

CONTRACT NO: HK/2011/07

WANCHAI DEVELOPMENT PHASE II AND CENTRAL WANCHAI BYPASS SAMPLING, FIELD MEASUREMENT AND TESTING WORK (STAGE 2)

ENVIRONMENTAL PERMIT NO. EP-122/2002/D

QUARTERLY ENVIRONMENTAL MONITORING AND AUDIT REPORT

- MAY 2013 TO JULY 2013 -

CLIENTS:

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Environmental Team Leader

DATE:

21 August 2013



Ref.: AACWBIECEM00 0 4296L.13

26 August 2013

AECOM Asia Company Limited 11/F, Tower 2 Grand Central Plaza 138 Shatin Rural Committee Road Shatin, New Territories Hong Kong

By Post and Fax (2691 2649)

Attention: Mr. Conrad Ng

Dear Sir,

Re: Wan Chai Development Phase II and Central-Wan Chai Bypass Quarterly Environmental Monitoring and Audit Report (May to July 2013) for EP-122/2002/D

Reference is made to the Environmental Team's submission of the captioned Quarterly Environmental Monitoring and Audit (EM&A) Report for May to July 2013 received by email on 21 August 2013.

Please be informed that we have no adverse comment on the captioned submission and hereby write to verify the captioned submission.

Thank you very much for your kind 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

Mr. Patrick Keung

by fax: 2577 5040

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Wan Chai Development Phase II and Central Wanchai Bypass - Sampling, Field Measurement and Testing Works (Stage 2) Quarterly EM&A Report (May 2013-Jul 2013)

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EXECUTIVE SUMMARY

i. This is the Quarterly Environmental Monitoring and Audit (EM&A) Report – May 2013 to July 2013 specific for Environmental Permit no. EP-122/2002/D. The EM&A report is prepared by the Environmental Team (ET) employed under Contract No. HK/2011/07 – Wan Chai Development Phase II and Central Wanchai Bypass – Sampling, Field Measurement and Testing Works (Stage 2). This report presents the environmental monitoring and audit findings and information during the period from 1st May 2013 to 31st July 2013.

Construction Activities for the Reported Period

ii. During this reporting period, the principle work activities of the contract is included as follows:
 <u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

Table I Principal Work Activities in the reporting period

May 2042	Irma 2042	II 2042
May 2013	June 2013	July 2013
 Site preparation works 	Site preparation works	Site preparation works
 Site survey 	Site survey	Site survey
 Temporary works 	Temporary works	Temporary works
	Utilities / cooling mains	Utilities / cooling mains
	diversion	diversion
	Construction of interim	Construction of interim
	landing step	landing step
	1	1

Noise Monitoring

- iii. Continuous noise monitoring was conducted at ACL3 City Hall. No action or limit level exceedance was recorded in the reporting period.
- iv. Due to safety concerned, the location of the continuous noise monitoring station at City Hall was finely adjusted to the roof of the City Hall, Low Block on 1 May 2013.

Air Quality Monitoring

- v. 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted at ACL1 City Hall and ACL2 PLA Barracks on every six days basis.
- vi. Due to lack of electricity supply, the 24-hr TSP monitoring at the following stations were rescheduled.

ACL1: from 16 June 2013 to 17 June 2013 from 27 June 2013 to 28 June 2013

ACL2: from 16 June 2013 to 17 June 2013

vii. No limit or action level exceedance was recorded in the reporting period.

Complaints, Notifications of Summons and Successful Prosecutions

viii. There was no environmental complaint recorded in the reporting period.

1. INTRODUCTION

1.1 Scope of the Report

- 1.1.1. Lam Geotechnics Limited (LGL) has been appointed to work as the Environmental Team (ET) under Environmental Permit no. EP-122/2002/D 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 Central Reclamation Phase III Studies, Site Investigation, Design and Construction (Register No.: AEIAR-040/2001) since 1 May 2013.
- 1.1.2. This report documents the finding of EM&A works for Environmental Permit (EP) no. EP-122/2002/D, during the period from 1st May 2013 to 31st July 2013.

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 Central Reclamation Phase III - Studies, Site Investigation, Design and Construction (hereafter called "the Project") are Designated Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Central Reclamation Phase III - Studies, Site Investigation, Design and Construction (Register No. AEIAR-040/2001) has been approved on 31 August 2001.

2.2 Scope of the Project and Site Description

- 2.2.1. The design and construction of Central Reclamation Phase III involves the permanent reclamation and construction and operation of a trunk road and its road tunnel that is shown at *Figure 2.1*.
- 2.2.2. The key purpose of the study area encompasses the area of Victoria Harbour to the southeast of the new Outlying Islands Ferry Piers and north of Edinburgh Place and Lung Wui Road. The area extends eastward to Fenwick Pier Street and the Fleet Arcade, and includes the existing GPO, Star Ferry Piers, Queens Pier, City Hall, PLA Headquarters, Hong Kong Red Cross Headquarters building and the Tamar Site. The scope of the Central Reclamation, Phase III includes:
 - Reclamation and seawalls, roads and associated services, North Island Line Protection Works and Advance Trunk Road Tunnel (ATRT) for the CWB;
 - Reprovisioning of Star Ferry Pier, public landing steps, wallah wallah moorings, and motor boat/launch operators' kiosks;
 - External cooling water systems which consist of the cooling water pumping shells for future developments, and the reprovisioning of existing cooling water pumping stations and associated pipework systems and E&M works;
 - Reprovisioning of existing Leisure and Cultural Services Department (LCSD)'s facilities;
 - Provision of a flood relief path, stormwater culvert extensions, upgrading of hinterland stormwater drainage resulting from the reclamation, demolition of the existing waterfront structures and necessary landscaping;
 - The Hong Kong Station Extended Overrun Tunnel (EOT) and associated ventilation structures entrusted for construction within the CRIII works;
 - Reprovisioning of the Government Heliport at the Wan Chai PCWA and reprovisioning of the Wan Chai PCWA at Chai Wan Basin.
- 2.2.3. The project also contains various Schedule 2 DPs 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 four individual DPs under this Project. *Figure 2.1* shows the locations of these Schedule 2 DPs.



Table 2.1 Schedule 2 Designated Projects under this Project

Item	Designated Project	EIAO Reference
DP1	Central-Wanchai Bypass (CWB)	Schedule 2, Part I, A.7
DP2	Road P2 and other roads which are classified as primary/district distributor roads	Schedule 2, Part I, A.1
DP3	Reclamation works	Schedule 2, Part I, C.1
DP4	The North Island Line (NIL) Protection Works within CRIII	Schedule 2, Part I, A.7

2.2.4. The designated project work I (DP1) was awarded to China State-Leader Joint Venture HK/2012/08 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 27 May 2013.

2.3 Project Organization and Contact Personnel

- 2.3.1 Civil Engineering and Development Department is the overall project controllers for the Central Reclamation Phase III Project. 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-	Contractor under Contract	Project Director	Mr. Andrew TSE	9137 1811	2877 1522
Leader JV	no. HK/2012/08	Project Manager	Mr. Victor WU	9193 8871	
		Deputy Project Manager	Mr. George CHEUNG	9268 1918	
		Site Agent	Mr. Paul LUI	9095 7922	
		Environmental Officer	Mr. James MA	9130 9549	
		Environmental Supervisor	Mr. Ching Man, CHAN	6050 4919	
ENVIRON Hong Kong Limited	Independent Environmental Checker (IEC)	Independent Environmental Checker (IEC)	Mr. David Yeung	3465 2888	3465 2899
Lam Geotechnic s Limited	Environmental Team (ET)	Environmental Team Leader (ETL)	Mr. Raymond Dai	2882 3939	2882 3331

2.4 Principal Work and Activities

2.4.1 During this reporting period, the principle work activities of the contract is included as follows:
<u>Contract no. HK/2012/08 – Wan Chai Development Phase II – Central- Wan Chai Bypass at Wan Chai West</u>

Table 2.3 Principal Work Activities in the reporting period

May 2013	June 2013	July 2013
Site preparation works	Site preparation works	Site preparation works
• Site survey	Site survey	Site survey
 Temporary works 	• Temporary works	Temporary works
	Utilities / cooling mains	Utilities / cooling mains
	diversion	diversion
	Construction of interim	Construction of interim
	landing step	landing step

2.4.2 Implementation status of the recommended mitigation measures during this reporting period is presented in *Appendix 2.1*.



3. MONITORING REQUIREMENTS

3.1. Noise Monitoring

NOISE MONITORING STATIONS

3.1.1. The continuous 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 Continuous Noise Monitoring Stations

District	Station	Description
Central	ACL3	City Hall

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

- 3.1.2. Continuous 24-hour noise monitoring shall be carried out at the designated monitoring stations. The following is an initial guide on the regular monitoring frequency for each station on a 24 hours daily basis when noise generating activities are underway:
 - One set of measurements between 0700 and 1900 hours on normal weekdays.
 - One set of measurements between 1900 and 2300 hours on normal weekdays and 0700 and 2300 hours on public holidays.
 - One set of measurements between 2300 and 0700 hours on next day on everyday.
- 3.1.3. If construction works are extended to include works during the hours of 1900 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

MONITORING EQUIPMENT

- 3.1.4. As referred to in the Technical Memorandum ™ 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.
- 3.1.6. The sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency before deployment to the site and during each site visit. Measurements will be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB.

3.2. Air 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 Monitoring Stations

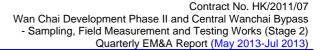
Station ID	Monitoring Location	Description	
ACL1	City Hall	Central	
ACL2	PLA Barracks	Central	

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. The environmental monitoring will be implemented based on the division of works areas of each designed project managed under different contracts with separate FEP applied by individual contractors. Overall layout showing work areas of various contracts, latest status of work commencement and monitoring stations is shown in <u>Figure 2.1</u> and <u>Figure 3.1</u>. The monitoring results are presented in according to the Individual Contract(s).
- 4.0.2. In the reporting period, the concurrent contract is:
 - Contract no. HK/2012/08 Wan Chai Development Phase II Central Wan Chai Bypass at Wan Chai West.

4.1. Noise Monitoring Results

- 4.1.1 Due to safety concerned, the location of the continuous noise monitoring station at City Hall was finely adjusted to the roof of the City Hall, Low Block on 1 May 2013.
- 4.1.2 The proposed division of noise monitoring stations is summarized in Table 4.1 below.

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

Location ID	District	Description
ACL3	Central	City Hall

Remarks: Continuous noise monitoring results and graphical presentation for ACL3 during restricted hours and night time period are for information only.

- 4.1.3 No exceedance was recorded at ACL3 City Hall in this reporting period.
- 4.1.4 Continuous 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 Monitoring Results

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

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

Station	Description
ACL1	City Hall
ACL2	PLA Barracks

4.2.2 No action or limit level exceedance was recorded at ACL1 – City Hall and ACL2 PLA Barracks in the reporting period.



4.2.3 Due to lack of electricity supply, the 24-hr TSP monitoring at the following stations were Rescheduled,

ACL1: from 16 June 2013 to 17 June 2013 from 27 June 2013 to 28 June 2013 ACL2: from 16 June 2013 to 17 June 2013

4.2.4 The Air quality monitoring results measured in this reporting period are reviewed and summarized. Details of air monitoring results and graphical presentation can be referred in *Appendix 4.2*.

4.3. Waste Monitoring Results

4.3.1 Inert and Non-inert C&D wastes were disposed in this reporting period. Details of the waste flow table are summarized in *Table 4.3*.

Table 4.3 Details of Waste Disposal for Contract no. HK/2012/08

Waste Type	Quantity this quarter	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m ³	288	288	TM38
Inert C&D materials recycled, m ³	NIL	NIL	NIL
Non-inert C&D materials disposed, m³	25	25	SENT Landfill
Non-inert C&D materials recycled, m ³	NIL	NIL	NIL
Chemical waste disposed, kg	NIL	NIL	NIL

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 No action or limit level exceedance was recorded at ACL3 – City Hall in this reporting period.

5.2. Air Monitoring

5.2.1 No action or limit level exceedance was recorded at ACL1 – City Hall and ACL2 – PLA Barracks in this reporting period.

5.3. Site Audit

5.3.1 There was no non-compliance from the site audits in the reporting period. During environmental site inspections conducted during the reporting period, minor deficiencies were noted.

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

5.4.1 There was no non-compliance from the site audits in the reporting period.

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

5.5.1 There was no particular action taken since no project-related non-compliance was recorded from the site audits and environmental monitoring in the reporting period.

6. COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

- 6.0.1. There was no environmental complaint received in this reporting period.
- 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	
May 2013 – July 2013	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. 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 Monthly EM&A reports (April, May and June 2013) of Central Reclamation Phase III (CRIII) for Contract HK12/02, installation of cable wall at PLA berth, footpath construction, underground drainage, modification to the junction of Road D8 and Road P2 and modification of timber decks at advance promenade were performed in the reporting period. The water quality monitoring was completed in October 2011 and no Project-related exceedance was recorded for air and noise monitoring. It can be concluded that cumulative construction impact due to the concurrent activities of the current projects with the Central Reclamation Phase III (CRIII) undertaken by contractor HK12/02 was insignificant.
- 7.0.3. According to the construction programme of Wan Chai Development Phase II, Central-Wan Chai Bypass and Island Eastern Corridor Link projects, the major construction activity under Wan Chai Development Phase II were marine works at HKCEC areas, cross-harbour Watermains, Fresh Watermains and Cooling Watermains Installations, tunnel works at Wan Chai East, ELS work and pipe roofing works at TS4, deep excavation at TPCWAE TCBR1W and cut and cover tunnel construction at TPCWAE. Excavation and tunnel works at Central Interchange, ELS and box culvert construction at North Point area. The major environmental impact was water quality impact at Causeway Bay and Wan Chai. Land-based construction activities were diaphragm wall construction at TS2, ELS work and pipe roofing works at TS4, deep excavation at TPCWAE TCBR1W, cut and cover tunnel construction at TPCWAE, tunnel works at Central and ELS work at North Point and tunnel works at Wan Chai East in the reporting period.
- 7.0.4. The major environmental impacts generated from tunnel works at Central and tunnel works at Wan Chai East, IECL and Causeway Bay Typhoon Shelter were undertaken in the reporting month. No significant air impact from construction activities was anticipated in the reporting month. Besides, no project-related exceedances were recorded during the air and noise environmental monitoring events in the reporting month. Thus, it is evaluated that the cumulative construction impact from the concurrent projects including Wan Chai Development Phase II 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-compliances were noted and no prosecutions were received during the reporting period.
- 8.0.3. The construction programmes of individual contracts are provided in *Appendix 8.1*.