitoring works.

Table 4.1 Noise Monitoring Station

District	Station	Description
Wan Chai	M1a	Footbridge for Ex-Harbour Road Sports Centre

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). L_{eq} (30 minutes) shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, L_{eq} (5 minutes) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.
- 4.1.3. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:
- One set of measurements between 0700 and 1900 hours on normal weekdays.

MONITORING EQUIPMENT

- 4.1.4. As referred to in the Technical Memorandum TM issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.
- 4.1.5. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.2 Air Quality Monitoring

AIR QUALITY MONITORING STATIONS

- 4.2.1. The air quality monitoring stations for the Project are listed and shown in **Table 4.2** and **Figure 4.1**. **Appendix 4.1** shows the established Action/Limit Levels for the monitoring works.

Table 4.2 Air Quality Monitoring Stations

Station ID	Description
CMA5b	Pedestrian Plaza
CMA6a	WDII PRE Site Office

AIR QUALITY MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.
- 4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

- 4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
- 0.6 – 1.7 m³ per minute adjustable flow range;
 - Equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
 - Installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
 - Capable of providing a minimum exposed area of 406 cm²;
 - Flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
 - Equipped with a shelter to protect the filter and sampler;
 - Incorporated with an electronic mass flow rate controller or other equivalent devices;
 - Equipped with a flow recorder for continuous monitoring;

- Provided with a peaked roof inlet;
- Incorporated with a manometer;
- Able to hold and seal the filter paper to the sampler housing at horizontal position;
- Easily changeable filter; and
- Capable of operating continuously for a 24-hour period.

4.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The concern parties such as IEC shall properly document the calibration data for future reference. All the data should be converted into standard temperature and pressure condition.

LABORATORY MEASUREMENT / ANALYSIS

4.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.

4.2.8. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.

4.2.9. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.

4.2.10. All the collected samples shall be kept in a good condition for 6 months before disposal.

4.2.11. Current calibration certificates of equipment are presented in **Appendix 4.2.**

5 MONITORING RESULTS

5.0.1. The environmental monitoring will be implemented based on the division of works areas of the designated project managed under the contract with FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in [Figure 2.1](#) and [Figure 4.1](#). The monitoring results are presented in according to the Individual Contract(s).

5.0.2. In the reporting month, the concurrent contract is:

- Contract no. HK/2012/08 – Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai West.

5.0.3. The environment monitoring schedules for reporting month and coming month are presented in [Appendix 5.1](#).

5.1 Noise Monitoring Results

5.1.1 The proposed division of noise monitoring station is summarized in **Table 5.1** below.

Table 5.1 Noise Monitoring Station for Contract no. HK/2012/08

Location ID	District	Description
M1a	Wan Chai	Footbridge for Ex-Harbour Road Sports Centre

5.1.2 Five limit level exceedances were recorded on 31 May 2017, 8, 13, 22 and 26 June 2017 in this reporting month.

5.1.3 No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location on 31 May 2017, 8, 13, 22 and 26 June 2017 during the time of measurement while non WDII-CWB Projects construction works was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.

5.1.4 The noise monitoring results measured in this reporting period are reviewed and summarized. Details of the noise monitoring results and graphical presentation can be referred to [Appendix 5.2](#).

5.2 Air Quality Monitoring Results

5.2.1 The proposed division of air quality monitoring stations are summarized in **Table 5.2** below.

Table 5.2 Air Quality Monitoring Station for Contract no. HK/2012/08

Station	Description
CMA5b	Pedestrian Plaza
CMA6a	WDII PRE Site Office

5.2.2 One limit level exceedance was recorded at CM5b – Pedestrian Plaza was recorded on 03 June 2017 in the reporting month.

5.2.3 No construction works under EP-376/2009 was undertaken around the monitoring location on 03 June 2017 and no particular observation regarding air quality impact was observed during sampling and dust mitigation measure including water spraying for haul road was generally implemented. In view of the above, the exceedance was considered to be non-project related and potentially contributed by localized ambient condition and non-construction activities around the monitoring station.

5.2.4 The air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air quality monitoring results and graphical presentation can be referred in [Appendix 5.3](#).

5.3 WASTE MONITORING RESULTS

5.3.1 No Inert and non-inert C&D wastes disposed in this reporting month. Details of the waste flow table are summarized in **Table 5.3**.

Table 5.3 Details of Waste Disposal for Contract no. HK/2012/08

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m3	NIL	NIL	NIL
Inert C&D materials recycled, m3	NIL	NIL	NIL
Non-inert C&D materials disposed, m3	NIL	NIL	NIL
Non-inert C&D materials recycled, m3	NIL	NIL	NIL
Chemical waste disposed, kg	NIL	NIL	NIL

6 COMPLIANCE AUDIT

6.0.1. The Event Action Plan for construction noise and air quality are presented in [Appendix 6.1](#).

6.1 Noise Monitoring

6.1.1 Five limit level exceedances were recorded on 31 May 2017, 8, 13, 22 and 26 June 2017 in this reporting month.

6.1.2 No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location on 31 May 2017, 8, 13, 22 and 26 June 2017 during the time of measurement while non WDII-CWB Projects construction works was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.

6.2 Air Quality Monitoring

6.1.1. One limit level exceedance was recorded at CM5b – Pedestrian Plaza was recorded on 03 June 2017 in the reporting month.

6.1.2. No construction works under EP-376/2009 was undertaken around the monitoring location on 03 June 2017 and no particular observation regarding air quality impact was observed during sampling and dust mitigation measure including water spraying for haul road was generally implemented. In view of the above, the exceedance was considered to be non-project related and potentially contributed by localized ambient condition and non-construction activities around the monitoring station.

6.3 Review of the Reasons for and the Implications of Non-compliance

6.3.1 There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were presented in Section 8.

6.4 Summary of action taken in the event of and follow-up on non-compliance

6.4.1 There was no particular action taken since no non-compliance was recorded from the site audits in the reporting period.

7 CUMULATIVE CONSTRUCTION IMPACT DUE TO THE CONCURRENT PROJECTS

- 7.0.1. According to the Condition 3.4 of the EP-376/2009, this section addresses the relevant cumulative construction impact due to the concurrent activities of the current projects including the Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII), Central-WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) and Wan Chai Development Phase II – Central – Wan Chai Bypass at Wan Chai East (CWB Tunnel).
- 7.0.2. According to the Final EM&A report of Central Reclamation Phase III (CRIII) for Contract HK 12/02, the major construction activities were completed by end of January 2014 and no construction activities were undertaken thereafter and the water quality monitoring was completed in October 2011. As such, it is considered that there were no cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) undertaken by contractor HK12/02 in the reporting month.
- 7.0.3. According to the construction programme of Central-Wanchai Bypass at Wanchai West at the Central Reclamation Phase III area include road and drain works, backfilling works and reinstatement of Culvert and Cooling mains were performed in May 2017 reporting month. As no project related exceedance were recorded during the reporting period, cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) was considered as insignificant.
- 7.0.4. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activities under Wan Chai Development Phase II were, road and drains construction, tunnel construction and backfilling works at Wan Chai West and Wan Chai East. The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were drainage works and ventilation building construction at Central; temporary reclamation removal works at Causeway Bay, road works and side wall construction at Victoria Park; bridge construction, piling works, foundation works and building construction at North Point area in the reporting month. In addition, other non-Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects was observed undertaken at Wan Chai North and North Point area.
- 7.0.5. No significant air impact from construction activities was anticipated in the reporting month. Besides, no project related exceedance was recorded during the water, air and noise environmental monitoring events in the reporting month. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII), Central-WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) was insignificant.

8 ENVIRONMENTAL SITE AUDIT

8.0.1. Four site inspections for Contract no. HK/2012/08 were carried out on 31 May 2017, 6, 13 and 20 June 2017 in this reporting period. The results of inspection and outcome are summarized in **Table 8.1**.

Table 8.1 Summary of Environmental Inspections for Contract no. HK/2012/08

Item	Date	Observations	Action taken by Contractor	Outcome
170606_01	6-Jun-17	Water spraying shall be implemented on dusty ground surface for dust suppression at Zone A2	Water spraying has implemented and the ground was observed wet.	Completion as observed on 13 June 2017
170613_01	13-Jun-17	Bunding shall be provided along the culvert L structure alignment to prevent potential surface runoff from site.	Bunding was provided at the concerned location.	Completion as observed on 20 June 2017

9 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

- 9.0.1. No environmental complaint was received in the reporting period.
- 9.0.2. The details of cumulative complaint log and updated summary of complaints are presented in [Appendix 9.1](#)
- 9.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 9.1** and **Table 9.2** respectively.

Table 9.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
Commencement works (May 2015) to last reporting month	0
June 2017	0
Total	0

Table 9.2 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

10 CONCLUSION

10.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.

10.0.2. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 10.1**. The construction programmes of individual contracts are provided in [Appendix 10.1](#).

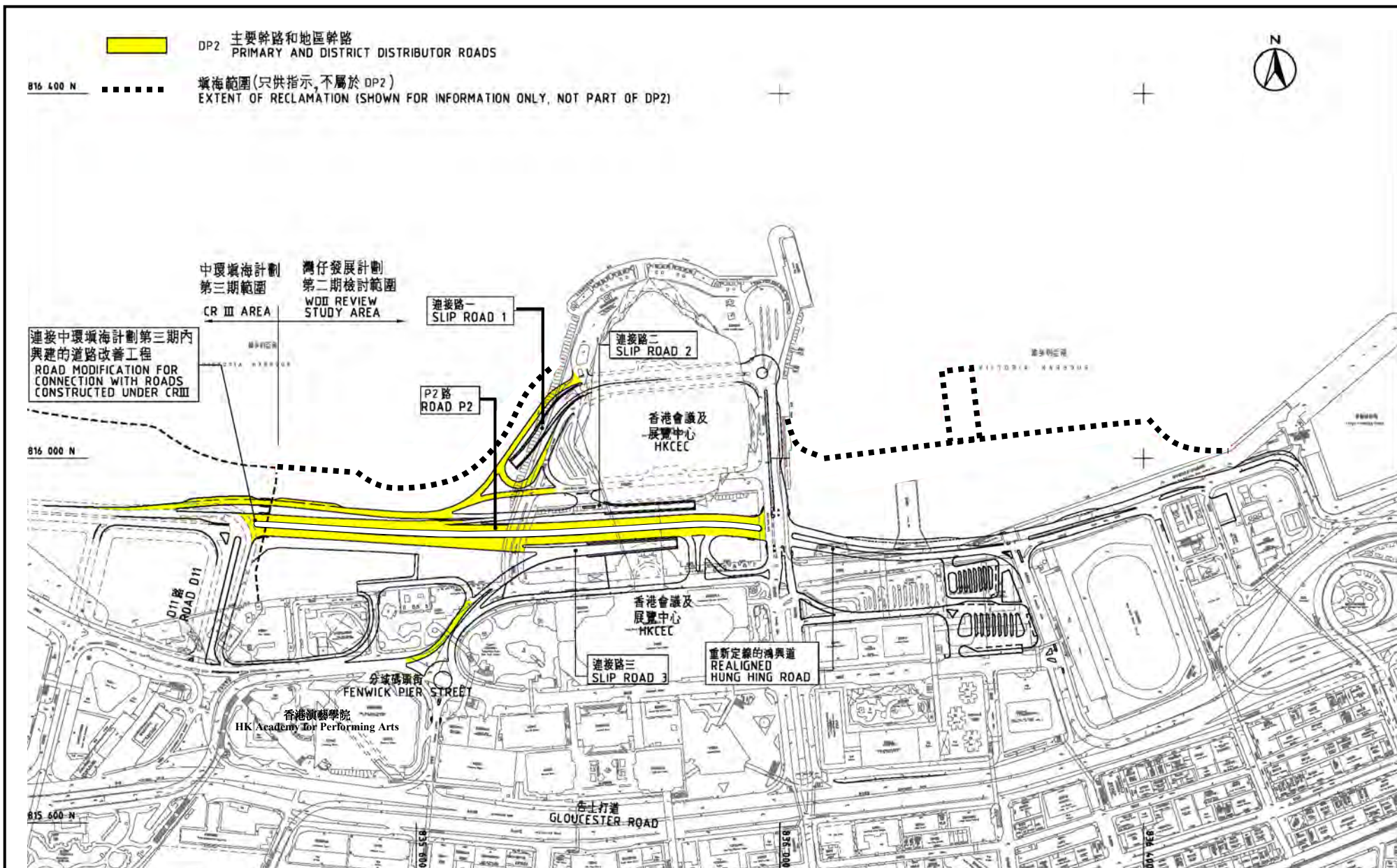
Table 10.1 Summary of Key Construction Activities of Individual Contract(s) to be commenced in Coming Reporting Month

Contract No.	Key Construction Works	Recommended Mitigation Measures
HK/2012/08	Drainage	- Dust control during dust generating works; - Implementation of proper noise pollution control; and - Provision of protection to ensure no runoff out of site area or direct discharge into public drainage system



Figure 2.1

Project Layout



Project Title : Road P2 and other roads which are classified as primary/district distributor roads (referred to as "DP2" in the WDII&CWB EIA Report)

工程項目名稱: P2 路及其他分類為主要幹路或地區幹路的道路(WDII&CWB 環評報告內稱 "DP2")

Environmental Permit No.: EP-376/2009

環境許可證編號 : EP-376/2009

Figure 1: Location of the Project

圖 1: 工程項目位置圖

(This figure was prepared based on Figure 1.2b of the WDII&CWB EIA report (Register No.: AEIAR-125/2008))
(本圖是根據 WDII&CWB 環評報告 (登記冊編號 AEIAR-125/2008) 圖 1.2b 編制)



Figure 2.2

Project Organization Chart



Project Organization Chart

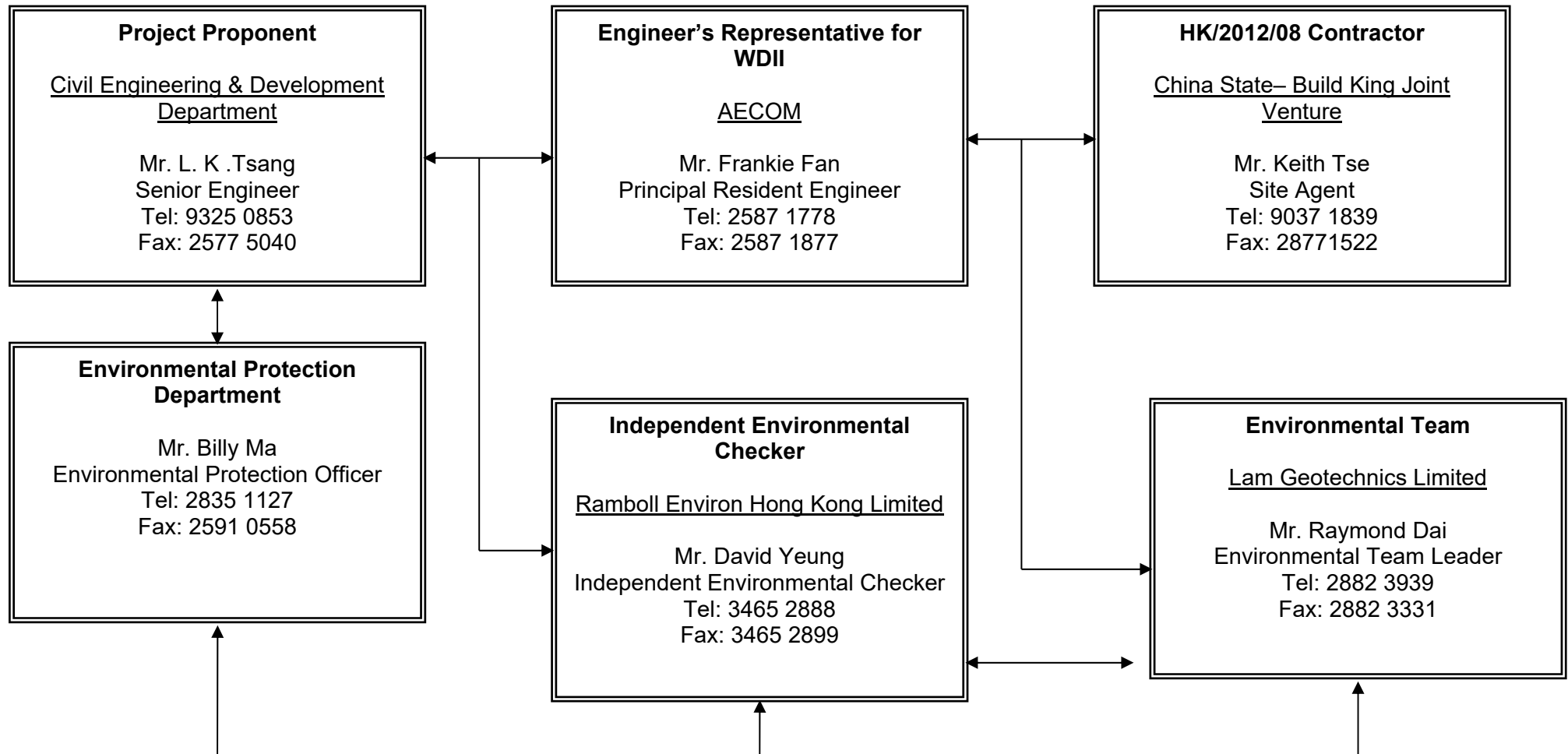


Figure 2.2



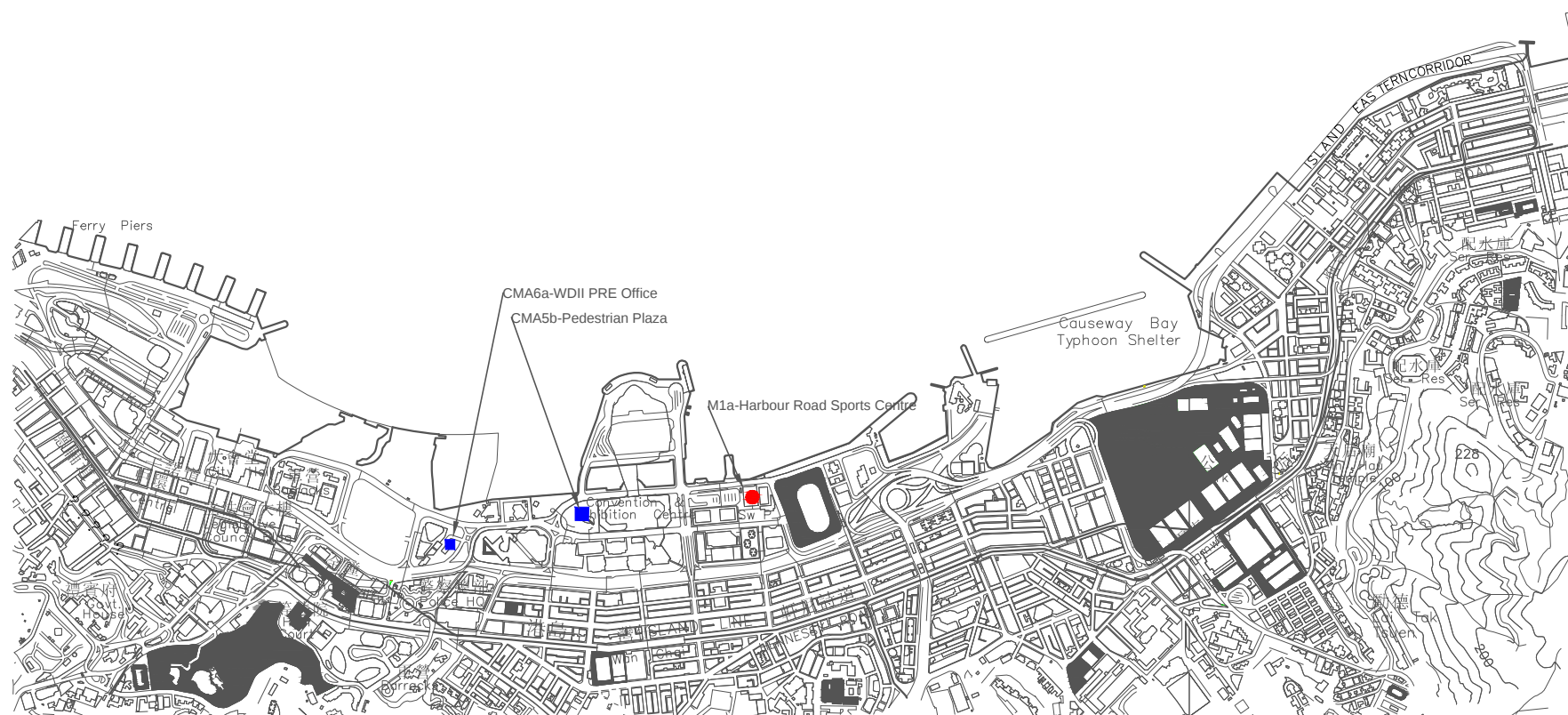
Figure 4.1

Locations of Monitoring Stations

Legend

● Noise Monitoring Station

■ Air Monitoring Station



LOCATIONS OF AIR QUALITY AND NOISE MONITORING STATIONS



Appendix 3.1

Environmental Mitigation Implementation Schedule

Appendix A**Table A13.1 Implementation Schedule for Air Quality Control****Table A13.2 Implementation Schedule for Noise Control****Table A13.3 Implementation Schedule for Water Quality Control****Table A13.4 Implementation Schedule for Waste Management****Table A13.7 Implementation Schedule for Landscape and Visual**

IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

Table A13.1 Implementation Schedule for Air Quality Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation stage				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
For the Whole Project								
S3.6.5	Four times a day watering of the work site with active operations.	Work site / during construction	Contractor		√			EIAO-TM
S3.8.1	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts. ▪ Strictly limit the truck speed on site to below 10 km per hour and water spraying to keep the haul roads in wet condition; ▪ Watering during excavation and material handling; ▪ Provision of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary; and ▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.	Work site / during construction	Contractor		√			

▪ Des - Design, C - Construction, O – Operation, and Dec – Decommissioning

Table A13.2 Implementation Schedule for Noise Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation stage				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
For the Whole Project								
S4.9.4	Good Site Practice: - Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program. - Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program. - Mobile plant, if any, shall be sited as far away from NSRs as possible. - Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum. - Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. - Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from onsite construction activities.	Work site / during construction	Contractor		√			EIAO-TM, NCO
For DP2 – WDII Major Roads (Road P2)								
S4.8.3 – S4.8.4	Use of quiet powered mechanical equipment, movable noise barrier and temporary noise barrier for the following tasks: - Temporary road diversion - Resurfacing - At-grade roadwork	Work site / during construction	Contractor		√			EIAO-TM, NCO

- Des - Design, C - Construction, O – Operation, and Dec – Decommissioning

Table A13.3 Implementation Schedule for Water Quality Control

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation stage				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
For the Whole Project								
S5.8	<i>Construction Runoff and Drainage</i> ▪ use of sediment traps, wheel washing facilities for vehicles leaving the site, and adequate maintenance of drainage systems to prevent flooding and overflow; ▪ Permanent drainage channels shall incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities shall be based on the guidelines in Appendix A1 of ProPECC PN 1/94; ▪ a sediment tank constructed from pre-formed individual cells of approximately 6 - 8 m3 capacity can be used for settling ground water prior to disposal; ▪ Oil interceptors shall be provided in the drainage system for the tunnels and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor shall have a bypass to prevent flushing during periods of heavy rain; precautions and actions to be taken when a rainstorm is imminent or forecast, and during or after rainstorms. Particular attention shall be paid to the control of any silty surface runoff during storm events; ▪ On-site drainage system shall be installed prior to the commencement of other construction activities. Sediment traps shall be	Work site / during construction	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)

	installed in order to minimise the sediment loading of the effluent prior to discharge; ▪ All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge shall be adequately designed for the controlled release of storm flows. All sediment control measures shall be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. ▪ The temporarily diverted drainage shall be reinstated to its original condition when the construction work is finished or the temporary diversion is no longer required. ▪ All fuel tanks and store areas shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity. ▪ Minimum distances of 100 m shall be maintained between the storm water discharges and the existing or planned WSD flushing water intakes during construction phase.							
S5.8	<i>Sewage from Construction Work Force</i> Construction work force sewage discharges on site shall be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage shall be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Work site / during construction	Contractor		√			ProPECC PN 1/94; WPCO (TM-DSS)

S5.8	<i>Floating Debris and Refuse</i> Collection and removal of floating refuse shall be performed at regular intervals on a daily basis. The contractor shall be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Work site and adjacent water / During the construction period.	Contractor		√			WPCO
S5.8	<i>Storm Water Discharges</i> Minimum distances of 100 m shall be maintained between the existing or planned stormwater discharges and the existing or planned WSD flushing water intakes.	Work site and adjacent water / During the design and construction period.	Contractor	√	√			WPCO

- Des - Design, C - Construction, O – Operation, and Dec – Decommissioning

Table A13.4 Implementation Schedule for Waste Management

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation stage				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
For the Whole Project								
S6.7.7	<i>Good Site Practices</i> Recommendations for good site practices during the construction activities include: ▪ nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; ▪ training of site personnel in proper waste management and chemical waste handling procedures; ▪ provision of sufficient waste disposal points and regular collection for disposal; ▪ appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; ▪ regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and ▪ a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Work site / During planning and design stage, and construction stage	Contractor		√			
S.6.7.8	<i>Waste Reduction Measures</i> Recommendations to achieve waste reduction include: • Sort C&D waste from demolition of the existing waterfront structures to recover	Work site / During planning and design stage, and construction stage	Contractor	√	√			

	recyclable portions such as metals. • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force. • Any unused chemicals or those with remaining functional capacity shall be recycled. • Use of reusable non-timber formwork, such as in casting the tunnel box sections, to reduce the amount of C&D material. • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.							
S6.7.10	<i>General Refuse</i> General refuse shall be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D material. A collection area shall be provided where wastes can be stored and loaded prior to removal from site. An enclosed and covered area is recommended to reduce the occurrence of 'wind blow' light material.	Work site / During the construction period	Contractor		√			Public Health and Municipal Services Ordinance (Cap. 132)

S6.7.11	<i>Chemical Wastes</i> After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) shall be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals shall be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	Contractor		√			Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.7.12 – S6.7.13	<i>Construction and Demolition Material</i> C&D material shall be sorted on-site into inert C&D material (that is, public fill) and C&D waste. All the suitable inert C&D material shall be broken down to 250 mm in size for reuse as public fill in the WDII reclamation. C&D waste, such as wood, glass, plastic, steel and other metals shall be reused or recycled and, as a last resort, disposed of to landfill. A suitable area shall be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials. In order to monitor the disposal of public fill and C&D waste at public fill reception facilities and landfills, respectively, and to control fly tipping, a trip-ticket system shall be included as one of the contractual requirements and implemented by the Environmental Team undertaking the environmental monitoring and audit work. An Independent Environment Checker shall be responsible for auditing the results of the system.	Work site / During the construction period	Contractor and Independent Environmental Checker		√			DEVB TCW No.6/2010; ETWB TCW No. 33/2002; ETWB TCW No. 19/2005
S6.7.14	<i>Bentonite Slurry</i> The disposal of residual used bentonite slurry shall follow the good practice guidelines stated	Work site / During the construction period	Contractor		√			ProPECC PN 1/94

	in ProPECC PN 1/94 “Construction Site Drainage” and listed as follows: ▪ If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis. ▪ If the used bentonite slurry is intended to be disposed of through the public drainage system, it shall be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the Technical Memorandum of Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. ▪ If the used bentonite slurry is intended to be disposed to public fill reception facilities, it will be mixed with dry soil on site before disposal.							
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- Des - Design, C - Construction, O – Operation, and Dec – Decommissioning

Table A13.7 Implementation Schedule for Landscape and Visual

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation stage				Relevant Legislation and Guidelines
				Des	C	O	Dec	
Construction Phase								
For the Whole Project								
Table 10.5	CM1 Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM2 Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM3 Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM4 Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM5 Control of night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.5	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM
For DP2 – WDII Major Roads (Road P2)								
Table 10.5	CM1 Topsoil, where identified, shall be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM2 Existing trees to be retained on site shall be carefully protected during construction.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM3 Trees unavoidably affected by the works shall be transplanted where practical.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM4 Compensatory tree planting shall be provided to compensate for felled trees.	Work site / During Construction Phase	Contractor	√	√			EIAO TM
Table 10.5	CM5 Control of night-time lighting.	Work site / During Construction Phase	Contractor		√			EIAO TM
Table 10.5	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.	Work site / During Construction Phase	Contractor		√			EIAO TM

Operation Phase								
For DP2 – WDII Major Roads (Road P2)								
Table 10.6, Figure 10.5.1-10.5.5	OM1 Aesthetic design of buildings and road-related structures, including viaducts, vent buildings, subways, footbridges and noise barriers and enclosure.	Work site / During Design Stage and Operation Phases	CEDD/HyD		√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM3 Buffer Tree and Shrub Planting to screen proposed roads and associated structures.	Work site / During Design Stage and Operation Phases	CEDD/HyD		√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM5 Aesthetic streetscape design.	Work site / During Design Stage and Operation Phases	CEDD/HyD		√	√		ETWB TCW 2/2004
Table 10.6, Figure 10.5.1-10.5.5	OM6 Aesthetic design of roadside amenity areas	Work site / During Design Stage and Operation Phases	CEDD/HyD		√	√		ETWB TCW 2/2004

- Des - Design, C - Construction, O – Operation, and Dec – Decommissioning



Appendix 4.1

Action and Limit Level

**Action and Limit Level*****Action and Limit Level for Noise Monitoring***

Time Period	Action Level	Limit Level
07:00 - 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)

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

**The Limit level shall be 70 dB(A) and 65 dB(A) for educational institute during normal teaching periods and school examination periods, respectively.*

Action and Limit Level for Air Monitoring

Monitoring Locations	1-hour TSP Level in $\mu\text{g}/\text{m}^3$		24-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level	Action Level	Limit Level
CMA5b Pedestrian Plaza	339.7	500	209.9	260
CMA6a WDII PRE Site Office	333.0	500	207.1	260



Appendix 4.2

Copies of Calibration Certificates



CERTIFICATE OF CALIBRATION

Certificate No.: 16CA1117 01-01

Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	B & K	B & K
Type/Model No.:	2236	4188
Serial/Equipment No.:	2100736	2288941
Adaptors used:	-	-

Item submitted by

Customer Name: Lam Geotechnics Limited
Address of Customer: -
Request No.: -
Date of receipt: 17-Nov-2016

Date of test: 18-Nov-2016

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	18-Jun-2017	CIGISMEC
Signal generator	DS 360	33873	18-Apr-2017	CEPREI
Signal generator	DS 360	61227	18-Apr-2017	CEPREI

Ambient conditions

Temperature: 23 ± 1 °C
Relative humidity: 50 ± 10 %
Air pressure: 1005 ± 5 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of $\pm 20\%$.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure response of the Sound Level Meter.

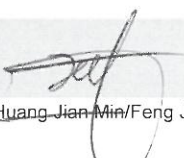
Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 21-Nov-2016

Company Chop:



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



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

16CA1117 01-01

Page

2

of

2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	
	C	Pass	1.0	2.1
	Lin	Pass	2.0	2.2
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
Linearity range for SPL	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	Pass	0.3	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by:

Date:

Fung Chi Yip
18-Nov-2016

Checked by:

Date:

Lam Tze Wai
21-Nov-2016

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 17CA0426 01-02

Page 1 of 2

Item tested

Description:	Sound Level Meter (Type 1)	Microphone
Manufacturer:	Larson Davis	PCB
Type/Model No.:	LxT1	377B02
Serial/Equipment No.:	0003737	171529
Adaptors used:	-	-

Item submitted by

Customer Name: Lam Environmental Service Ltd.
Address of Customer: -
Request No.: -
Date of receipt: 26-Apr-2017

Date of test: 28-Apr-2017

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	18-Jun-2017	CIGISMEC
Signal generator	DS 360	61227	01-Apr-2018	CEPREI

Ambient conditions

Temperature: 21 ± 1 °C
Relative humidity: 50 ± 10 %
Air pressure: 1010 ± 5 hPa

Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of $\pm 20\%$.
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:


Huang Jian Min/Feng Jun Qi

Date: 04-May-2017

Company Chop:



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



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 17CA0426 01-02

Page 2 of 2

1, Electrical Tests

The electrical tests were performed using an equivalent capacitance substituted for the microphone. The results are given in below with test status and the estimated uncertainties. The "Pass" means the result of the test is inside the tolerances stated in the test specifications. The "-" means the result of test is outside these tolerances.

Test:	Subtest:	Status:	Expanded Uncertainty (dB)	Coverage Factor
Self-generated noise	A	Pass	0.3	2.1
	C	Pass	0.8	
	Lin	Pass	1.6	
Linearity range for Leq	At reference range, Step 5 dB at 4 kHz	Pass	0.3	2.2
	Reference SPL on all other ranges	Pass	0.3	
	2 dB below upper limit of each range	Pass	0.3	
	2 dB above lower limit of each range	Pass	0.3	
	At reference range, Step 5 dB at 4 kHz	Pass	0.3	
Linearity range for SPL	A	Pass	0.3	
	C	Pass	0.3	
	Lin	Pass	0.3	
Time weightings	Single Burst Fast	Pass	0.3	
	Single Burst Slow	Pass	0.3	
Peak response	Single 100µs rectangular pulse	N/A	N/A	
R.M.S. accuracy	Crest factor of 3	Pass	0.3	
Time weighting I	Single burst 5 ms at 2000 Hz	Pass	0.3	
	Repeated at frequency of 100 Hz	Pass	0.3	
Time averaging	1 ms burst duty factor 1/10 ³ at 4kHz	Pass	0.3	
	1 ms burst duty factor 1/10 ⁴ at 4kHz	Pass	0.3	
Pulse range	Single burst 10 ms at 4 kHz	Pass	0.4	
Sound exposure level	Single burst 10 ms at 4 kHz	Pass	0.4	
Overload indication	SPL	Pass	0.3	
	Leq	Pass	0.4	

2, Acoustic tests

The complete sound level meter was calibrated on the reference range using a B&K 4226 acoustic calibrator with 1000Hz and SPL 94 dB. The sensitivity of the sound level meter was adjusted. The test result at 125 Hz and 8000 Hz are given in below with test status and the estimated uncertainties.

Test:	Subtest	Status	Expanded Uncertainty (dB)	Coverage Factor
Acoustic response	Weighting A at 125 Hz	Pass	0.3	
	Weighting A at 8000 Hz	Pass	0.5	

3, Response to associated sound calibrator

N/A

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by:


Lai Sheng Jie
Date: 28-Apr-2017

Checked by:


Fung Chi Yip
Date: 04-May-2017

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



CERTIFICATE OF CALIBRATION

Certificate No.: 16CA1117 01-02

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10707358
Adaptors used: -

Item submitted by

Customer: Lam Geotechnics Ltd.
Address of Customer: -
Request No.: -
Date of receipt: 17-Nov-2016

Date of test: 18-Nov-2016

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	14-Apr-2017	SCL
Preamplifier	B&K 2673	2239857	28-Apr-2017	CEPREI
Measuring amplifier	B&K 2610	2346941	26-Apr-2017	CEPREI
Signal generator	DS 360	61227	18-Apr-2017	CEPREI
Digital multi-meter	34401A	US36087050	18-Apr-2017	CEPREI
Audio analyzer	8903B	GB41300350	19-Apr-2017	CEPREI
Universal counter	53132A	MY40003662	19-Apr-2017	CEPREI

Ambient conditions

Temperature: 23 ± 1 °C
Relative humidity: 50 ± 10 %
Air pressure: 1005 ± 5 hPa

Test specifications

- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 21-Nov-2016

Company Chop:



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

**CERTIFICATE OF CALIBRATION**

(Continuation Page)

Certificate No.:

16CA1117 01-02

Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	(Output level in dB re 20 μ Pa)
			Estimated Expanded Uncertainty dB
1000	94.00	94.12	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz

STF = 0.002 dB

Estimated expanded uncertainty

0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz

Actual Frequency = 991.6 Hz

Estimated expanded uncertainty

0.1 Hz

Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz

TND = 0.6 %

Estimated expanded uncertainty

0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by:

Fung Chi Yip

Date: 18-Nov-2016

Checked by:

Lam Tze Wai

Date: 21-Nov-2016

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2016 Rootmeter S/N 0438320 Ta (K) - 293
Operator Tisch Orifice I.D. - 3166 Pa (mm) - 748.03

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	1.4270	3.2	2.00
2	NA	NA	1.00	1.0220	6.4	4.00
3	NA	NA	1.00	0.9100	7.9	5.00
4	NA	NA	1.00	0.8730	8.8	5.50
5	NA	NA	1.00	0.7180	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967	0.6985	1.4150	0.9957	0.6977	0.8851
0.9925	0.9711	2.0010	0.9915	0.9701	1.2517
0.9904	1.0883	2.2372	0.9893	1.0872	1.3995
0.9892	1.1332	2.3464	0.9882	1.1320	1.4678
0.9840	1.3705	2.8299	0.9830	1.3691	1.7702
Qstd slope (m) = 2.10714			Qa slope (m) = 1.31946		
intercept (b) = -0.05158			intercept (b) = -0.03226		
coefficient (r) = 0.99978			coefficient (r) = 0.99978		
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol}[(Pa - \text{Diff. Hg})/760](298/Ta)$$

$$Qstd = Vstd/Time$$

$$Va = \text{Diff Vol}[(Pa - \text{Diff Hg})/Pa]$$

$$Qa = Va/Time$$

For subsequent flow rate calculations:

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

$$Qa = 1/m\{[\text{SQRT } H2O(Ta/Pa)]-b\}$$



Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5b
Equipment no. : HVS010

Calibration Date : 21-Apr-17
Calibration Due Date : 21-Jun-17

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition				
Temperature, T _a	299	Kelvin	Pressure, P _a	1008 mmHg

Orifice Transfer Standard Information					
Equipment No.	Ori002	Slope, m _c	2.10714	Intercept, b _c	-0.05158
Last Calibration Date	20-May-16	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	20-May-17				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std}	Continuous Flow	IC
	H (inches of water)			(m ³ / min.)	Recorder, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	1.4	1.4	2.8	0.8152	38	37.8371
2	2.1	2.1	4.2	0.9929	44	43.8113
3	3.3	3.3	6.6	1.2385	52	51.7770
4	4.3	4.3	8.6	1.4102	57	56.7556
5	5.5	5.5	11.0	1.5917	62	61.7341

By Linear Regression of Y on X

Slope, m = 30.8725 Intercept, b = 13.0364
Correlation Coefficient* = 0.9991
Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL222 to HVS010 with respect to the update in quality management system.

Calibrated by : Jackey MA
Date : 21-Apr-17

Checked by : Pauline Wong
Date : 21-Apr-17



Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA5b
Equipment no. : HVS010

Calibration Date : 16-Jun-17
Calibration Due Date : 16-Aug-17

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T _a	302	Kelvin	Pressure, P _a
			1005 mmHg

Orifice Transfer Standard Information					
Equipment No.	Ori001	Slope, m _c	2.02533	Intercept, b _c	-0.03593
Last Calibration Date	20-Mar-17	$(H \times P_a / 1013.3 \times 298 / T_a)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	20-Mar-18				

Calibration of TSP						
Calibration Point	Manometer Reading			Q _{std}	Continuous Flow	IC
	H (inches of water)			(m ³ / min.)	Recorder, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	1.4	1.4	2.8	0.8351	36	35.6140
2	2.2	2.2	4.4	1.0423	42	41.5497
3	3.5	3.5	7.0	1.3101	50	49.4639
4	4.5	4.5	9.0	1.4831	56	55.3996
5	5.6	5.6	11.2	1.6524	61	60.3460

By Linear Regression of Y on X

Slope, m = 30.4653 Intercept, b = 9.9483
Correlation Coefficient* = 0.9996
Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL222 to HVS010 with respect to the update in quality management system.

Calibrated by : Jackey MA
Date : 16-Jun-17

Checked by : Pauline Wong
Date : 16-Jun-17



Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA6a
Equipment no. : HVS013

Calibration Date : 21-Apr-17
Calibration Due Date : 21-Jun-17

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T_a	299	Kelvin	Pressure, P_a
			1008 mmHg

Orifice Transfer Standard Information					
Equipment No.	Ori002	Slope, m_c	2.10714	Intercept, b_c	-0.05158
Last Calibration Date	20-May-16	$\left(H \times P_a / 1013.3 \times 298 / T_a \right)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	20-May-17				

Calibration of TSP						
Calibration Point	Manometer Reading			Q_{std}	Continuous Flow	IC
	H (inches of water)			($m^3 / min.$)	Recorder, W	($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	1.4	1.4	2.8	0.8152	38	37.8371
2	2.3	2.3	4.6	1.0380	44	43.8113
3	3.6	3.6	7.2	1.2924	52	51.7770
4	4.8	4.8	9.6	1.4886	56	55.7599
5	6.1	6.1	12.2	1.6750	64	63.7256

By Linear Regression of Y on X

Slope, m = 29.3004 Intercept, b = 13.6098
Correlation Coefficient* = 0.9957
Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL551 to HVS013 with respect to the update in quality management system.

Calibrated by : Jacky MA
Date : 21-Apr-17

Checked by : Pauline Wong
Date : 21-Apr-17



Calibration Data for High Volume Sampler (TSP Sampler)

Location : CMA6a
Equipment no. : HVS013

Calibration Date : 16-Jun-17
Calibration Due Date : 16-Aug-17

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition			
Temperature, T_a	302	Kelvin	Pressure, P_a
			1005 mmHg

Orifice Transfer Standard Information					
Equipment No.	Ori001	Slope, m_c	2.02533	Intercept, b_c	-0.03593
Last Calibration Date	20-Mar-17	$\left(\frac{H \times P_a}{1013.3 \times 298 / T_a} \right)^{1/2}$ $= m_c \times Q_{std} + b_c$			
Next Calibration Date	20-May-17				

Calibration of TSP						
Calibration Point	Manometer Reading			Q_{std}	Continuous Flow	IC
	H (inches of water)			($m^3 / min.$)	Recorder, W	($W(P_a/1013.3 \times 298/T_a)^{1/2}/35.31$)
	(up)	(down)	(difference)	X-axis	(CFM)	Y-axis
1	1.5	1.5	3.0	0.8638	32	31.6569
2	2.4	2.4	4.8	1.0879	39	38.5819
3	3.6	3.6	7.2	1.3284	46	45.5068
4	4.7	4.7	9.4	1.5153	54	53.4211
5	6.0	6.0	12.0	1.7098	60	59.3567

By Linear Regression of Y on X

Slope, m = 33.0592 Intercept, b = 2.6936
Correlation Coefficient* = 0.9982
Calibration Accepted = Yes/No**

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been re-assigned from EL551 to HVS013 with respect to the update in quality management system.

Calibrated by : Jackey MA
Date : 16-Jun-17

Checked by : Pauline Wong
Date : 16-Jun-17



Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month

Contract No. HK/2015/01
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 3)

Environmental Monitoring Schedule
June 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						27-May 24hr TSP
28-May	29-May 1hr TSP	30-May	31-May Noise (daytime)	1-Jun	2-Jun 24hr TSP	3-Jun 1hr TSP
4-Jun	5-Jun	6-Jun	7-Jun	8-Jun 24hr TSP Noise (daytime)	9-Jun 1hr TSP	10-Jun
11-Jun	12-Jun	13-Jun Noise (daytime)	14-Jun 24hr TSP (CMA6a)	15-Jun 24hr TSP (CMA5b) 1hr TSP	16-Jun	17-Jun
18-Jun	19-Jun	20-Jun 24hr TSP (CMA5b)	21-Jun 1hr TSP	22-Jun 24hr TSP (CMA6a) Noise (daytime)	23-Jun	24-Jun
25-Jun	26-Jun 24hr TSP (CMA6a) Noise (daytime)	27-Jun 1hr TSP	28-Jun 24hr TSP (CMA5b)			

Contract No. HK/2015/01
Wan Chai Development Phase II and Central-Wan Chai Bypass
Sampling, Field Measurement and Testing Works (Stage 3)
Tentative Environmental Monitoring Schedule
July 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			28-Jun	29-Jun	30-Jun	1-Jul
				24hr TSP	1hr TSP	
2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul
	Noise (daytime)	Noise (daytime)	24hr TSP	1hr TSP		
9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul
	Noise (daytime)	24hr TSP Noise (daytime)	1hr TSP			
16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
	24hr TSP Noise (daytime)	1hr TSP Noise (daytime)				24hr TSP
23-Jul	24-Jul	25-Jul	26-Jul			
	1hr TSP Noise (daytime)	Noise (daytime)				



Appendix 5.2

Noise Monitoring Results and Graphical Presentations



Noise Monitoring Result for EP-376/2009

Day Time (0700 - 1900hrs on normal weekdays)

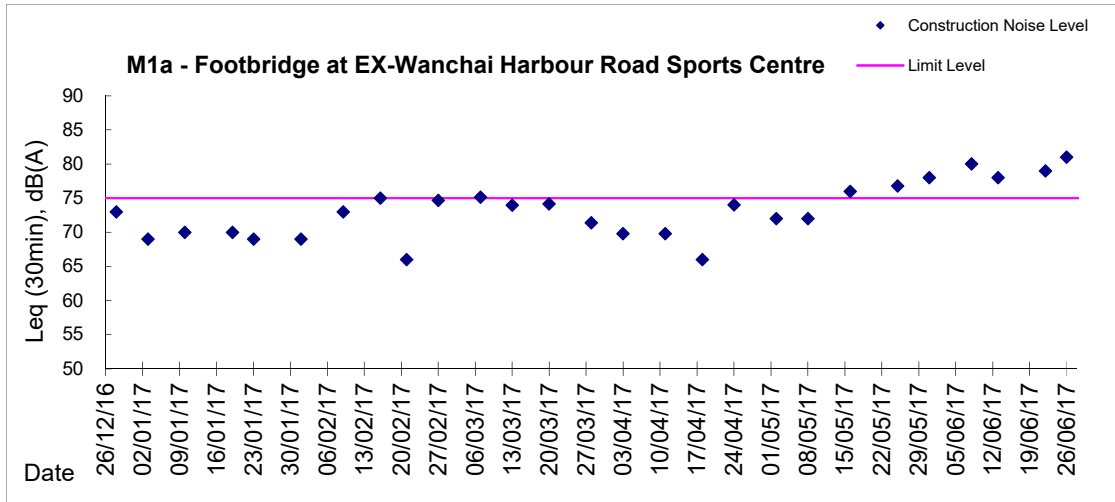
Location: M1a - Footbridge at EX-Wanchai Harbour Road Sports Centre

Date	Time	Weather	Measurement Noise Level			Baseline Level	Construction Noise Level	Limit Level
			Leq	L10	L90	Leq	Leq	Leq
			Unit: dB(A), (30-min)					
31/5/2017	13:50	Fine	79.4	80.1	77.2	73	78	75
8/6/2017	14:00	Fine	80.5	82.6	77.0	73	80	75
13/6/2017	13:50	Cloudy	79.3	81.2	75.1	73	78	75
22/6/2017	13:55	Fine	79.6	81.4	76.8	73	79	75
26/6/2017	16:11	Fine	81.7	81.9	77.9	73	81	75



Graphic Presentation of Noise Monitoring Result

Day Time (0700 - 1900hrs on normal weekdays)





Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations



Location: CMA5b - Pedestrian Plaza

Report on 24-hour TSP monitoring for EP-376/2009

Action Level - 209.9 µg/m³

Limit Level - 260 µg/m³

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m ³ /min			Total Volume, m ³	TSP Level, µg/m ³
				Initial	Final	Initial	Final		Initial, Q _{si}	Final, Q _{sf}	Average		
27-May-17	8:00	Cloudy	20546	2.5951	2.7433	8458.80	8482.80	24.00	0.82	0.82	0.82	1177	125.9
2-Jun-17	8:00	Cloudy	20516	2.5006	2.5918	8485.80	8509.80	24.00	0.84	0.84	0.84	1207	75.6
8-Jun-17	8:00	Cloudy	20538	2.5624	2.6433	8512.80	8536.80	24.00	0.75	0.75	0.75	1078	75.0
15-Jun-17	12:00	Cloudy	20852	2.8850	2.9457	8553.15	8577.15	24.00	0.81	0.81	0.81	1167	52.0
20-Jun-17	8:00	Cloudy	20549	2.5659	2.6180	8577.20	8601.20	24.00	0.86	0.86	0.86	1243	41.9
28-Jun-17	18:30	Fine	21123	2.8482	2.8746	8615.73	8639.73	24.00	0.86	0.86	0.86	1239	21.3

Remarks: Due to interruption of electricity, the 24hr TSP was rescheduled from 14 and 26 June 2017 to 15 and 28 June 2017 respectively.

Report on 1-hour TSP monitoring for EP-376/2009

Action Level - 339.7 µg/m³

Limit Level - 500 µg/m³

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m ³ /min			Total Volume, m ³	TSP Level, µg/m ³
				Initial	Final	Initial	Final		Initial, Q _{si}	Final, Q _{sf}	Average		
29-May-17	8:40	Fine	20591	2.5621	2.5687	8482.80	8483.80	1.00	0.82	0.82	0.82	49	134.7
29-May-17	10:05	Fine	20504	2.5126	2.5199	8483.80	8484.80	1.00	0.75	0.75	0.75	45	161.3
29-May-17	13:00	Fine	20518	2.4973	2.5124	8484.80	8485.80	1.00	0.82	0.82	0.82	49	308.3
3-Jun-17	8:45	Fine	20677	2.6530	2.7529	8509.80	8510.80	1.00	0.81	0.81	0.81	48	2064.7
3-Jun-17	10:15	Fine	20682	2.6398	2.6460	8510.80	8511.80	1.00	0.81	0.81	0.81	48	128.1
3-Jun-17	13:00	Fine	20688	2.6904	2.6966	8511.80	8512.80	1.00	0.81	0.81	0.81	48	128.1
9-Jun-17	8:20	Cloudy	20773	2.5756	2.5810	8536.80	8537.80	1.00	0.75	0.75	0.75	45	120.2
9-Jun-17	10:15	Cloudy	20819	2.5558	2.5604	8537.80	8538.80	1.00	0.75	0.75	0.75	45	102.4
9-Jun-17	13:00	Cloudy	20803	2.5629	2.5688	8538.80	8539.80	1.00	0.75	0.75	0.75	45	131.4
15-Jun-17	8:15	Cloudy	20793	2.5563	2.5591	8550.15	8551.15	1.00	0.75	0.75	0.75	45	62.2
15-Jun-17	9:45	Cloudy	20890	2.8520	2.8559	8551.15	8552.15	1.00	0.75	0.75	0.75	45	86.7
15-Jun-17	10:48	Cloudy	20893	2.8669	2.8691	8552.15	8553.15	1.00	0.75	0.75	0.75	45	48.9
21-Jun-17	9:30	Cloudy	20964	2.8673	2.8759	8601.20	8602.20	1.00	0.86	0.86	0.86	52	166.1
21-Jun-17	11:00	Cloudy	20926	2.8796	2.8846	8602.20	8603.20	1.00	0.86	0.86	0.86	52	96.6
21-Jun-17	14:25	Cloudy	20952	2.8686	2.8710	8603.20	8604.20	1.00	0.86	0.86	0.86	52	46.4
27-Jun-17	15:04	Cloudy	21126	2.8360	2.8371	8612.73	8613.73	1.00	0.86	0.86	0.86	52	21.3
27-Jun-17	16:06	Cloudy	21125	2.8370	2.8386	8613.73	8614.73	1.00	0.86	0.86	0.86	52	31.0
27-Jun-17	17:09	Cloudy	21124	2.8448	2.8458	8614.73	8615.73	1.00	0.86	0.86	0.86	52	19.4



Location: CMA6a - WDII PRE Office

Report on 24-hour TSP monitoring for EP-376/2009

Action Level - 207.1 µg/m³

Limit Level - 260 µg/m³

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m ³ /min			Total Volume, m ³	TSP Level, µg/m ³
				Initial	Final	Initial	Final		Initial, Q _{si}	Final, Q _{sf}	Average		
27-May-17	8:00	Cloudy	20548	2.5742	2.6796	2145.37	2169.37	24.00	0.91	0.91	0.91	1306	80.7
2-Jun-17	8:00	Cloudy	20515	2.4938	2.5767	2172.37	2196.37	24.00	0.90	0.89	0.90	1290	64.3
8-Jun-17	8:00	Cloudy	20522	2.5500	2.6048	2199.37	2223.37	24.00	0.90	0.90	0.90	1295	42.3
14-Jun-17	8:00	Cloudy	20815	2.5612	2.6462	2226.41	2250.41	24.00	0.90	0.90	0.90	1298	65.5
22-Jun-17	13:30	Cloudy	20533	2.6009	2.6445	2335.10	2359.10	24.00	1.13	1.13	1.13	1625	26.8
26-Jun-17	8:00	Cloudy	20863	2.8529	2.8823	2359.10	2383.10	24.00	1.01	1.01	1.01	1457	20.2

Remarks: Due to interruption of electricity, the 24hr TSP was rescheduled from 20 June 2017 to 22 June 2017.

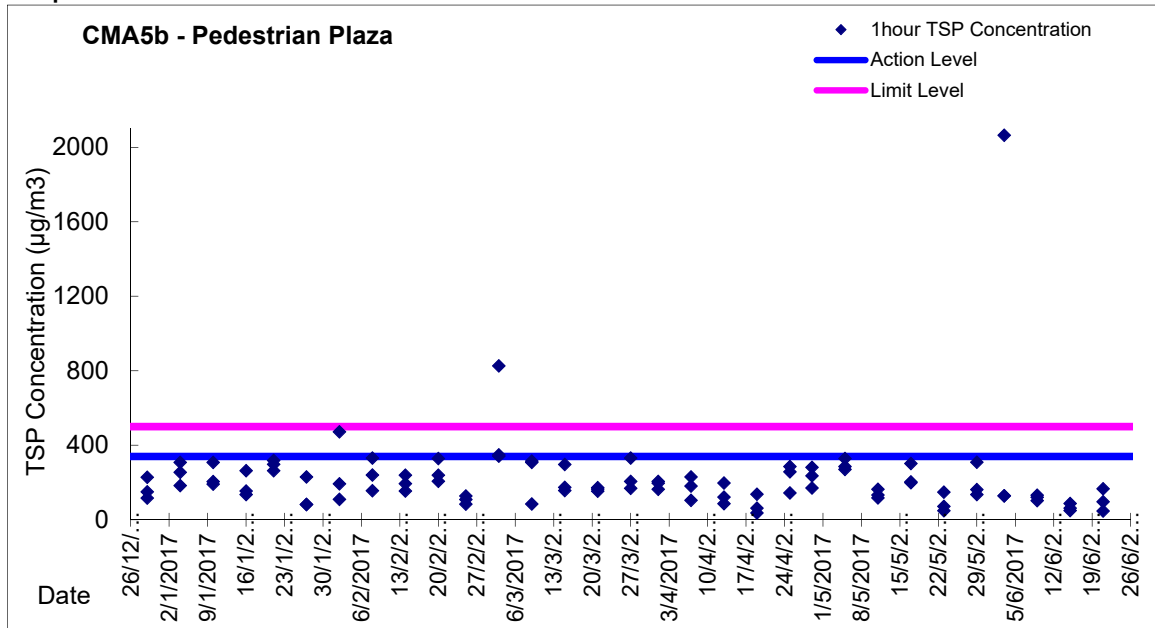
Report on 1-hour TSP monitoring for EP-376/2009

Action Level - 333 µg/m³

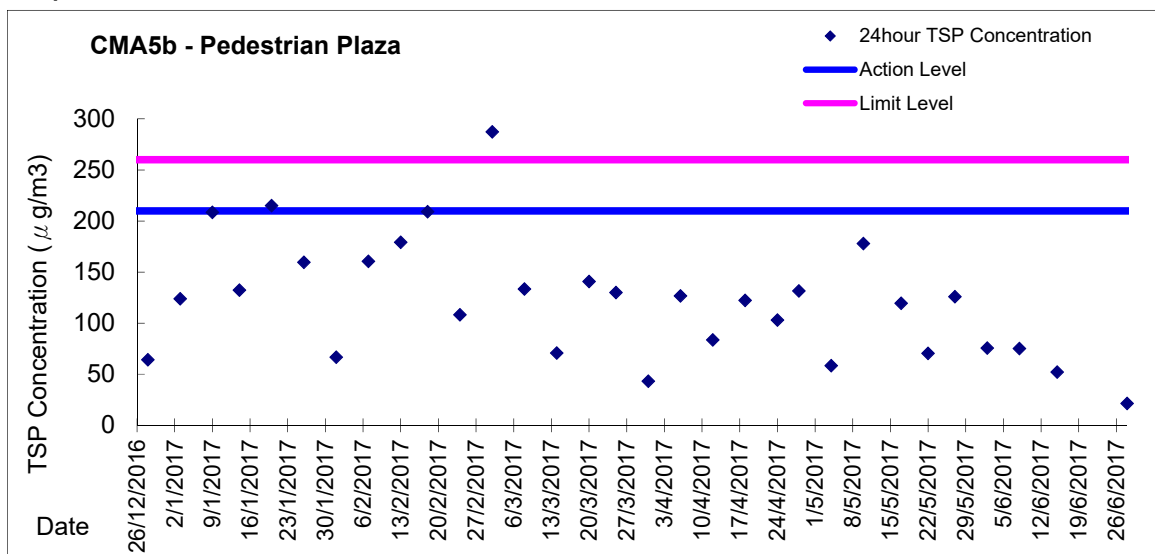
Limit Level - 500 µg/m³

Date	Sampling Time	Weather Condition	Filter paper no.	Filter Weight, g		Elapse Time, hr		Sampling Time, hr	Flow Rate, m ³ /min			Total Volume, m ³	TSP Level, µg/m ³
				Initial	Final	Initial	Final		Initial, Q _{si}	Final, Q _{sf}	Average		
29-May-17	8:20	Fine	20520	2.4911	2.4957	2169.37	2170.37	1.00	0.91	0.91	0.91	54	84.6
29-May-17	9:54	Fine	20503	2.4748	2.4789	2170.37	2171.37	1.00	0.91	0.91	0.91	54	75.4
29-May-17	14:20	Fine	20540	2.5945	2.6008	2171.37	2172.37	1.00	0.78	0.78	0.78	47	135.4
3-Jun-17	8:15	Fine	20679	2.6505	2.6540	2196.37	2197.37	1.00	0.77	0.77	0.77	46	76.2
3-Jun-17	10:00	Fine	20721	2.5929	2.5961	2197.37	2198.37	1.00	0.89	0.89	0.89	54	59.6
3-Jun-17	13:00	Fine	20689	2.6524	2.6544	2198.37	2199.37	1.00	0.77	0.77	0.77	46	43.6
9-Jun-17	8:02	Cloudy	20821	2.8526	2.8541	2223.41	2224.41	1.00	0.90	0.90	0.90	54	27.8
9-Jun-17	10:00	Cloudy	20776	2.5674	2.5711	2224.41	2225.41	1.00	0.90	0.90	0.90	54	68.6
9-Jun-17	13:00	Cloudy	20713	2.6239	2.6270	2225.41	2226.41	1.00	0.90	0.90	0.90	54	57.5
15-Jun-17	8:05	Cloudy	20791	2.5730	2.5765	2250.41	2251.41	1.00	0.90	0.90	0.90	54	64.8
15-Jun-17	9:30	Cloudy	20899	2.8199	2.8223	2251.41	2252.41	1.00	0.90	0.90	0.90	54	44.4
15-Jun-17	10:45	Cloudy	20892	2.8630	2.8652	2252.41	2253.41	1.00	0.90	0.90	0.90	54	40.7
21-Jun-17	9:00	Cloudy	20963	2.8518	2.8543	2332.10	2333.10	1.00	1.13	1.13	1.13	68	36.9
21-Jun-17	11:00	Cloudy	20957	2.8319	2.8357	2333.10	2334.10	1.00	1.13	1.13	1.13	68	56.0
21-Jun-17	13:00	Cloudy	20417	2.8437	2.8456	2334.10	2335.10	1.00	1.13	1.13	1.13	68	28.0
27-Jun-17	8:15	Cloudy	20951	2.8259	2.8274	2383.10	2384.10	1.00	1.07	1.07	1.07	64	23.4
27-Jun-17	10:05	Cloudy	21022	2.9065	2.9092	2384.10	2385.10	1.00	1.13	1.13	1.13	68	39.9
27-Jun-17	13:00	Cloudy	20944	2.8360	2.8385	2385.10	2386.10	1.00	1.13	1.13	1.13	68	37.0

Graphic Presentation of 1 hour TSP Result for EP-376/2009



Graphic Presentation of 24 hour TSP Result for EP-376/2009



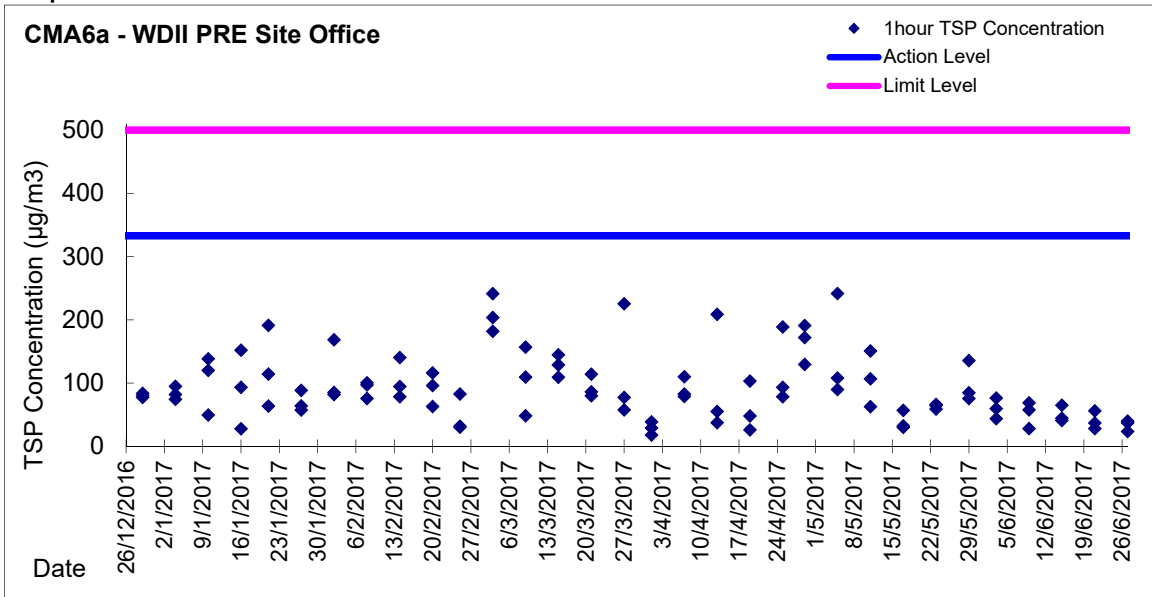


Contract No. HK/2015/01

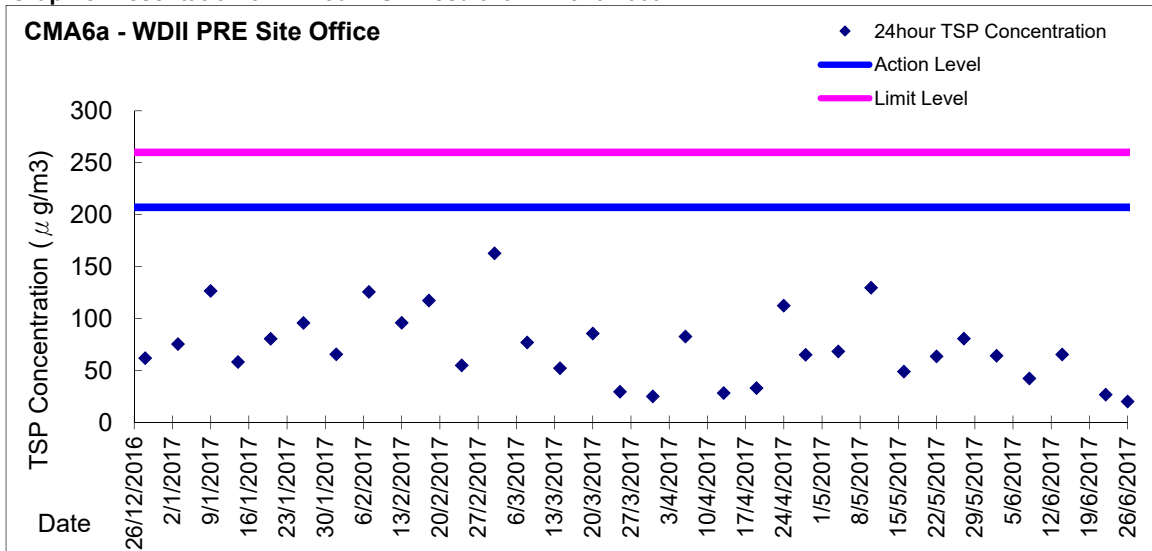
Wanchai Development Phase II and Central Wanchai Bypass

Sampling, Field Measurement and Testing Work (Stage 3)

Graphic Presentation of 1 hour TSP Result for EP-376/2009



Graphic Presentation of 24 hour TSP Result for EP-376/2009





Appendix 6.1

Event Action Plans



Event/Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	1. Notify ER, IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the IEC and Contractor on remedial measures required; 5. Increase monitoring frequency to check mitigation effectiveness. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Review the investigation results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Advise the ER on the effectiveness of the proposed remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit noise mitigation proposals to IEC and ER; 2. Implement noise mitigation proposals. (The above actions should be taken within 2 working days after the exceedance is identified)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit Level being exceeded	1. Inform IEC, ER, Contractor and EPD; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency; 4. Identify source and investigate the cause of exceedance; 5. Carry out analysis of Contractor's working procedures; 6. Discuss with the IEC, Contractor and ER on remedial measures required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Supervise the implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)

**Event / Action Plan for Construction Air Quality**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; 2. Repeat measurement to confirm finding; 3. Increase monitoring frequency to daily. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Notify Contractor. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform 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 IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Submit proposals for remedial to ER within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; 2. Repeat measurement to confirm finding; 3. Increase monitoring frequency to daily; 4. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. (The above actions should be taken within 2 working days after the exceedance is identified)
2. Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated. (The above actions should be taken within 2 working days after the exceedance is identified)



Event and Action Plan for Marine Water Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; (The above actions should be taken within 1 working day after the exceedance is identified) Repeat measurement on next working day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)



EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)
Limit level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC, contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures; As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities. (The above actions should be taken within 1 working day after the exceedance is identified)



Event and Action Plan for Odour Patrol

Event	ACTION	
	Person-in-charge of Odour Monitoring	Implementation Agent Identified by CEDD
Action Level		
Exceedance of Action Level	1. Identify source/reason of exceedance; 2. Repeat odour patrol to confirm finding.	1. Carry out investigation to identify the source/reason of exceedance; 2. Rectify any unacceptable practice 3. Implement more mitigation measures if necessary; 4. Inform EPD or MD if exceedance is considered to be caused by expedient connections or floating debris.
Limit Level		
Exceedance of Limit Level	1. Identify source / reason of exceedance; 2. Repeat odour patrol to confirm findings; 3. Increase odour patrol frequency; 4. If exceedance stops, cease additional odour patrol.	1. Carry out investigation to identify the source/reason of exceedance. Investigation shall be completed within 2 weeks; 2. Rectify any unacceptable practice; 3. Formulate remedial actions; 4. Ensure remedial actions properly implemented; 5. If exceedance continues, consider what more/enhanced mitigation measures shall be implemented; 6. Inform EPD or MD if exceedance is considered to be caused by expedient connections or floating debris.



Appendix 6.2

Summary for Notification of Exceedance



Ref. No.	Date	Time	Location	Measured TSP Level	Unit	Action Level	Limit Level	Follow-up action
X_16A051	3-Jun-17	8:45	CMA5b- Pedestrian Plaza	2064.7	1hr TSP (ug/m ³)	339.7	500	Possible reason: Elevated TSP level potentially in relate to localized ambient condition and non-construction activity around the monitoring station during the monitoring period. Action taken / to be taken: Reviewed the trend of air quality measurement across monitoring stations. Analysis of contractor's working procedures. Remarks / Other Obs: No construction works under EP-376/2009 was undertaken around the monitoring location on the monitoring date at the under Contractor of HK/2012/08 and no particular observation regarding air quality impact was observed during sampling and dust mitigation measure including water spraying for haul road was generally implemented. Nevertheless, non WDII-CWB Project construction activities and traffic was observed opposite to the monitoring station was observed on the monitoring date. In addition, it was further noted that garden and sweeping works conducted periodically at the monitoring station by Pedestrian Plaza management office could potentially contribute to the elevated particulates level in the vicinity of the monitoring equipment. In view of the above, the exceedance was considered to be non-project related and potentially contributed by localized ambient condition and non-construction activity around the monitoring station. Nevertheless, the Contractor of HK/2012/08 was reminded to maintain regularly dust suppression measures for any potential dusty surface and dust generating operation around the concerned location to avoid any potential cumulative air quality impact.

Ref. No.	Date	Time	Location	Construction Noise Level, dB(A)	Parameter	Action Level	Limit Level dB(A)	Follow-up action
X_16N073	31-May-17	13:50	M1a-Harbour Road Sports Centre	78	Leq(30min)	when one documented complaint was received.	75	Possible reason: Bored piling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution. Action taken / to be taken: A repeat measurement was conducted to confirm result and reviewed the trend of previous noise monitoring and Contractor's working procedure. Remarks / Other Obs: No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location during the time of measurement while bored piling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.
X_16N076	8-Jun-17	14:00	M1a-Harbour Road Sports Centre	80	Leq(30min)	when one documented complaint was received.	75	Possible reason: Bored piling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution. Action taken / to be taken: A repeat measurement was conducted to confirm result and reviewed the trend of previous noise monitoring and Contractor's working procedure. Remarks / Other Obs: No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location during the time of measurement while bored piling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.
X_16N079	13-Jun-17	13:50	M1a-Harbour Road Sports Centre	78	Leq(30min)	when one documented complaint was received.	75	Possible reason: Bored piling and drilling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution. Action taken / to be taken: A repeat measurement was conducted to confirm result and reviewed the trend of previous noise monitoring and Contractor's working procedure. Remarks / Other Obs: No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location during the time of measurement while bored piling and drilling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.
X_16N085	22-Jun-17	13:55	M1a-Harbour Road Sports Centre	79	Leq(30min)	when one documented complaint was received.	75	Possible reason: Bored piling and breaking works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution. Action taken / to be taken: A repeat measurement was conducted to confirm result and reviewed the trend of previous noise monitoring and Contractor's working procedure. Remarks / Other Obs: No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location during the time of measurement while bored piling and breaking works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.
X_16N088	26-Jun-17	16:11	M1a-Harbour Road Sports Centre	81	Leq(30min)	when one documented complaint was received.	75	Possible reason: Drilling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution. Action taken / to be taken: A repeat measurement was conducted to confirm result and reviewed the trend of previous noise monitoring and Contractor's working procedure. Remarks / Other Obs: No construction work under EP-376/2009 was conducted by Contract HK/2012/08 around the concerned location during the time of measurement while drilling works next to the monitoring station under non WDII-CWB Contractor was observed as the major noise contribution during monitoring. As such, the exceedance was considered as non-Project related.



Appendix 9.1

Complaint Log



Environmental Complaints Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
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Appendix 10.1

Construction Programme of Individual Contracts



CEDD Contract No. HK/2012/08
Wan Chai Development Phase II
Central - Wan Chai Bypass at Wan Chai West

[illegible]

  Current Milestone
  Actual Work
  Critical Remaining Work
  Remaining Work
 Remaining Level of Effort

Works Programme for Utilities & Roadworks (Ref. to DWP Rev.9)

Date	Revision	Checked	Approved
31-Dec-16	9		



Activity ID	Activity Name	Remaining Dur	Early Start	Early Finish	2	2017										
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
SIIIA10660	Sec III A - roadwork and utilities (Zone A2) - HEC	40	08-Apr-17	31-May-17												
	Sec III A - roadwork and utilities (Zone A2) - sub-base	40	19-Apr-17	07-Jun-17												
	Sec III A - roadwork and utilities (Zone A2) - road kerb	40	28-Apr-17	16-Jun-17												
	Sec III A - roadwork and utilities (Zone A2) - flexible pavement	50	10-May-17	08-Jul-17												
	Sec III A - roadwork and utilities (Zone A2) - construct u-channel	50	26-Apr-17	26-Jun-17												
	Sec III A - roadwork and utilities (Zone A2) - pave footpath concrete	40	08-May-17	23-Jun-17												
	Sec III A - roadwork and utilities (Zone A2) - Road Lighting, TCSS Ducts &Traffic Signs	40	17-May-17	04-Jul-17												
	Sec III A - roadwork and utilities (Zone A2) - lay footpath paving block	40	10-May-17	26-Jun-17												
	Sec III A - roadwork and utilities (Zone A2) - Road sign and road marking	40	22-May-17	08-Jul-17												
Roadwork & Utilities at B																
SIIIA10840	Sec III A - roadwork and utilities (Zone B) - Backfill to pavement founding level	40	28-Feb-17	19-Apr-17												
SIIIA10860	Sec III A - roadwork and utilities (Zone B) - storm water drain & sub-soil drain	40	05-Apr-17	26-May-17												
SIIIA10880	Sec III A - roadwork and utilities (Zone B) - Fresh watermain & Irrigation Mains	40	10-Apr-17	01-Jun-17												
SIIIA10900	Sec III A - roadwork and utilities (Zone B) - Gas main	40	10-Apr-17	01-Jun-17												
SIIIA10920	Sec III A - roadwork and utilities (Zone B) - HEC	40	18-Apr-17	06-Jun-17												
SIIIA10940	Sec III A - roadwork and utilities (Zone B) - sub-base	40	22-Apr-17	10-Jun-17												
SIIIA10960	Sec III A - roadwork and utilities (Zone B) - road kerb	40	27-Apr-17	15-Jun-17												
SIIIA10980	Sec III A - roadwork and utilities (Zone B) - flexible pavement	45	06-May-17	28-Jun-17												
SIIIA11000	Sec III A - roadwork and utilities (Zone B) - construct u-channel	45	02-May-17	24-Jun-17												
SIIIA11020	Sec III A - roadwork and utilities (Zone B) - pave footpath concrete	45	06-May-17	28-Jun-17												
SIIIA11040	Sec III A - roadwork and utilities (Zone B) - Road Lighting, TCSS Ducts &Traffic Signs	45	12-May-17	05-Jul-17												
SIIIA11060	Sec III A - roadwork and utilities (Zone B) - lay footpath paving block	45	10-May-17	03-Jul-17												
SIIIA11080	Sec III A - roadwork and utilities (Zone B) - Road sign and road marking	45	17-May-17	10-Jul-17												
Roadwork & Utilities at D																
SIIIA11090	Sec III A - roadwork and utilities (Zone D) - backfill to pavement founding level	25	10-Apr-17	13-May-17												
SIIIA11100	Sec III A - roadwork and utilities (Zone D) - storm water drain & sub-soil drain	45	09-May-17	30-Jun-17												
SIIIA11110	Sec III A - roadwork and utilities (Zone D) - Fresh watermain & Irrigation Mains	45	09-May-17	30-Jun-17												
SIIIA11120	Sec III A - roadwork and utilities (Zone D) - Gas main	45	09-May-17	30-Jun-17												
SIIIA11130	Sec III A - roadwork and utilities (Zone D) - HEC	45	09-May-17	30-Jun-17												
SIIIA11140	Sec III A - roadwork and utilities (Zone D) - sub-base	45	25-May-17	18-Jul-17												
SIIIA11150	Sec III A - roadwork and utilities (Zone D) - road kerb	45	05-Jun-17	27-Jul-17												
SIIIA11160	Sec III A - roadwork and utilities (Zone D) - flexible pavement	45	14-Jun-17	05-Aug-17												
SIIIA11170	Sec III A - roadwork and utilities (Zone D) - construct u-channel	45	09-Jun-17	01-Aug-17												
SIIIA11180	Sec III A - roadwork and utilities (Zone D) - pave footpath concrete	45	12-Jun-17	03-Aug-17												
SIIIA11190	Sec III A - roadwork and utilities (Zone D) - Road Lighting, TCSS Ducts &Traffic Signs	45	19-Jun-17	10-Aug-17												
SIIIA11200	Sec III A - roadwork and utilities (Zone D) - lay footpath paving block	45	19-Jun-17	10-Aug-17												
SIIIA11210	Sec III A - roadwork and utilities (Zone D) - road sign & road marking	45	26-Jun-17	17-Aug-17												
Section V - Remaining At-Grade Road; Remove 2nd Stage ITA																
Roadwork & Utilities																
SV10020	Sec V - Roadwork & Utilities - Backfilling to pavement formation	20	30-Mar-17	26-Apr-17												



CEDD Contract No. HK/2012/08
Wan Chai Development Phase II
Central - Wan Chai Bypass at Wan Chai West

Activity ID	Activity Name	Remaining Dur	Early Start	Early Finish	
					2017
					JanFebMarAprMayJunJulAugSepOctNov
SV10040	Sec V - Roadwork & Utilities - Stormwater Drainage Works	45	21-Apr-17	15-Jun-17	
SV10060	Sec V - Roadwork & Utilities - Sewerage Works	45	21-Apr-17	15-Jun-17	
SV10080	Sec V - Roadwork & Utilities - Watermain & Irrigation Mains	45	21-Apr-17	15-Jun-17	
SV10100	Sec V - Roadwork & Utilities - Gas Main	45	05-May-17	27-Jun-17	
SV10120	Sec V - Roadwork & Utilities - HEC cable duct and drawpit	45	12-May-17	05-Jul-17	
SV10140	Sec V - Roadwork & Utilities - Telecom cable duct and drawpit	45	18-May-17	11-Jul-17	
SV10160	Sec V - Roadwork & Utilities - lay & compact sub-base	45	29-May-17	21-Jul-17	
SV10180	Sec V - Roadwork & Utilities - construct road kerb	45	01-Jun-17	24-Jul-17	
SV10200	Sec V - Roadwork & Utilities - flexible pavement	45	03-Jun-17	26-Jul-17	
SV10220	Sec V - Roadwork & Utilities - footpath paving block	45	07-Jun-17	29-Jul-17	
SV10240	Sec V - Roadwork & Utilities - concrete footpath	45	13-Jun-17	04-Aug-17	
SV10260	Sec V - Roadwork & Utilities - construct surface channel	45	13-Jun-17	04-Aug-17	
SV10280	Sec V - Roadwork & Utilities - Road Lighting, TCSS Ducts &Traffic Signs	45	15-Jun-17	07-Aug-17	
Section IV - Slip Road 3					
Roadwork & Utilities (Remaining)					
SIV10020	Sec IV - Roadwork & Utilities at SR3 - Backfill to road formation	25	28-Mar-17	29-Apr-17	
SIV10040	Sec IV - Roadwork & Utilities at SR3 - Sewerage Works	50	19-Apr-17	19-Jun-17	
SIV10060	Sec IV - Roadwork & Utilities at SR3 - Stormwater Drainage Works and Subsoil drain	50	09-May-17	07-Jul-17	
SIV10080	Sec IV - Roadwork & Utilities at SR3 - Fresh watermain & Irrigation Mains	50	12-May-17	11-Jul-17	
SIV10100	Sec IV - Roadwork & Utilities at SR3 - Salt water main	50	18-May-17	17-Jul-17	
SIV10120	Sec IV - Roadwork & Utilities at SR3 - Gas main	50	24-May-17	22-Jul-17	
SIV10140	Sec IV - Roadwork & Utilities at SR3 - HEC cable duct and drawpit	50	24-May-17	22-Jul-17	
SIV10160	Sec IV - Roadwork & Utilities at SR3 - Telcom cable duct and drawpit	50	24-May-17	22-Jul-17	
SIV10180	Sec IV - Roadwork & Utilities at SR3 - lay and compact sub-base	50	31-May-17	28-Jul-17	
SIV10200	Sec IV - Roadwork & Utilities SR3 - lay road kerb	50	06-Jun-17	03-Aug-17	
SIV10220	Sec IV - Roadwork & Utilities at SR3 - Pave flexible pavement	50	12-Jun-17	09-Aug-17	
SIV10240	Sec IV - Roadwork & Utilities at SR3 - Road Lighting, TCSS Ducts &Traffic Signs	50	17-Jun-17	15-Aug-17	