



CONTRACT NO: HK/2011/07

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

**PROPOSAL FOR RELOCATION OF AIR QUALITY
MONITORING STATION AT PEOPLE'S LIBERATION
ARMY HEADQUARTER (ACL2)**

CLIENTS:

**Civil Engineering and Development
Department**

PREPARED BY:

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CHECKED BY:

Raymond Dai
Environmental Team Leader

DATE:

23 October 2013

Ref.: AACWBIECEM00_0_4521L.13 (Revised)

30 October 2013

Lam Geotechnics Limited
11/F Centre Point
181-185 Gloucester Road
Wan Chai, Hong Kong

By Post and Fax (2882 3331)

Attention: Mr. Raymond DAI

Dear Sir,

**Re: Contract No. HK/2011/07
Wan Chai Development Phase II and Central-Wan Chai Bypass –
Sampling, Field Measurement and Testing Works (Stage 2)
Proposal for Relocation of Air Quality Monitoring Station at People's
Liberation Army Headquarter (ACL2)**

Reference is made to your submission of the captioned proposal dated 23 October 2013 received by E-mail on 23 October 2013 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission.

Thank you for your kind attention.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c. AECOM
AECOM

Mr. Frankie Fan
Mr. Peter Poon (PRE)

by fax: 2587 1877
by fax: 3912 3010

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PROPOSAL FOR RELOCATION OF AIR QUALITY MONITORING STATION AT PEOPLE'S LIBERATION ARMY HEADQUARTER (ACL2)

1. Introduction

With respect to the large scale renovation works at People's Liberation Army Headquarter (PLA Headquarter) currently undertaken, it was observed that the on-going renovation works at PLA Headquarter would lead to potential non-designated project related dust impact to the monitoring station and such impact is considered as irrelevant to the WDII-CWB project works. In addition, as advised by the PLA Headquarters, the access within the area of the premises poses a potential safety concern for conducting monitoring. The letter reference from PLA Headquarter is attached in **Appendix A**.

As such, it presents the need to relocate the existing air quality monitoring station namely ACL2 to other appropriate and representative location for monitoring dust impact in relate to WDII-CWB Project works within the Central Reclamation Phase III area.

2. Alternative locations for proposed relocation of air monitoring station

Based on the criteria as stated in Section 2.5.4 of the approved EM&A manual under Central Reclamation Phase III, when alternative monitoring locations are proposed, the location shall at the site boundary or such locations close to the major dust emission source, or close to sensitive receivers. After reviewing all locations in the vicinity of the current construction works area, two locations nearest to the current major works area under HK/2012/08 including the Contractor HK/2012/08 site office and Fleet Arcade (Previously known as Serviceman's Guides Association) were selected for relocation review. The location of the existing and proposed monitoring stations are shown in **Appendix B**.

2.1 Set up of monitoring station at Fleet Arcade (A29- Serviceman's Guides Association)

Among the list of Air Sensitive Receivers as stated in Section 2.5.2 of the approved EM&A manual under Central Reclamation Phase III, the Fleet Arcade was selected as the potential location for relocation of monitoring station owing to its nature as air sensitive receiver and closely located to the major dust emission source. Upon joint site visit with the WDII RSS and the IEC, no location within the premises was deemed suitable for the set-up of air monitoring station. The finding of the site visit is attached in **Appendix C**.

As such, it is considered that the set up of the air monitoring station within the Fleet Arcade is not feasible.

2.2 Set up of monitoring station at Contractor HK/2012/08 Site Office

After reviewing among locations in the vicinity of the current construction works area, it was considered that the Contractor HK/2012/08 site office to be another appropriate location for the relocation of air quality station ACL2 with the following justification.

The Contractor HK/2012/08 site office (namely ACL2a as shown in **Appendix B**) was selected as alternative location because it is located closest to the major dust generating source and represents the worst case scenario in case of any air quality deterioration resulting from major construction activities generated by DP works under Contract HK/2012/08.

As the set-up of the air monitoring station within the Contractor HK/2012/08 was considered feasible, the baseline reference for the proposed relocation is reviewed and summarized as below.

Baseline Monitoring Reference

- a) According to the approved EM&A manual under Central Reclamation Phase III, there should not be any construction or dust generating activities in the vicinity of the monitoring station during the baseline monitoring. The baseline monitoring shall also be conducted at the period when the highest dust impact is expected. However, the current construction activities undertaken by Contract HK/2012/08 in the vicinity of the proposed monitoring location will be continuous during every normal daytime and during restricted hours that are allowed in their valid CNP. As such, it is considered not feasible to conduct baseline air quality monitoring at the proposed monitoring location at this stage in accordance with the requirements of the EM&A Manual.
 - b) In order to avoid any disturbance to the progress of air quality monitoring undertaken and to effectively monitor the potential air quality impact in relate to Project works, it is considered that the baseline air quality monitoring data at another baseline air quality monitoring station in the vicinity of the proposed location, the Servicemen's Guides Association (CMA6), could be adopted for reference in determining the action and limit level at the proposed location that they have similar nature of surrounding environment and located in close proximity.
 - c) According to the approved air quality baseline monitoring report in April 2010, the baseline monitoring location (CMA6) was considered in proximity to the relocated location for ACL2a. The location of the proposed monitoring station at Contract HK/2012/08 Site Office and the baseline monitoring location of CMA6 is shown in **Appendix B**.
 - d) As such, it is proposed that baseline results of baseline monitoring station CMA6 could be adopted by the proposed location at Contract HK/2012/08 site office as the baseline reference since the two stations are in close proximity and with similar surrounding environment to account for the ambient air quality
-

at the monitoring location. In addition, the prevailing meteorological conditions at the two locations are considered to be similar.

Hence, the action and limit level for monitoring station CMA6a shall be adopted by the proposed relocated station ACL2a and the monitoring result obtained at monitoring station ACL2a shall be reported as construction impact monitoring. The summary of action and limit level proposed to be adapted by ACL2a is shown in **Appendix D**.

After reviewing the feasibility of setting-up the monitoring station and the availability of baseline monitoring reference, the relocation of the existing air quality monitoring station (ACL2) to Contractor HK/2012/08 Site Office (ACL2a) is hereby proposed

3. **Equipment**

Component equipment of High Volume Sampler (HVS) are listed below. Details of equipment are as follows. Specifications of proposed equipment are shown in **Appendix E**.

High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-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. Proposed Monitoring Station

The proposed relocated air quality monitoring station (ACL2a) is located at Contractor HK/2012/08 Site Office. The location and set-up for the proposed relocation monitoring station within HK/2012/08 Site Office is enclosed in

Appendix E.

5. Commencement of Monitoring at the relocated station (ACL2a)

- i. All activities are subjected to client's (CEDD's) instructions.
- ii. After received approval for relocation:
 - All equipment for installation shall be prepared within a month when this proposal approved by the EPD and IEC.
 - A 2-day T&C shall be conducted after HVS installation.

Appendix A

Derek Lo

From: lamgroup [lamgroup@hk2china.com]
Sent: Tuesday, October 22, 2013 4:58 PM
To: dereklo@lamenviro.com
Subject: Fw: {*High Spam?*(23.10)} 建議暫時搬離安裝在中環軍營之空氣懸浮粒子監測儀器事宜

----- Original Message -----

From: jason_chan
To: dereklo@lamenviro.com
Sent: Tuesday, October 22, 2013 4:31 PM
Subject: {*High Spam?*(23.10)} 建議暫時搬離安裝在中環軍營之空氣懸浮粒子監測儀器事宜

致：華益環保科技有限公司

羅旭奎先生

關於：建議暫時搬離安裝在中環軍營之空氣懸浮粒子監測儀器事宜

由於中環軍營 安樓現正進行大廈外牆翻新工程，在工程施工期間，安樓外牆現正進行搭建臨時高空工作棚架，同時大量外牆高空工作將會陸續展開，因此為免 貴司員工安全起見以免發生意外，建議 貴司儘快把上述空氣懸浮粒子監測儀器暫時搬離中環軍營，直至整項翻新工程完成為止。

此致

華益環保科技有限公司

謝謝!

中国海外物业服务有限公司

駐中環軍營 物業管理處

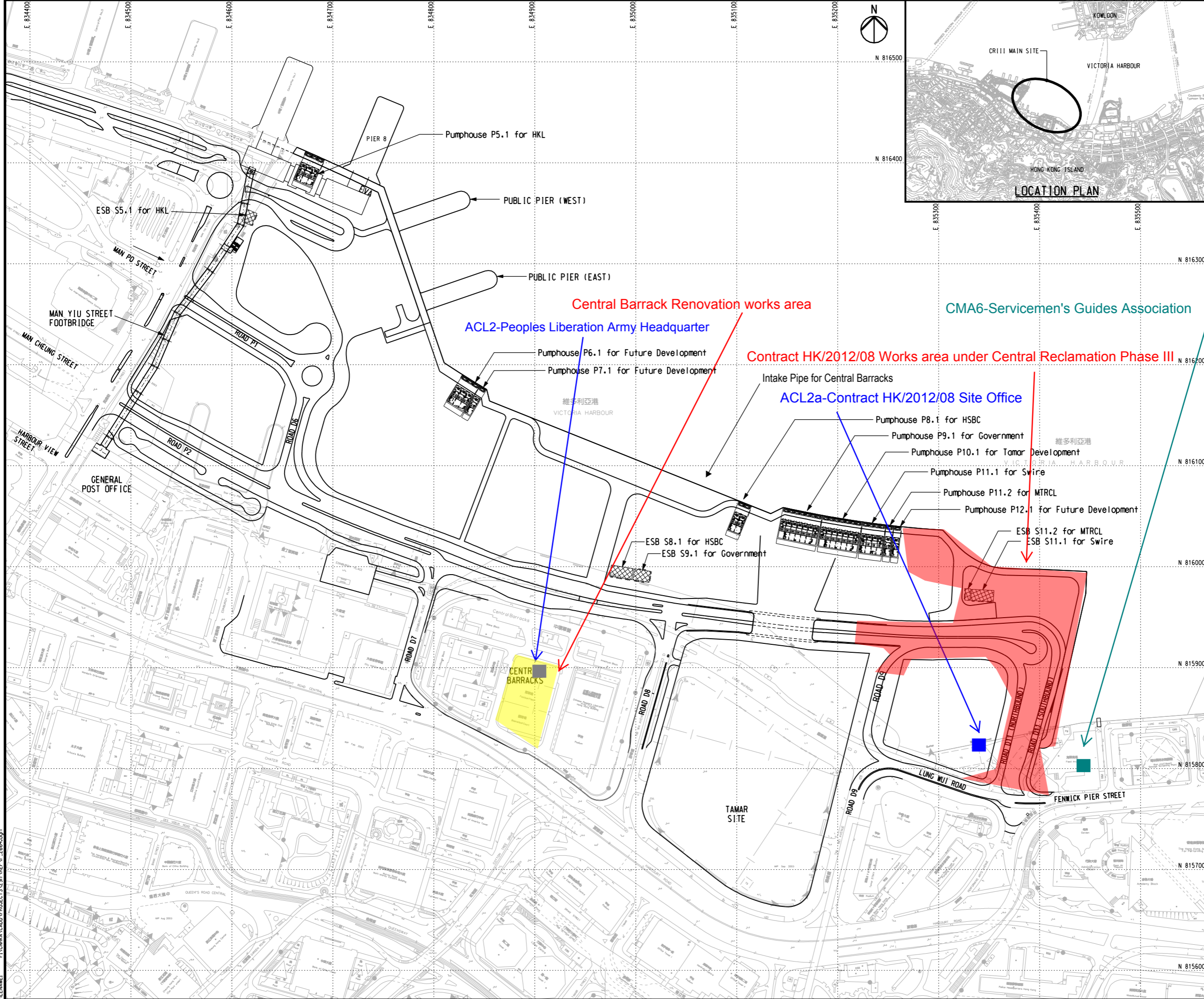
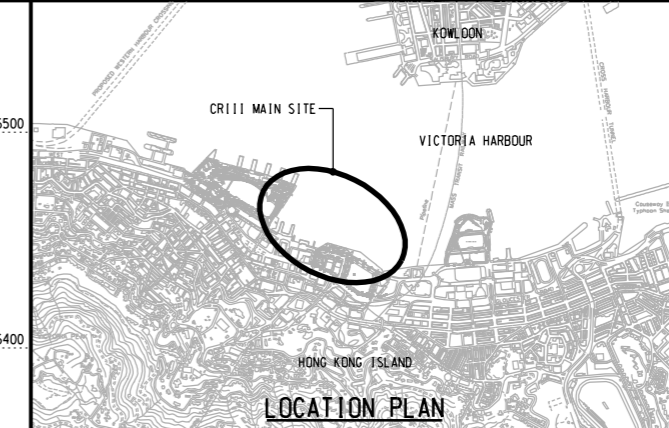
維修經陳輝明先生

二零一三年十月二十二日

10/23/2013

Appendix B

DO NOT SCALE DRAWINGS, VERIFY ALL DIMENSIONS ON SITE



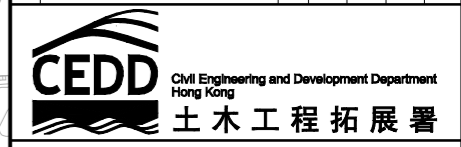
CMA6-Servicemen's Guides Association

Central Barrack Renovation works area
ACL2-Peoples Liberation Army Headquarter

Contract HK/2012/08 Works area under Central Reclamation Phase III

ACL2a-Contract HK/2012/08 Site Office

REV	DESCRIPTION	BY	DATE	CHK'D	AUTH



CONTRACT NO. HK 12/02
Central Reclamation Phase III
Engineering Works

DRAWING TITLE
PUMP HOUSES AND ESBS
LOCATION PLAN

STATUS				
FOR INFORMATION				
SCALE AT A1	DESIGNED	DRAWN	CHECKED	AUTHORISED
1:1750 AT A1 1:13500 AT A3	AY	CKW	DL	TN
	DATE	DATE	DATE	DATE
	FEB11	FEB11	FEB11	FEB11

DRAWING NUMBER
FIGURE 1

PRINTED BY: db065544 2/25/2011 10:05 AM
FILENAME: P:\CNHKA\CADD\PROJECTS\287\REP_V_2864.dgn

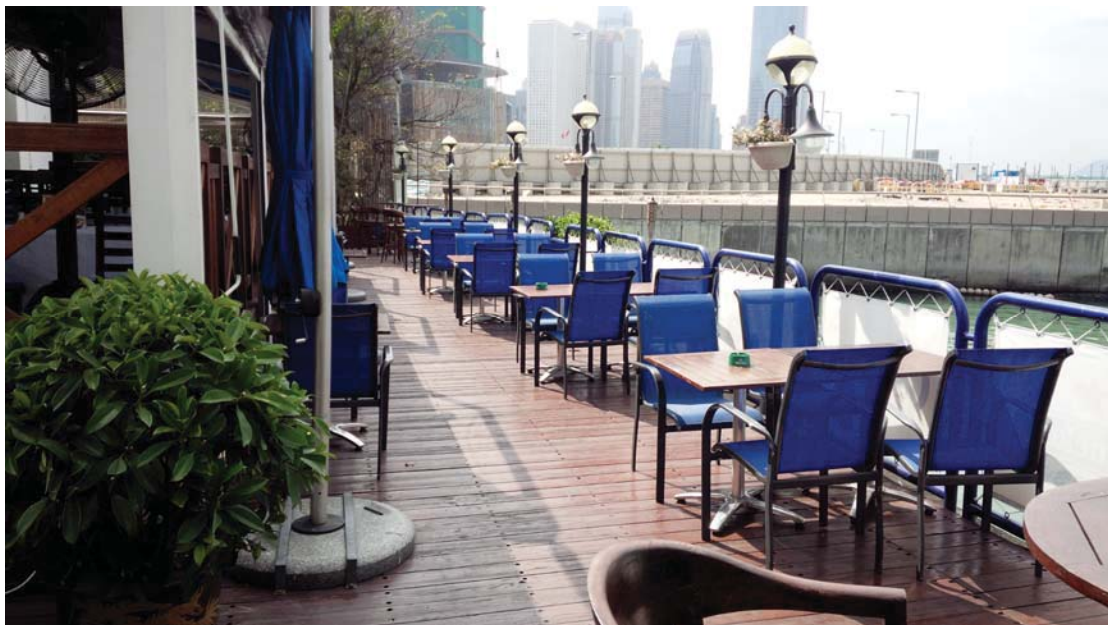
© 2002 ACL

Appendix C

Potential Installation Location of HVS



Location 1 (G/F): Not feasible. Vehicular Access Road, not oriented to CRIII works area.



Location 2 (G/F): Not feasible. Restaurant area, not preferred by stakeholder.



Location 3 (G/F): Not feasible. Car park area, no available space for installation.



Location 4 (1/F, 2/F): Not feasible. Location blocked by building/ trees, affect the access area of staircase.

Appendix D



Action and Limit Level

Action and Limit Level for Air Monitoring

Monitoring Location	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
CMA6a	300.1	500	187.3	260



Manufacturer of Air Pollution Monitoring Equipment

TE-5170

HIGH VOLUME TOTAL SUSPENDED PARTICULATE (TSP) IN AMBIENT AIR

Mass Flow Controlled TSP High Volume Air Sampling System includes:

- anodized aluminum shelter
- 8" x 10" stainless steel filter holder with probe hole
- blower motor assembly
- continuous flow/pressure recorder
- elapsed time indicator
- mass flow controller with 20–60 scfm air flow probe
- 7-day mechanical timer
- 110v/60hz or 220v/50hz

Meets EPA Code of Federal Regulation, Appendix B to Part 50

Specifications

- Flow rate: 39–60 cfm (1.1–1.7m³)
- Filter media: Glass fiber filter 8" x 10" (TE-G653)
- Flow control: Mass flow controlled with 20–60 scfm air flow probe (TE-300–310)
- Motor blower: 2-stage vacuum 0.6 hp: 110v/60hz (TE-116311)
220v/50hz (TE-116312)
- Flow indicator: Flow/pressure recorder (TE-5009)
- Timer: 7-day mechanical timer (TE-5007)
- Elapsed time indicator device: Elapsed time indicator (TE-5012)
- Motor specifications: 110v/60hz—Part TE-116311 double ball bearing, thru-flow discharge
220v/50hz—Part TE-116312 ball/sleeve bearing, thru-flow discharge
Start up amps: 12 Amps
Running amps: 6 Amps

Shipping information (two cartons)

- Size/weight: 45.5" x 22.5" x 20"/75 lbs
19" x 14" x 14"/9 lbs

TE-5170D

MASS FLOW CONTROLLED TSP AIR SAMPLER

Mass Flow Controlled TSP High Volume Air Sampling System includes:

- anodized aluminum shelter
- 8" x 10" stainless steel filter holder with probe hole
- blower motor assembly
- continuous flow/pressure recorder
- 110v/60hz or 220v/50hz

Meets EPA Code of Federal Regulation, Appendix B to Part 50

Same as TE-5170 except:

- Flow control/Timer: TE-300–312
Combination mass flow controller solid state digital timer and digital elapsed time indicator w/20-60 scfm air flow probe

Appendix E



Proposed Monitoring Location of Air Station within Site Office



Sample photo for set-up of High Volume sampler at elevated platform