



CONTRACT NO: HY/2019/18
**WANCHAI DEVELOPMENT PHASE II AND CENTRAL
WANCHAI BYPASS
SAMPLING, FIELD MEASUREMENT AND TESTING WORK
(STAGE 4)**

**ENVIRONMENTAL PERMIT NO. EP-376/2009,
QUARTERLY ENVIRONMENTAL MONITORING
AND AUDIT REPORT**

- AUG 2022 TO OCT 2022 -

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30 November 2022



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EXECUTIVE SUMMARY

This is the Quarterly Environmental Monitoring and Audit (EM&A) Report – [Aug 2022](#) to [Oct 2022](#) specific for Environmental Permit no. EP-376/2009. The EM&A report is prepared by the Environmental Team (ET) employed under Contract No. HY/2019/18 – Wan Chai Development Phase II and Central Wanchai Bypass – Sampling, Field Measurement and Testing Works (Stage 4). This report presents the environmental monitoring and audit findings and information during the period from [27th July 2022](#) to [26th October 2022](#). The cut-off date of reporting is at 26th of each reporting period

Noise Monitoring

- ii. Noise monitoring was conducted at M1a – Harbour Road Sports Centre.
- iii. 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.
- iv. 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.
- v. With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse noise impact would be contributed by the tree planting works, the respective noise monitoring at noise monitoring station M1a - Footbridge at EX-Wanchai Harbour Road Sports Centre was temporary suspended from 27 March 2019 onwards.

Air Quality Monitoring

- vi. 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.
- vii. With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse air quality impact would be contributed by the tree planting works, the respective air quality monitoring at monitoring stations CMA5b – Pedestrian Plaza and CMA6a – Contractor HK/2012/08 Site Office, were temporary suspended from 27 March 2019 onwards.

Complaints, Notifications of Summons and Successful Prosecutions

- viii. [There was no environmental complaint recorded in this reporting quarter.](#)

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 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-125/2008).

This report documents the finding of EM&A works for Environmental Permit (EP) no. EP-376/2009, during the period [27th July 2022](#) to [26th October 2022](#). The cut-off date of reporting is the 26th of each reporting period.

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 **Monitoring Requirements** – summarizes all monitoring parameters, monitoring locations, monitoring frequency, duration and action plan.

Section 4 **Monitoring Results** – summarizes the monitoring results obtained in the reporting period.

Section 5 **Compliance Audit** – summarizes the auditing of monitoring results, all exceedances environmental parameters.

Section 6 **Complaints, Notification of summons and Prosecution** – summarizes the cumulative statistics on complaints, notification of summons and prosecution

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 **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-Build King Joint Venture HK/2012/08 – 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 EP-376/2009 by 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	Senior Resident Engineer	Mr. S.K. Lo	3519 9033	2587 1877
Ramboll 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

3. MONITORING REQUIREMENTS

3.1. Noise Monitoring

NOISE MONITORING STATION

- 3.1.1. The noise monitoring station for the Project is listed and shown in **Table 3.1** and **Figure 3.1**. [Appendix 3.1](#) shows the established Action/Limit Levels for the monitoring works.

Table 3.1 Noise Monitoring Station

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

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

- 3.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq(30\text{ minutes})}$ shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, $L_{eq(5\text{ minutes})}$ 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.
- 3.1.3. 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

- 3.1.4. 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.
- 3.1.5. 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.

3.2. Air Quality Monitoring

AIR QUALITY MONITORING STATIONS

3.2.1. The air monitoring stations for the Project are listed and shown in **Table 3.2** and **Figure 3.1**. **Appendix 3.1** shows the established Action/Limit Levels for the monitoring works.

Table 3.2 Air Quality Monitoring Stations

Station ID	Monitoring Location
CMA5b	Pedestrian Plaza
CMA6a	WDII PRE Site Office

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

3.2.2. 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.

3.2.3. 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.

3.2.4. 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

3.2.5. 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.

3.2.6. 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

3.2.7. 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.

3.2.8. 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.

3.2.9. 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.

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

4. MONITORING RESULTS

4.0.1. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in **Figure 2.1** and **Figure 3.1**

4.1. Noise Monitoring Results

4.1.1 Noise monitoring for project works under EP-376/2009 was commenced on 19 May 2015.

4.1.2 The proposed division of noise monitoring station is summarized in **Table 4.1** below.

Table 4.1 Noise Monitoring Station for Contract no. HK/2012/08

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

4.1.3 With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse noise impact would be contributed by the tree planting works, the respective noise monitoring at noise monitoring station M1a - Footbridge at EX-Wanchai Harbour Road Sports Centre was temporary suspended from 27 March 2019 onwards.

4.1.4 The noise monitoring results measured in this reporting period are reviewed and summarized. Details of continuous noise monitoring results and graphical presentation can be referred to **Appendix 4.1**

4.2. Air Quality Monitoring Results

4.2.1 Air Quality monitoring for project works under EP-376/2009 was commenced on 16 May 2015.

4.2.2 The proposed division of air quality monitoring stations are summarized in **Table 4.2** below.

Table 4.2 Air Quality Monitoring Station for Contract no. HK/2012/08

Station	Description
CMA5b	Pedestrian Plaza
CMA6a	WDII PRE Site Office

4.2.3 With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse air quality impact would be contributed by the tree planting works, the respective air quality monitoring at air



quality monitoring stations CMA5b – Pedestrian Plaza and CMA6a – Contractor HK/2012/08 Site Office were temporary suspended from 27 March 2019 onwards.

5. COMPLIANCE AUDIT

5.0.1. The Event Action Plan for construction noise and air quality are presented in [Appendix 5.1](#).

5.1. Noise Monitoring

5.1.1 With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse noise impact would be contributed by the tree planting works, the respective noise monitoring at noise monitoring station M1a - Footbridge at EX-Wanchai Harbour Road Sports Centre was temporary suspended from 27 March 2019 onwards.

5.2. Air Quality Monitoring

5.2.1 With respect to WDII RSS confirmed that the remaining works under HK/2012/08 would be tree planting works at EP-376/2009 area only, considered that no adverse air quality impact would likely be contributed by the tree planting works, the respective air quality monitoring at air quality monitoring stations CMA5b – Pedestrian Plaza and CMA6a – Contractor HK/2012/08 Site Office were temporary suspended from 27 March 2019 onwards.

5.3. Site Audit

5.3.1 As WDII RSS confirmation of construction works completion on 1 April 2020 and agreed with IEC on 3 April 2020, the weekly environmental site inspection for Contract no.HK/2012/08 under EP-376/2009 was suspended from 3 April 2020 onward.

5.4. Review of the Reasons for and the Implications of Non-compliance

5.4.1 As WDII RSS confirmation of construction works completion on 1 April 2020 and agreed with IEC on 3 April 2020, the weekly environmental site inspection for Contract no.HK/2012/08 under EP-376/2009 was suspended from 3 April 2020 onward.

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

5.5.1 As WDII RSS confirmation of construction works completion on 1 April 2020 and agreed with IEC on 3 April 2020, the weekly environmental site inspection for Contract no.HK/2012/08 under EP-376/2009 was suspended from 3 April 2020 onward.

6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

6.0.1. No environmental complaint received in this reporting quarter.

6.0.2. The details of cumulative complaint log and summary of complaints are presented in [Appendix 6.1](#).

6.0.3. No notification of summons or prosecution was received in the reporting period. Cumulative statistic on complaints and successful prosecutions are summarized in **Table 6.1** and **Table 6.2** respectively.

Table 6.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
Commencement works (May 2015) to last reporting quarter	0
August 2022 to October 2022	0
Project-to-Date	0

Table 6.2 Cumulative Statistics on Successful Prosecutions

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

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 period.
- 7.0.3. [According to the Final EM&A Reports of EP-122/2002/E, EP-356/2009, FEP-01/356/2009, FEP-02/356/2009, FEP-03/356/2009, FEP-04/356/2009, FEP-05/356/2009, FEP-06/356/2009, FEP-07/356/2009 and FEP-08/356/2009](#), the construction works at these areas of the above EPs and FEPs were completed. In view of the above, the cumulative construction impact due to the Central Reclamation Phase III (CRIII), Wan Chai Development Phase II (WDII) and Central-Wan Chai Bypass was not anticipated.
- 7.0.4. [The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were installation of green roof irrigation system, lightning protection system for noise enclosure and additional lighting at open area in the reporting period. In addition, other non-Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects were observed undertaken at Wan Chai North and North Point area before 31 August 2022. The major construction activities under Central-Wan Chai Bypass and Island Eastern Corridor Link Projects were completed on 31 August 2022.](#)
- 7.0.5. As relevant site mitigation measures for air quality and construction noise were implemented, no significant air quality impact and noise impact from construction activities was concluded in the reporting period. Besides, no construction work was conducted at EP-376 area in the reporting period. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II (WDII), Central- WanChai Bypass (CWB), Island Eastern Corridor Link projects (IECL) was insignificant.

8. CONCLUSION

8.0.1. 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.

8.0.2. No non-compliance and no prosecutions were received during the reporting period.