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# Development at Former Marine Police Headquarters KIL 11161 Environmental Monitoring & Audit Report for April 2008

**(Ref No. 3.12/050/2006)**

**May 2008**

**Report Certified by the Environmental Team Leader:** _____

**Report Verified by the Independent Environmental Checker:** _____

Content

## EXECUTIVE SUMMARY

This is the forty-seventh Environmental Monitoring & Audit report prepared by Nature & Technologies (HK) Ltd. for the development of the former Marine Police Headquarter. Weekly site audit inspections were performed by the Environmental Team on 8, 16 and 23 April 2008. This report therefore documents the impact environmental monitoring and audit work for the former Marine Police Headquarter development for April 2008.

Air and noise monitoring have been carried out in accordance with the EM&A Manual. Tree photographic survey is also provided.

Due to the construction site development, air quality monitoring at A3 was not possible and application to EPD for change of location has been made.

The contractor advised that termination of monument measurement and has been approved and hence monument measurement results are not made in the reporting month.

Superstructure furnishing was the major activity carried out within the project site in the reporting month. There was also small scale excavation carried out in the reporting month. No exceedance on TSP was recorded.

There were four limit level exceedances for noise monitoring recorded in the reporting month. Investigation showed that the exceedances were due to other activities not carried out within the project site as there was no noisy operation carried out on site during the period when the limit level exceedances were recorded.

There were two complaints logged by public and EPD concerning the dust nuisance and the water discharge arrangement in site. After investigation, tarpaulin screen plus increased water sprays were used to reduce the dust nuisance and the water discharge to the gully by possibly utility workers was removed. Communication within the site was enhanced to prevent improper water discharge by other parties. The complaints are thus resolved.

No notifications of summons, prosecutions or non-compliances were received. The site was generally satisfactory and there were a few improvement measures for further pursuit. These include the use of drip tray for all oily containers, improvement of wheel washing facility and avoid tire track left on road, reinstatement of wastewater treatment system proper covering and storage of general refuse and continual protection of the preserved monument structure and closer monitoring of trees. As a section of the site has been handed over to the contractor for Kowloon Southern Link Project, it is necessary to ensure that the Kowloon Southern Link contractor will comply with present environmental protection requirements.

## 1. Introduction

1.1. Subsequent to the completion of works by Konwall Construction & Engineering Co. Ltd., Hien Lee Engineering Co. Ltd. ["HL"] took over the next phase for the development of the Former Marine Police Headquarters ["FMPHQ"] commencing May 2007. HL in turn has commissioned Nature & Technologies (HK) Ltd. ["N&T"] to conduct the environmental monitoring and audit ["EM&A"] work for the project.

1.2. Pursuant to Clauses 2.3 of the Environmental Permit ["EP"] EP-184/2004 of the project, the draft EM&A Manual was submitted on 29 April 2004 and the revised version was later approved in end July 2004. Due to project changes, the EM&A Manual was revised in May 2006. Further revision of the EM&A Manual to cater for the present phase of the construction works was submitted to EPD and approval was granted on 22 June 2007.

1.3. This report documents the EM&A work and its findings for April 2008 and is the forty-seventh monthly report documenting the EM&A work since the commencement of the construction work.

## 2. Environmental & Implementation Status

Environmental Status

2.1. The location, site layout, historic buildings and structures to be preserved of the Project are shown in Figure 2.1.

2.2. On 18 April 2008, Mr Alex Chan was appointed as the new Independent Environmental Checker ["IEC"] and the appointment was also accepted by EPD on 24 April 2008.

2.3. The key personnel contact names and telephone numbers with respect to environmental protection works are given in Table 2.1. Environmental Protection Department ["EPD"] is the control authority and may contact any party where necessary for their statutory duties.

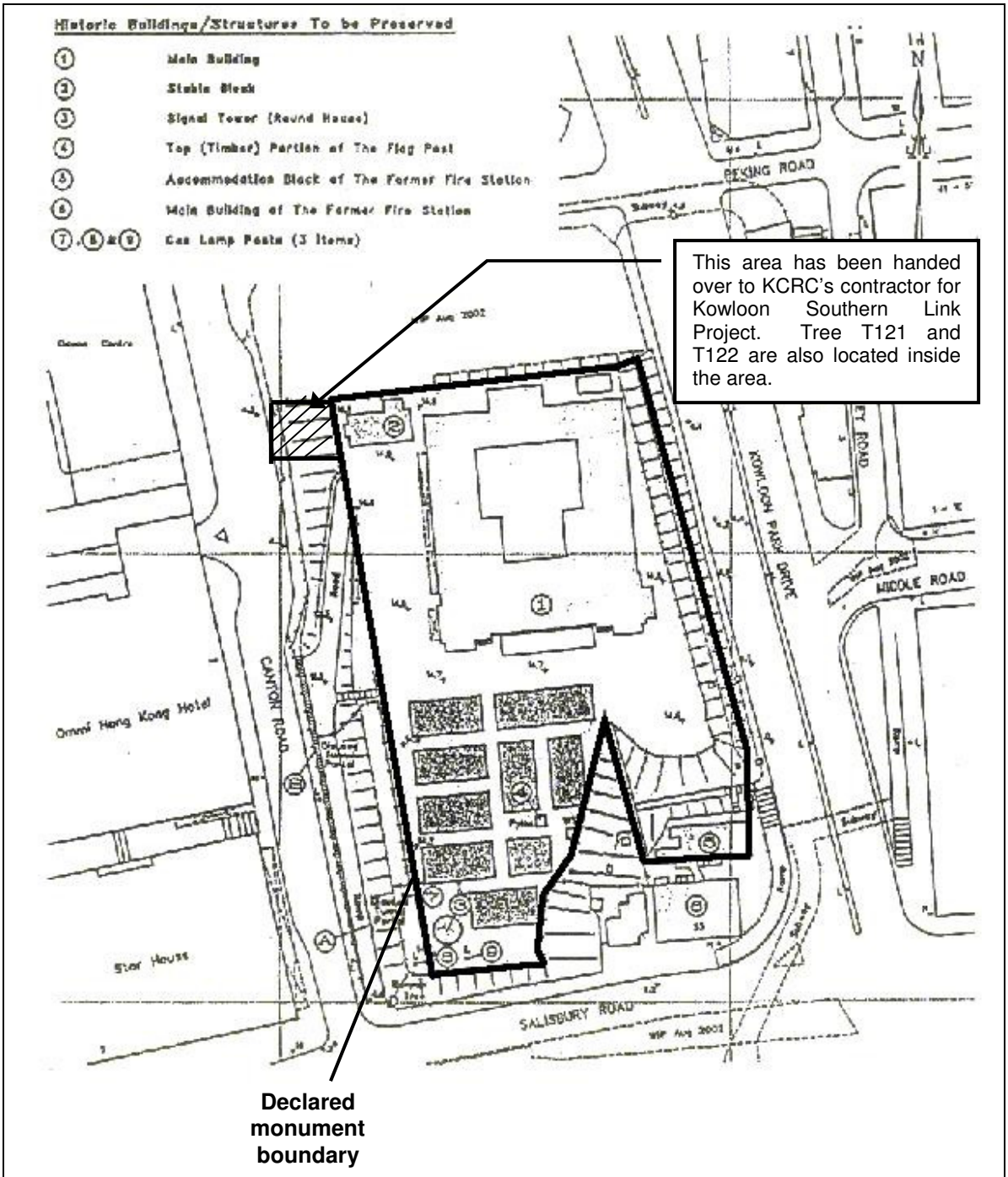
Table 2.1 Key Contacts of the Project Team

| Party | Company | Contact Person | Phone |
|---|---|---|---|
| Permit Holder | Flying Snow Ltd. | Mr H S Chan | 2112 2634 |
| Project Architect ["AR"] | A+T Design Ltd. | Mr Daniel Lin | 2858 4778 |
| Contractor | Hien Lee Engineering Co., Ltd | Mr Howard Lui | 9108 3955 |
| Independent Environmental Checker ["IEC"] | CH2M HILL Hong Kong Ltd. | Mr. Alex Chan | 3105 8686 |
| Environmental Team ["ET"] Leader | Nature & Technologies (HK) Ltd. | Ir Dr Gabriel C K Lam | 2877 3122 |

2.4. Superstructure furnishing was the main activity carried out within the project site in April 2008. There was also small scaled excavation.

2.5. The construction programme with milestones of environmental protection/mitigation activities annotated is given in Appendix A.

2.6. It is noted that a small section of the site enclosing trees T121/T122 has been recently handed over to the contractor for the Kowloon Southern Link Project ["KSL"] as also shown in Figure 2.1. It is understood that this KSL contractor has committed to comply with the requirements of EM&A Manual and EP conditions for the present site.




| | | |
|---|---|---|
| Figure 2.1 | Location, site layout with the location of site where it was handed over to KCRC's Contractor for KSL Project, historic buildings and structures to be preserved | Scale: N.T.S |

Implementation Status

2.7. The construction and operational phase impacts of the project have been assessed and presented in the Project Profile issued in January 2004. The Project Profile also specified the recommended environmental mitigation measures to minimize the potential adverse environmental impacts identified. An implementation schedule of the recommended environmental mitigation measures is prepared as part of the Project Profile is contained in Appendix B.

2.8. Similar to the presentation made to the previous contractor on 2 June 2004, a presentation was also made to the construction personnel of the new contractor on 26 April 2007 regarding the environmental protection requirements on the site. Working personnel not present in the presentation should be briefed separately by the Contractor on the requirements for environmental protection.

2.9. Site environmental audits were carried out by ET on a weekly basis and IEC at least once per month to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. In this reporting month, site audits were conducted on 8, 16 and 23 April 2008. These site audit checklist reports and recommendations are given in Appendix C.

2.10. It is noted that the various environmental protection measures have been implemented on site. The following are also noted for April 2008 required for further improvement:

- Use of drip tray for all oily containers
- Improvement of wheel washing facility and avoid tire track left on road.
- Reinstatement of wastewater treatment system
- Proper cover and storage of general refuse.
- Continual protection and closer monitoring of the trees and historical buildings.

2.11. It is also necessary to ensure that the KSL contractor will comply with the requirements of EM&A Manual and EP conditions for the present site for the section of the site already handed over to them.

2.12. The summary status of the submission under the EP is given in Table 2.2.

Table 2.2 Status of submission under EP up to April 2008

| Item No. | Description | Submission Date to EPD |
|---|---|---|
| 1. | Method Statement detailing the protective measures on declared monument buildings | 06/2/2004 |
| 2. | Landscape Mitigation and Tree Preservation Proposal | 06/2/2004 |
| 3. | Draft EM&A Manual | 29/4/2004 |
| 4. | Revised Landscape Mitigation and Tree Preservation Proposal | 15/5/2004 |
| 5. | Draft Waste Management Plan | 14/6/2004 |
| 6. | Final Method Statement detailing the protective measures on declared monument buildings which is approved | 14/6/2004 |
| 7. | Final Landscape Mitigation and Tree Preservation Proposal | 21/6/2004 |
| 8. | Baseline Monitoring Report | 25/6/2004 |
| 9. | Monthly EM&A Report for June 2004 | 21/7/2004 |
| 10. | Revised EM&A Manual (Rev. 1) which is approved | 26/7/2004 |
| 11. | Revised Landscape Mitigation and Tree Preservation Proposal which is approved | 26/7/2004 |
| 12. | Revised Waste Management Plan which is approved | 17/8/2004 |
| 13. | Monthly EM&A Report for July 2004 | 25/8/2004 |
| 14. | Revised EM&A Manual (Rev. 2) which is approved | 06/9/2004 |
| 15. | Monthly EM&A Report for August 2004 | 21/9/2004 |
| 16. | Quarterly EM&A Report for June to August 2004 | 06/10/2004 |
| 17. | Monthly EM&A Report for September 2004 | 27/10/2004 |
| 18. | Monthly EM&A Report for October 2004 | 15/11/2004 |
| 19. | Monthly EM&A Report for November 2004 | 25/12/2004 |
| 20. | Quarterly EM&A Report for September to December 2004 | 20/1/2005 |
| 21. | Monthly EM&A Report for December 2004 | 28/1/2005 |
| 22. | Monthly EM&A Report for January 2005 | 18/3/2005 |
| 23. | Monthly EM&A Report for February 2005 | 04/4/2005 |
| 24. | Monthly EM&A Report for March 2005 | 10/4/2005 |
| 25. | Quarterly EM&A Report for December 2004 to February 2005 | 13/4/2005 |
| 26. | Revised EM&A Manual (April 2005) which is approved | 11/5/2005 |
| 27. | Revised Waste Management Plan (April 2005) which is approved | 11/5/2005 |
| 28. | Monthly EM&A Report for April 2005 | 13/6/2005 |
| 29. | Monthly EM&A Report for May 2005 | 09/7/2005 |
| 30. | Quarterly EM&A Report for March to May 2005 | 29/7/2005 |
| 31. | Monthly EM&A Report for June 2005 | 08/8/2005 |
| 32. | Monthly EM&A Report for July 2005 | 02/9/2005 |
| 33. | Monthly EM&A Report for August 2005 | 14/10/2005 |
| 34. | Quarterly EM&A Report for June to August 2005 | 28/10/2005 |
| 35. | Monthly EM&A Report for September 2005 | 04/11/2005 |
| 36. | Monthly EM&A Report for October 2005 | 21/12/2005 |
| 37. | Monthly EM&A Report for November 2005 | 07/1/2006 |
| 38. | Quarterly EM&A Report for September to November 2005 | 12/1/2006 |
| 39. | Monthly EM&A Report for December 2005 | 09/2/2006 |
| 40. | Monthly EM&A Report for January 2006 | 07/3/2006 |
| 41. | Monthly EM&A Report for February 2006 | 31/3/2006 |
| 42. | Quarterly EM&A Report for December 2005 to February 2006 | 6/4/2006 |
| 43. | Monthly EM&A Report for March 2006 | 11/5/2006 |
| 44. | Revised EM&A Manual | 11/5/2006 |
| 45. | Revised Waste Management Plan (WMP) | 11/5/2006 |
| 46. | Monthly EM&A Report for April 2006 | 9/6/2006 |

Table 2.2(continued) Status of submission under EP up to April 2008

| Item No. | Description | Submission Date to EPD |
|---|---|---|
| 47. | Monthly EM&A Report for May 2006 | 13/7/2006 |
| 48. | Monthly EM&A Report for June 2006 | 11/8/2006 |
| 49. | Quarterly EM&A Report for March 2006 to May 2006 | 11/8/2006 |
| 50. | Monthly EM&A Report for July 2006 | 14/9/2006 |
| 51. | Monthly EM&A Report for August 2006 | 11/10/2006 |
| 52. | Quarterly EM&A Report for June 2006 to August 2006 | 28/10/2006 |
| 53. | Monthly EM&A Report for September 2006 | 6/11/2006 |
| 54. | Monthly EM&A Report for October 2006 | 15/12/2006 |
| 55. | Monthly EM&A Report for November 2006 | 6/1/2007 |
| 56. | Monthly EM&A Report for December 2006 | 2/3/2007 |
| 57. | Monthly EM&A Report for January 2007 | 16/3/2007 |
| 58. | Monthly EM&A Report for February 2007 | 17/4/2007 |
| 59. | Monthly EM&A Report for March 2007 | 4/5/2007 |
| 60. | Quarterly EM&A Report for December 2006 to February 2007 | 4/5/2007 |
| 61. | Revised EM&A Manual | 12/6/2007 |
| 62. | Revised Waste Management Plan (WMP) | 12/6/2007 |
| 63. | Monthly EM&A Report for April 2007 | 12/6/2007 |
| 64. | Monthly EM&A Report for May 2007 | 14/7/2007 |
| 65. | Quarterly EM&A Report for March 2007 to May 2007 | 14/7/2007 |
| 66. | Monthly EM&A Report for June 2007 | 14/8/2007 |
| 67. | Monthly EM&A Report for July 2007 | 10/9/2007 |
| 68. | Monthly EM&A Report for August 2007 | 16/10/2007 |
| 69. | Quarterly EM&A Report for June 2007 to August 2007 | 16/10/2007 |
| 70. | Monthly EM&A Report for September 2007 | 28/11/2007 |
| 71. | Monthly EM&A Report for October 2007 | 27/12/2007 |
| 72. | Monthly EM&A Report for November 2007 | 19/1/2008 |
| 73. | Quarterly EM&A Report for September 2007 to November 2007 | 19/1/2008 |
| 74. | Monthly EM&A Report for December 2007 | 15/2/2008 |
| 75. | Monthly EM&A Report for January 2008 | 11/3/2008 |
| 76. | Monthly EM&A Report for February 2008 | 14/4/2008 |
| 77. | Quarterly EM&A Report for December 2007 to February 2008 | 14/4/2008 |

## 3. Air Quality

3.1. In accordance with the EM&A Manual, 1-hour and 24-hour Total Suspended Particulate ["TSP"] monitoring was conducted to monitor the air quality. For 1-hour TSP monitoring, the sampling frequency was of at least three times in every six-days. For 24-hour TSP monitoring, the sampling frequency was at least once in every six-days.

Action and Limit Levels

3.2. The calculation of the Action and Limit ["AL"] Levels was based on the baseline monitoring results. The AL levels for dust are set in Table 3.1 and 3.2.

Table 3.1 AL levels for 1-hour TSP

| Location | Action | Limit |
|---|---|---|
| A1 | 382 | 500 |
| A2a | 394 | 500 |
| A3 | 389 | 500 |
| A4 | 384 | 500 |

Table 3.2 AL levels for 24-hour TSP

| Location | Action | Limit |
|---|---|---|
| A1 | 191 | 260 |
| A2a | 193 | 260 |
| A3 | 182 | 260 |
| A4 | 187 | 260 |

Event and Action Plan for Construction Phase Air Quality

3.3. According to the EM&A Manual, the ET Leader, IEC, AR, and Contractor should undertake relevant actions in accordance with the Action Plan stated in Table 3.3 below should non-compliance of the air quality criteria occurs.

Table 3.3 Event/Action Plan for Air Quality (Dust)

| EVENT | ACTION (to be taken as immediate as practicable) | | | |
|---|---|---|---|---|
| | ET | IEC | AR | CONTRACTOR |
| Action Level being exceeded for one sample | 1. Identify source;<br>2. Inform IEC and AR;<br>3. Repeat measurement to confirm finding;<br>4. Increase monitoring frequency to daily | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method. | 1. Notify Contractor. | 1. Rectify any unacceptable practice;<br>2. Amend working methods if appropriate. |
| Action Level being exceeded for two or more consecutive samples | 1. Identify source;<br>2. Inform IEC and AR;<br>3. Repeat measurements to confirm findings'<br>4. Increase monitoring frequency to daily;<br>5. Discuss with IEC and Contractor on remedial actions required;<br>6. If exceedance continues, arrange meeting with IEC and AR;<br>7. If exceedance stops, cease additional monitoring. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss with ET and Contractor on possible remedial measures;<br>4. Advise the AR on the effectiveness of the proposed remedial measures;<br>5. Supervise implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Ensure remedial measures are properly implemented. | 1. Submit proposals for remedial actions to IEC within 3 working days of notification;<br>2. Implement the agreed proposals;<br>3. Amend proposal if appropriate. |
| Limit Level being exceeded for one sample | 1. Identify source;<br>2. Inform IEC, AR and EPD;<br>3. Repeat measurement to confirm finding;<br>4. Increase monitoring frequency to daily;<br>5. Assess effectiveness of Contractor's remedial actions;<br>6. Keep EPD and AR informed of the results. | 1. Checking monitoring data submitted by ET and Contractor's method;<br>2. Discuss with Contractor on the possible mitigation measures;<br>3. Advise AR on the effectiveness of mitigation measures and supervise their implementation. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Check monitoring data and Contractor's working methods;<br>4. Discuss with IEC, ET and Contractor potential remedial actions;<br>5. Ensure remedial actions properly implemented. | 1. Take immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to AR within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Amend proposal if appropriate. |
| Limit Level being exceeded for two or more consecutive samples | 1. Identify source;<br>2. Inform AR and EPD the causes & actions taken for the exceedances;<br>3. Repeat measurement to confirm findings;<br>4. Increase monitoring frequency to daily;<br>5. Investigate the causes of exceedance<br>6. Arrange meeting with EPD and AR to discuss the remedial actions to be taken;<br>7. Assess effectiveness of Contractor's remedial actions and keep EPD and AR informed of the results;<br>8. If exceedance stops, cease additional monitoring. | 1. Checking monitoring data submitted by ET and Contractor's method;<br>2. Discuss with Contractor on the possible mitigation measures;<br>3. Review the proposed mitigation measures submitted by Contractor and advise the AR accordingly;<br>4. Supervise the implementation of mitigation measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>4. Discuss amongst IEC, ET and the Contractor potential remedial actions;<br>5. Review Contractor's remedial actions whenever necessary to assure their effectiveness;<br>6. 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. | 1. Take immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to AR within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Resubmit proposals if problem still not resolved;<br>5. Stop the relevant portion of works as determined by the AR until the exceedance is abated. |

Monitoring Locations

3.4. Designated air quality monitoring locations were selected for impact monitoring based on the EM&A Manual Section 3.8. They are shown in Figure 3.1 and briefly described below:

- A1 is located on the rooftop of the Consumer Council office east of the construction site, estimated to be about 11m above ground.
- A2 is at the Cultural Centre Studio Theatre podium level south of the construction site, estimated to be about 5m above ground. Monitoring at this location has not yet commenced at the time of preparation of this report as permission to carry out monitoring there has not been received.
- A2a is at south boundary of the construction site facing the Cultural Centre Studio Theatre selected as an alternative location to A2 in consultation with the IEC, estimated to be about 6m above ground. This is needed since permission from the Cultural Centre for monitoring there is not yet received and in order to reduce the delay to the construction programme by the permission.
- A3 is at the west site boundary of the construction site on top of the existing hoarding, estimated to be about 5m above ground. This position is slightly different to that originally proposed in the Project Profile due to the inability to obtain permission to gain access to the building at Star House or Marco Polo Hongkong Hotel for measurement and that the present revised position will provide a more conservative measurement for environmental protection
- A4 is at the site boundary north of the construction site on top of the existing hoarding, estimated to be about 13m above ground.

3.5. Impact air quality monitoring (both 1-hour and 24-hour TSP) was carried out for April 2008. The monitoring dates for each station are summarised in Table 3.4.

Table 3.4 Exact monitoring periods for the impact air monitoring locations

| Location | Monitoring period | |
|---|---|---|
| | 1-hour TSP | 24-hour TSP |
| A1 | (1, 7, 11, 17, 23 and 29)/4/2008 | (1, 7, 11, 17, 23 and 29)/4/2008 |
| A2a | (1, 7, 11, 17, 23 and 29)/4/2008 | (1, 7, 11, 17, 23 and 29)/4/2008 |
| A3 | (1 and 7)/4/2008 | (1 and 7)/4/2008 |
| A4 | (1, 7, 11, 17, 23 and 29)/4/2008 | (1, 7, 11, 17, 23 and 29)/4/2008 |

3.6. Due to the construction site development, air quality monitoring at A3 was no longer possible after 7 April 2008 due to the removal of the hoarding facing Canton Road. Proposal to relocate A3 to a new A3a location has been submitted to EPD on 28 April 2008 pending for their approval. Air quality monitoring at A3a will be arranged once the approval is received.

Monitoring Equipment

3.7. The 1-hour and continuous 24-hour TSP air quality monitoring were performed using direct reading DustTrak meter and High Volume Sampler ["HVS"] respectively, located at each of the designated monitoring locations A1, A2a, A3 and A4. Table 3.5 summarizes the equipment used in the impact air monitoring. Copies of the calibration records for the HVSs and calibration certificates for the DustTrak meters are attached in Appendix D. After review of the calibration certificate and technical specification of the DustTrak meter, the IEC and AR have approved the dust meter to be suitable in giving direct reading of 1-hour TSP measurement equivalent to HVS.

Table 3.5 Equipment used in the impact air monitoring

| Equipment | Model | Qty. |
|---|---|---|
| HVS | GMWS-2310 ACCU-VOL | 4 |
| Direct reading dust meter | 8520 DustTrak | 2 |

Monitoring Methodology

3.8. As mentioned above, 1-hour TSP levels was measured by direct reading methods capable of producing comparable results as that by the high volume sampling method, to indicate short term impacts.

3.9. For measurement of 24-hour TSP levels, HVS complete with the appropriate sampling inlets were used. The sampler is composed of a motor, filter holder, flow controller and a sampling inlet and its performance specification complies with the requirement of the EM&A Manual. 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*.

3.10. Initial calibration of the HVSs was performed prior to the commencement of the air monitoring.

3.11. The flow rate of the HVS was set to about 1.1 $m^3$/min – 1.7 $m^3$/min prior to commencement of the dust sampling in accordance with the manufacturer's instruction.

3.12. Fiberglass filter papers were used for 24-hour TSP sampling. The filter papers were equilibrated in the conditioning environment for 24 hours before weighing. The flow indicator reading was recorded and the sampler flow rate was determined. The programmable timer was set and the starting sampling time, weather condition and the filter number was recorded.

3.13. At the end of sampling, the filter was transferred from the filter holder of the HVS to a sealable plastic bag and sent to the laboratory for weighing. The elapsed time was also recorded.

3.14. The laboratory for the preparation of the filter papers and analysis of the filter papers is SGS Hong Kong Ltd. which is HOKLAS accredited.

Impact Monitoring Results

3.15. Impact air quality monitoring was conducted at A1, A2a, A3 and A4. Detailed impact monitoring data of 1-hour and 24-hour TSP are presented in Appendix E. These are summarized in Tables 3.6 and 3.7 for 1-hour and 24-hour TSP respectively. Graphical presentations of the monitoring results are shown in Appendix F.

Table 3.6 Summary of 1-hour TSP monitoring results

| Location | Average 1-hour TSP concentration ($\mu g/m^3$) |
|---|---|
| A1 | 127 |
| A2a | 146 |
| A3 | 140 |
| A4 | 134 |

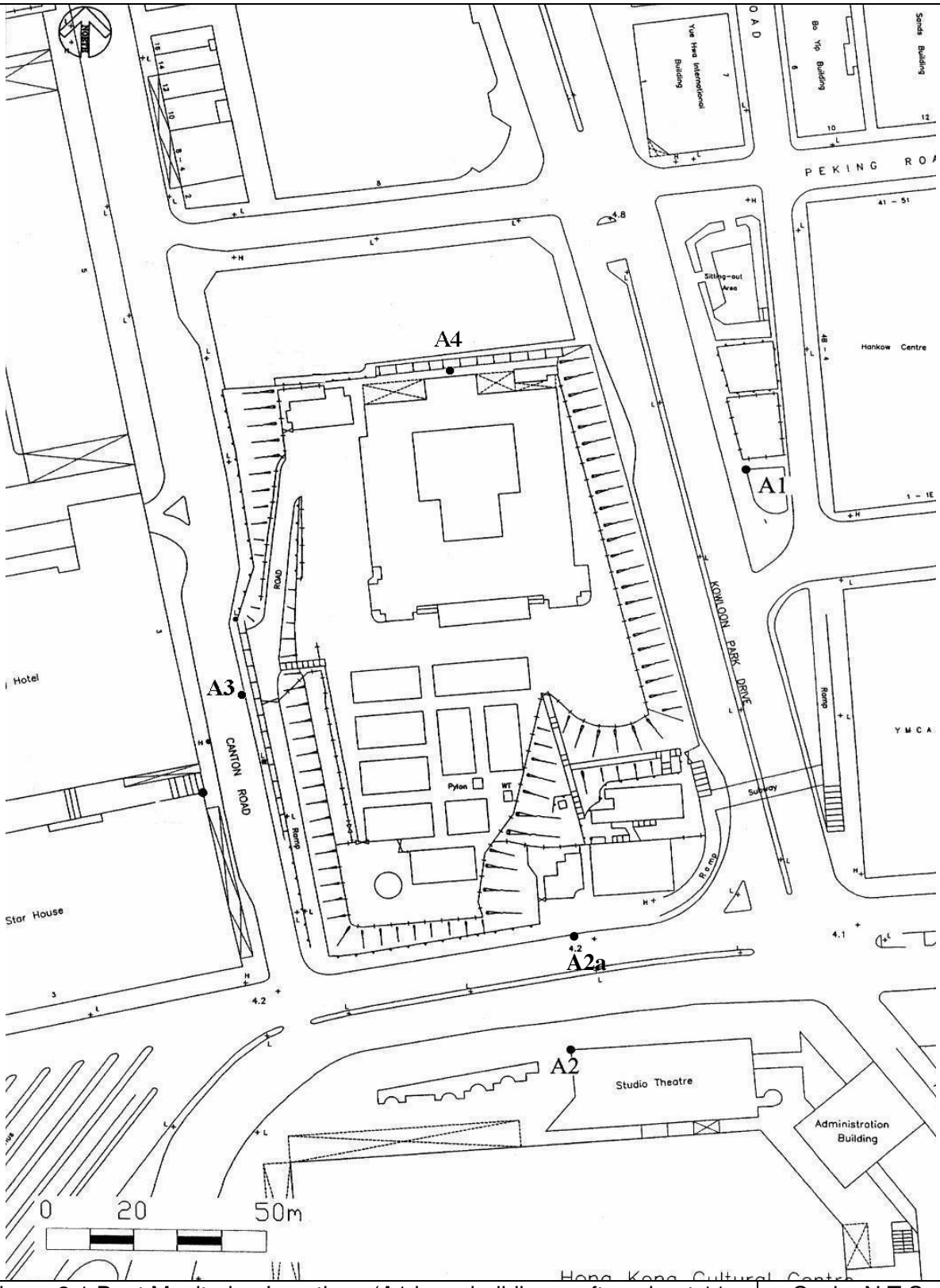
Table 3.7 Summary of 24-hour TSP monitoring results

| Location | Average 24-hour TSP concentration ($\mu g/m^3$) |
|---|---|
| A1 | 70 |
| A2a | 74 |
| A3 | 85 |
| A4 | 76 |

Observations

3.16. No AL level exceedance was recorded during the reporting month as detailed in Appendix G.

3.17. There was a complaint from public on dust nuisance due to construction work at Canton Road for future utilities installation. Investigation showed that the water suppression was insufficient at the work site. The contractor subsequently increased the water suppression and installed tarpaulin screening. The complaint was thus resolved.




| Figure 3.1 Dust Monitoring Locations (A1 is on building rooftop about 11m above ground, A2, on podium level about 5m above ground, A2a, A3 and A4 on hoarding top about 6m, 5m and 13m above ground respectively) | Scale: N.T.S |
|---|---|

## 4. Noise

4.1. In accordance to the EM&A Manual, noise monitoring has to be carried out at two sensitive receiver locations outside the site. According to the EM&A Manual Section 3.15 - 3.18, one set of measurements between 0700 to 1900 hours on normal weekdays was carried out for each location on weekly basis.

4.2. Based on the EM&A Manual Section 3.21, impact ground-borne noise measurement has to be carried out inside the Hong Kong Space Museum ["HKSM"] and Hong Kong Cultural Centre ["HKCC"]. It should be conducted on at least monthly basis during the period when the piling works at the FMPHQ.

Action and Limit Levels

4.3. As per requirements of the EM&A Manual, the AL Levels for noise monitoring locations were established as in Table 4.1 AL levels

Table 4.1 AL levels for impact noise monitoring locations

| Time Period | Action | Limit |
|---|---|---|
| 0700-1900 hrs on normal weekdays | When one documented complaint is received | 75* dB(A) |
| 0700-2300 hrs on holidays; and 1900-2300 hrs on all other days | | 65** dB(A) |
| 2300-0700 hrs of next day | | 50** dB(A) |

* Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.
** Based on Area Sensitivity Rating 'B'.

4.4. The corresponding AL levels for ground borne noise indoor of HKCC and HKSM will be as per Table 4.2.

Table 4.2 AL levels for HKCC and HKSM

| Location | Action | Limit |
|---|---|---|
| HKCC | When one documented complaint is received | 60 dB(A) |
| HKSM Recording Studio (1/F) | | 60 dB(A) |
| HKSM Sky Theatre (1/F) | | 60 dB(A) |
| HKSM Lecture Room (G/F) | | 60 dB(A) |

Event and Action Plan for Noise

4.5. Should non-compliance of the criteria occur, action in accordance with the Action Plan in Table 4.3 should be carried out as per requirements of the EM&A Manual.

Table 4.3 Event/Action Plant for Construction Noise

| EVENT | ACTION (to be taken as immediate as practicable) | | | |
|---|---|---|---|---|
| | ET | IEC | AR | CONTRACTOR |
| Action level | 1. Notify IEC and Contractor;<br>2. Carry out investigation;<br>3. Report the results of investigation to the IEC and Contractor;<br>4. Discuss with the Contractor and formulate remedial measures;<br>5. Increase monitoring frequency to check the effectiveness of mitigation measures. | 1. Review the analyzed results submitted by the ET;<br>2. Review the proposed remedial measures by the Contractor and advise the AR accordingly;<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification in writing;<br>2. Notify Contractor;<br>3. Require Contractor to propose remedial measures for the analyzed noise problem;<br>4. Ensure mitigation measures are properly implemented. | 1. Submit noise mitigation proposal to IEC;<br>2. Implement noise mitigation proposals. |
| Limit level | 1. Notify IEC, AR, EPD & Contractor;<br>2. Identify source;<br>3. Repeat measurement to confirm findings;<br>4. Increase monitoring frequency;<br>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>6. Inform IEC, AR and EPD the causes and actions taken for the exceedances;<br>7. Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and AR informed of the results;<br>8. If exceedance stops, cease additional monitoring. | 1. Discuss amongst AR, ET, and Contractor on the potential remedial actions;<br>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the AR accordingly;<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification in writing;<br>2. Notify Contractor;<br>3. Require Contractor to propose remedial measures for the analyzed noise problem;<br>4. Ensure mitigation measures are properly implemented;<br>5. If exceedances continue, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | 1. Undertake immediate action to avoid further exceedance;<br>2. Submit proposals for remedial actions to IEC within 3 working days of notification;<br>3. Implement the agreed proposals;<br>4. Resubmit proposals if problem still not under control;<br>5. Stop the relevant portion of works as determined by AR, until the exceedance is abated. |

Monitoring Locations

4.6. The noise monitoring locations, namely CN1a & CN2a, were selected for the impact noise monitoring. These locations are made up for the locations at CN1 & CN2 (podium of Hankow Centre east of the construction site) carried out for the baseline noise monitoring as Hankow Centre no longer permit to enter the premises for noise measurement since 28 May 2004. These locations are shown in Figure 4.1 and are located on the roof of Po Yip Building and 4/F YMCA facing the east of the site.

4.7. Ground borne noise measurement was not taken at the HKSM and HKCC in April 2008 as there was no piling.

4.8. The monitoring periods for each station are summarised in Table 4.4.

Table 4.4 Exact monitoring periods for the noise monitoring locations

| Location | Monitoring period |
|---|---|
| CN1a | (1, 7, 17, 23 and 29)/4/2008 |
| CN2a | (1, 7, 17, 23 and 29)/4/2008 |

Monitoring Equipment

4.9. Integrated sound level meter was used for the noise monitoring. The meter is in compliance with the *International Electrotechnical Commission Publications* 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications. Immediately prior to and following each noise measurement the accuracy of the sound level meter was 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 agree to within 1.0dB. The calibration certificates of the sound level meter and calibrator are attached in Appendix I.

4.10. Also, a portable wind speed meter capable of measuring the wind speed in m/s was used to monitor the wind speed. Table 4.5 summarized the noise monitoring equipment model being used.

Table 4.5 Equipment used in the baseline air monitoring

| Equipment | Model | Qty. |
|---|---|---|
| Integrated sound level meter | NL-31 | 1 |
| Calibrator | NC-73 | 1 |
| Portable wind speed meter | AZ Instrument 8908 Thermo-Anemometer | 1 |

Monitoring Methodology

4.11. Impact noise for the 30 minutes period A-weighted levels $L_{eq}$, $L_{10}$ and $L_{90}$ are measured for CN1a and CN2a. Each 30 minutes noise level is usually comprised of six 5-minutes measured data. For HKSM and HKCC, 30 minutes ground-borne measurements would be taken for various points and is to be comprised of six 5-minutes measured data unless there is insufficient allocation of time slots for measurement by the HKSM or HKCC management.

4.12. The frequencies and parameters of noise measurement in the reporting month are thus presented in Table 4.6.

Table 4.6 Frequency and parameters of noise monitoring

| Location | Frequency | Duration | Parameter |
|---|---|---|---|

| | | | |
|---|---|---|---|
| CN1a | Weekly | 30 min. | $L_{eq}$, $L_{10}$ and $L_{90}$ |
| CN2a | Weekly | 30 min. | $L_{eq}$, $L_{10}$ and $L_{90}$ |

4.13. The monitoring location at CN1a was at free field condition. The meter was fixed on a stand with the microphone at position 1.2m above the reflecting ground and hence façade correction of +3dB(A) was applied. The other monitoring location at CN2a was at a point 1m from the exterior of the building façade.

4.14. Before and after each noise measurement, the meter was calibrated using the Calibrator for 94 dB at 1000 Hz.

4.15. The wind speed was checked with the portable wind speed meter to be within 5m/s during measurement.

4.16. Site conditions and possible noise sources affecting the measurement were recorded on the noise monitoring field record sheet. Extraneous noise was avoided as far as possible.

Impact Monitoring Results

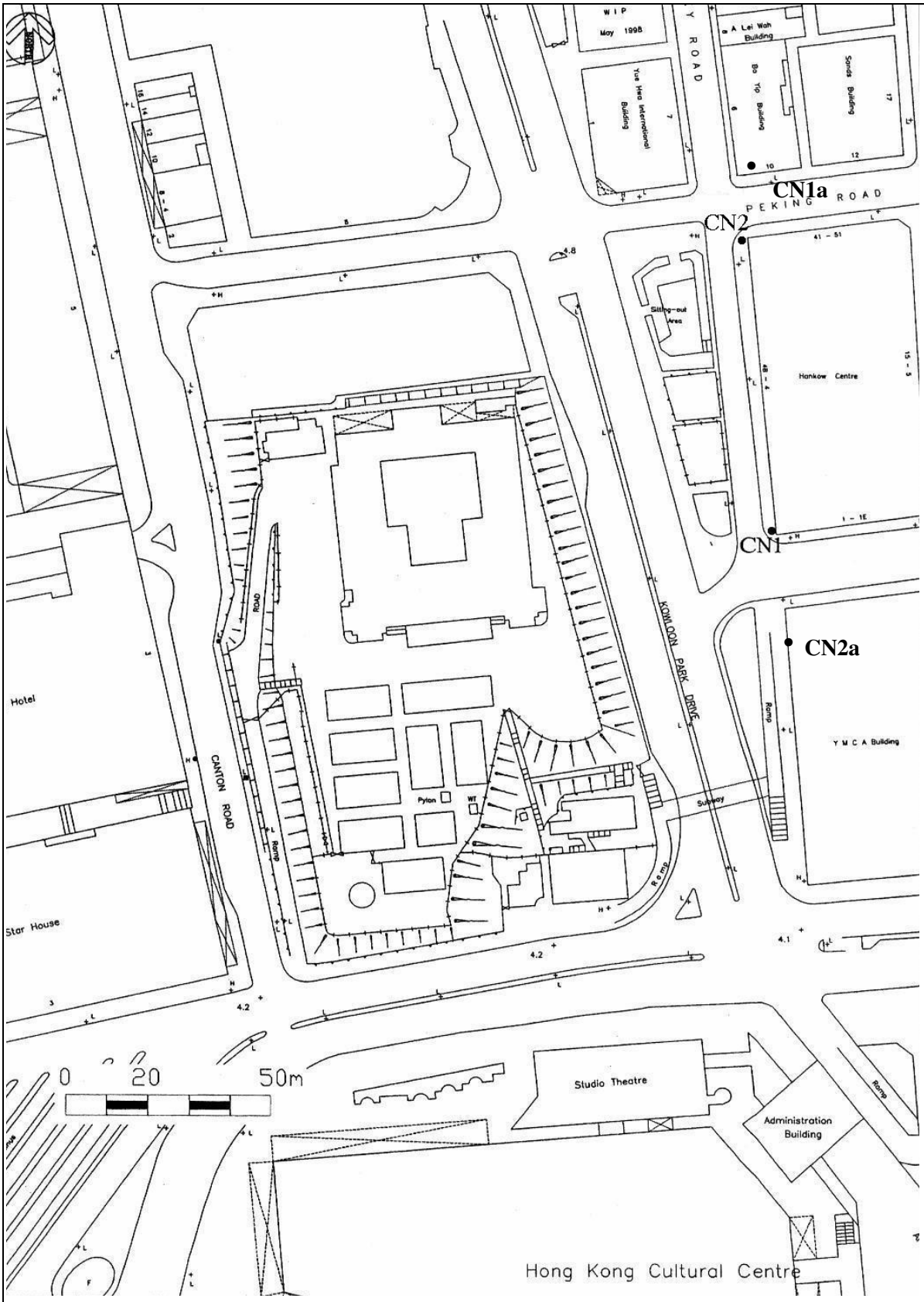
4.17. Impact noise monitoring results for CN1a, CN2a are summarized in Tables 4.7. All detailed impact noise monitoring data and graphical presentations of the monitoring results for CN1a and CN2a are given in Appendix J and Appendix K respectively.

Table 4.7 Summary of noise monitoring results

| **Measurement point** | **Mean Noise Level, dB(A)** | | |
|---|---|---|---|
| | **$L_{eq}$** | **$L_{90}$** | **$L_{10}$** |
| CN1a | **72.9** | **70.6** | **74.9** |
| CN2a | **75.3** | **72.7** | **77.5** |

Observations

4.18. There were four Limit Level exceedances in April 2008. The limit level exceedances were not due to the site construction works as there was no noisy construction activity during the period of complaints.




| | |
|---|---|
| Figure 4.1 Proposed Noise Monitoring Stations (CN1 and CN2 are at podium level, about 15m above ground). Alternative measurement stations (CN1a and CN2a are about 33m and 11m above ground respectively). | Scale: N.T.S |

## 5. Waste Management

5.1. According to the Waste Management Plan ["WMP"], all Construction & Demolition materials will be recorded for each month.

5.2. Further revision of the WMP to cater for the present phase of the construction works was submitted to EPD and approval was granted on 22 June 2007.

5.3. Types, quantities and disposal location of all surplus excavated materials and wastes arising from the Project site are summarized in Table 5.1 based on information from the Contractor.

Table 5.1 Summary of the wastes arising from the Project site

| Date | Type of Waste | Quantity (tonnes) | Disposal Location |
|---|---|---|---|
| 1 April 2008 To 30 April 2008 | Soil | 82.4 | TKO |
| | Sorting Facility | 94.1 | TKO |
| | General Refuse | 7.0 | TKO |
| | Chemical Wastes | -- | -- |

Note: SENT – South East New Territories Landfill Site
TKO – Fill Bank at Tseung Kwan O Area 137 (Public Filling Facility)
QB – Quarry Bay Barging Point
MW – Ma Wan Development –VDA Phase 3

5.4. Updated records on waste disposal should be made available promptly to allow better monitoring of waste management performance. Waste recycling should be more actively promoted on site. In particular, the Contractor is reminded to maintain proper documentation on the return of chemical containers to suppliers for reuse.

5.5. Proper covering and storage of general refuse should be carried out.

## 6. Cultural Heritage and Landscape

6.1. For protection of cultural heritage, a brief structural investigation has been carried out to all the monument structures, i.e. the Main Building, the Stable Block and Signal Tower. It was found that most of them are brickwork foundation and a mixture of reinforced concrete and timber superstructures, which are sensitive to vibration and ground movement possibly generated during site formation works. In order to protect them from damaging during the construction works, a number of monitoring points such as building settlement markers, ground settlement markers and tell-tale devices, were installed both around and inside all the monument structures prior to commencement of works.

6.2. Baseline (initial) monitoring was carried out on 31 May 2004. For monitoring of the monument structure during construction works, the Alert, Alarm and Action levels in Table 6.1 are adopted based on a certain percentage of the design value for allowable structure or ground deformation with the following definition:

- Alert Level is set at 50% of the allowable structure or ground deformation. This is the lowest response value and signifies the reading for an instrument. Response is to increase the frequency of monitoring

- Alarm Level is set at 80% of the allowable structure or ground deformation. Response is to increase the monitoring frequency and improve construction methods in the vicinity of the monitoring area.

- Action Level is set at 100% of the allowable structure or ground deformation. Response is to suspend all activities and notify the Architect before proceeding with any further construction.

Table 6.1 Alert, Alarm and Action Levels of monument structural monitoring

| Instrument | Unit | Alert | Alarm | Action |
|---|---|---|---|---|
| Ground Settlement Markers | mm | 10 | 15 | 20 |
| Building Settlement Markers | mm | 5 | 8 | 10 |
| Building tilting & settlement | - | 1:2000 | 1:1500 | 1:1000 |
| Tell-tales (crack monitoring) | mm | 5 | 8 | 10 |

Remarks: * The Design or allowable value is specified in the design report and drawings submitted to and approved by Building Department in their letter Ref (85) in BD 6/4023/03 dated 13 February 2004.

6.3. The contractor advised that termination of the above monument measurements has been approved and hence no monument measurements are in the reported in this month.

6.4. For preservation of trees, a Tree Preservation Proposal was submitted and baseline photographic survey of trees was taken on 24 February 2004 as a baseline prior to the commencement of construction works. These photographic records are documented in the Baseline environmental monitoring report.

6.5. Continuous surveillance showed that the retention, transplantation and felling of trees has been generally in accordance with the recommendations made in the Tree

Preservation Proposal. Photographic records of the trees retained on site are given in Appendix L.

6.6. Tree canopy for T10 have been recovered after the insecticide treatment.

6.7. 80% of canopy recovered on T54 as observed during tree inspection on 27 March 2008.

6.8. Insecticide treatment similar to T10 has carried out to T66, T67. Works near to T66 and T67 were closely monitored to prevent damage to trees.

6.9. Tree canopy for T96 was recovered.

6.10. Tree canopy fully recovered as observed during tree inspection on 29 April 2008 for T120, T121 and T122.

6.11. Construction works has carried out close to T129 as observed during a site inspection carried out on 22 April 2008. Contractor has been reminded to avoid any damage made to the tree.

6.12. Close monitoring will be continued on T10, T54, T66, T67, T96, T120, T121 and T122.

6.13. Detailed on-site and off-site tree matters are being covered in the separate submissions to Planning Department under the approved landscape Mitigation and Tree Preservation Proposal.

## 7. Summary of Non-compliance, Complaints, Notification of Summons and Successful Prosecutions, Environmental Licensing and Permitting

7.1. Four Limit Level exceedances on noise were found in the reporting month. As there was no noisy operation carried out during the monitoring period, the exceedances were not genuinely due to the site construction works as discussed in paragraph 4.18.

7.2. No exceedance was recorded for 1-Hr and 24-Hr TSP monitoring in the reporting month.

7.3. No environmental prosecution was received in the reporting month.

7.4. There are two complaints received in the reporting month. One complaint on dust nuisance was received and rectified by increased dust suppression and use of screen as mentioned in paragraph 3.17. Another complaint was received from EPD on possible water discharge without proper treatment by utility installation workers. Improved communications with other work personnel and rectification of the site wastewater treatment plant were made. The complaint logbooks are attached in Appendix H.

7.5. Construction noise permit for concrete vibrator has been granted on 31 May 2007. Discharge licence under Water Pollution Control Ordinance ["WPCO"] had been granted on 22 June 2007. Status of the environmental licensing and permitting can be summarized as follows:

| Description | Permit / License No. | Status | Permit Holder |
|---|---|---|---|
| Environmental Permit | EP-184/2004 | Remain valid since 9 February 2004 | Flying Snow Ltd. |
| Construction Noise Permit | GW-RE5095-07<br>GW-RE5096-07 | Valid until 2 September 2007 | Hien Lee Engineering Co., Ltd |
| WPCO Discharge Licence | RE/0907/211/1 | Valid until 30 June 2012 | Hien Lee Engineering Co., Ltd |
| Chemical Waste Producer Registration | 5213-111-H2929-14 | Remains valid since 2 August 2007 | Hien Lee Engineering Co., Ltd |

7.6. Construction dust notification pursuant to Air Pollution Control (Construction Dust) Regulation has also been submitted and acknowledged by EPD in May 2007.

7.7. Chemical waste producer registration was submitted on 17 July 2007 and confirmed on 2 August 2007.

## 8. Other Issues

8.1. Hien Lee Engineering Co., Ltd. has taken over the site in May 2007 and be responsible for the next phase of the project which includes remaining excavation, building foundation, superstructure & furnishing. There would then be dust and noise emissions, with noise emission being the major issue.

8.2. The ET Leader has briefed the new contractor on the requirements of the EM&A Manual and WMP. The Contractor should continue to ensure all project staffs, irrespective when they joined the project team, are also briefed accordingly by the Project Manager with proper record keeping of the briefing.

8.3. Sampling of the wastewater has been carried out in April 2008 and the results showed compliance with the Discharge Licence requirements. Wastewater was thus allowed to discharge at the designated discharge point specified in the License after treatment.

8.4. Infrastructure furnishing will be the main activity in the coming month. There would be limited dust and noise emissions.

## 9. Conclusion

9.1. EM&A work for April 2008 has been successfully completed. Four limit level exceedances were found.

9.2. Four limit level exceedances on noise level were recorded. The exceedances were due to other activities not related to the site construction works.

9.3. There was one dust complaint resolved with increased water suppression and the use of dust screen. One water pollution complaint was resolved with enhanced communication with other site working personnel and rectification of wastewater treatment plant. Other than these, they were no notification of summons and prosecutions.

9.4. Monitoring of the trees were also made. Monument measurements have not been made in this reporting month as according to the Contractor, approval for termination of the measurement has been received

9.5. Site audits were carried out once per week. The conditions of the site were generally satisfactory except that considerable improvements in noise abatement were needed. The following are to be further pursued:

- Use of drip tray for all oily containers
- Improvement of wheel washing facility and avoid tire track left on road.
- Reinstatement of wastewater treatment system
- Proper covering and storage of general refuse.
- Continual protection and closer monitoring of the trees and historical buildings.

## Appendix A: The construction programme with milestones of environmental protection/mitigation activities

## Updated Construction Programme

| Phase | Description | 2004 | | 2005 | | | | | | | | | | | | 2006 | | 2007 | | | | | | | | | | | | 2008 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6 | … | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | … | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | Site Formation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 | Site Formation - Tree Retaining, Underpinning & Tree Column | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | Site Formation - Retaining wall for Main Building | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 | Site Formation - Open Cut Excavation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 | Site Formation - Remaining Excavation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Building Foundation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Superstructure & Furnishing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**General Mitigation Measures**

7/6/2004: All mitigation measures in place except wheel washing pond & barrier mat.
25/6/2004: Sound barrier mat ready.
9/7/2004: Wheel washing pond provided.
May 2007: setup of scaffolding supported noise screen.

**Wastewater Discharge**

June 2004: Zero discharge from site
9/7/2004: Discharge Licence approval
7/5/2007: Application of WPCO Discharge Licence.
22/6/2007: Discharge Licence approval

**Construction Noise Permit**

19/10/2005: Construction Noise Permit [“CNP”] for submersible pumps.
22/2/2006: CNP renewed.
26/7/2006: CNP renewed.
9/2/2007: CNP Expired.
April 2007: Application of CNP by HL.

**Chemical Waste**

2/8/2007: Registration of Waste Producer completed

## Appendix B: Implementation schedule for recommended mitigation measures

# Implementation Schedule

Redevelopment of Former Marine Police Headquarters, KIL11161

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Fugitive Dust Impact on the Surrounding Sensitive Uses | | | | | |
| 4.1.2.10 | To erect site hoarding of at least 2.4m high along the boundaries of the Project Site (particularly along the northern boundary adjacent to No. 1, Peking Road) except at the site entrance/ exit | Site (site boundary) | Site Formation Contractor (for maintenance or improvement as the hoarding was already erected by the Hoarding Contractor earlier) | Construction Phase (prior to construction) | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Provide shielding against dispersion of fugitive dust |
| | To control truck speed to within 8 km/hr and that dusty vehicle loads transported to and from the work location should be covered by tarpaulin sheets and should not be overloaded | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |
| | To provide vehicle wheel washing facilities including high pressure water jets at designated vehicle exit points | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | To use impervious sheeting where practicable for side enclosure and covering of any aggregate or other dusty material storage piles, to place stockpiles in an area sheltered on the top and the three sides, and/or to spray with water | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |
| | To cover the demolished items by impervious sheeting or to place in area sheltered on the top and the three sides within a day of demolition. | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |
| | To spray all dusty material with water prior to loading, unloading or transfer so as to maintain the C&D material wet | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |
| | To apply wet suppression at least four times per day at the worksites with active dusty operations and to water all dust emission sources when necessary. The frequency shall be increased when the weather is dry | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |
| | To control the drop height of excavated materials to a minimum to limit fugitive dust generation from unloading as far as practicable | Site | Site Formation Contractor | Construction Phase | TM-EIA, APC(CD)R & AQO in APCO | To control fugitive dust emissions in accordance with the requirements of Air Pollution Control (Construction Dust) Regulation in principle; Reduce fugitive emission wherever possible |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| 5.2.1.3 | To carry out EM&A programme | Site | Site Formation Contractor & Superstructure Contractor | Pre-Construction and Construction Phase | TM-EIA & AQO in APCO | To proactively monitor fugitive dust impact and take necessary action against any unacceptable impact |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Construction Noise Impact on the Surrounding Sensitive Uses | | | | | |
| 4.2.1.5 | To restrict operation to within non-restricted hours only | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | NCO | To avoid generation of noise during restricted hours under NCO |
| 4.2.1.11 | To use quiet PME with lower sound power level | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | TM-EIA | To reduce noise generation and in turn the construction noise impact |
| | To provide site hoarding of 4m to 6m high along the eastern boundary with sufficient surface density (10 to 15 kg/m2), use of noise curtain or other mitigation measures for noise abatement as soon as Action Level is exceeded and confirmed to be due to the construction works | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | TM-EIA | To provide noise shielding or equivalent measures to reduce construction noise impact as per @ or equivalent subject to IEC/ AR's agreement. |
| | To adopt noise enclosure and temporary noise barriers with sufficient surface density (10 to 15 kg/m2) (vertical and cantilevered types) | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | TM-EIA | To provide noise shielding to reduce construction noise impact or equivalent measures subject to IEC/ AR's agreement. |
| | To make use of the topography by carrying out excavation from west to east so that the original platform can act as effective noise barrier | Site | Site Formation Contractor | Construction | TM-EIA | To provide noise shielding to reduce construction noise impact or equivalent measures subject to IEC/ AR's agreement. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| 4.2.1.12 | To implement good site practice and noise management<br>▪ To submit to the Engineer for approval the method of working, equipment and sound-reducing measures intended to be used at the site before the commencement of any work<br>▪ To allow only well-maintained plants to operate on-site;<br>▪ To service the plants regularly during the construction program;<br>▪ To shut down or throttle down machines that may be in intermittent use to a minimum between work periods;<br>▪ To utilize and maintain silencer and mufflers on construction equipment during the construction program;<br>▪ To schedule noisy activities to minimise exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours);<br>▪ To site noisy equipment such as emergency generators as far away as possible from NSRs;<br>▪ To site mobile plants as far away from NSRs as possible; and<br>▪ To utilize material stockpiles and other structures as noise barrier, where practicable. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | NCO & TM-EIA | To reduce noise generation and its impact in accordance with NCO and its subsidiary regulations |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| 4.2.1.23 | No percussive piling | Site | Site Formation Contractor | Construction Phase | TM-EIA & NCO | To eliminate possibility of generating any significant ground borne noise impact |
| 4.2.1.81 | To avoid concurrent pipe piles driving near the tree ring and the Main Building when the pipes near the Main Building is about to penetrate the bedrock | Site | Site Formation Contractor | Construction Phase | TM-EIA & NCO | To avoid adverse cumulative ground borne noise impact |
| | To conduct on-site noise measurement at the HKCC and the HKSM when the works at the FMPH commences to verify the level of transmitted ground-borne noise | Site | Site Formation Contractor | Construction Phase | TM-EIA & NCO | To avoid adverse cumulative ground borne noise impact |
| | To establish a communication channel with HKCC and HKSM to stagger, if necessary, the ground-borne noise causing construction activities to avoid clashing with hours of performance at both venues | Site | Site Formation Contractor | Construction Phase | TM-EIA & NCO | To avoid adverse cumulative ground borne noise impact |
| 5.2.1.3 | To carry out EM&A program | Site | Site Formation Contractor & Superstructure Contractor | Pre-Construction and Construction Phase | TM-EIA | To proactively monitor construction noise impact and take necessary action against any unacceptable impact |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Construction Phase Water Quality Impact | | | | | |
| 4.3.1.7 | To carry out the Works in such a manner as to minimize adverse impacts on the water quality during execution of the works. In particular he shall arrange his method of working to minimize the effects on the water quality within and outside the Site, on the transport routes and at the loading, dredging and dumping areas. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WPCO | To comply with the Water Pollution Control Ordinance and its subsidiary regulation. |
| | To follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in the Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 "Construction Site Drainage" issued by the Director of Environmental Protection. The design of the mitigation measures shall be submitted by the Contractor to the Engineer for approval. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | ProPECC PN1/94 & WPCO | To comply with the Water Pollution Control Ordinance and its subsidiary regulation. |
| | To contain within the Site all surface runoff generated from foundation works, dust control and vehicle washing, etc. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WPCO | To comply with the Water Pollution Control Ordinance and its subsidiary regulation. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | To avoid discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water without the prior written consent of the Engineer in consultation with the Director of Environmental Protection and Director of Water Supplies, who may as a condition of granting his consent require the Contractor to provide, operate and maintain at the Contractor's own expense to the satisfaction of the Engineer suitable works for the treatment and disposal of such trade effluent or foul or contaminated or cooling or hot water. [The design of such treatment works shall be submitted to the Engineer for approval not less than one month before the commencement of the relevant works.] | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WPCO | To comply with the Water Pollution Control Ordinance and its subsidiary regulation. |
| | To direct foul water effluent to a foul sewer or to a sewage treatment and disposal facility either directly or indirectly by means of pumping or other means approved by the Engineer if any office, site canteen or toilet facilities is erected | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WPCO | To comply with the Water Pollution Control Ordinance and its subsidiary regulation. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Operational Phase Water Quality Impact | | | | | |
| 4.3.2.1 | To discharge sewage/wastewater generated from the Project to the nearby public sewers | Site | Project Proponent/Operator | Design / Operational Phase | WPCO | To meet the requirement as stipulated in the Technical Memorandum on Water Pollution Control Ordinance |
| | Waste Management | | | | | |
| 4.5.1.7 | To minimize the production of construction waste through careful design, planning, good site management, and control of ordering procedures, segregation and reuse of materials; To arrange for private contractors to collect used formwork materials for reuse. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WDO | To follow relevant regulations (Waste Disposal Ordinance) in all circumstances. |
| 4.5.1.8 | To dispose of any chemical wastes such as lubricating oil or solvent in strict accordance with the Waste Disposal (Chemical Waste) (General) Regulation | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WDO | To follow relevant regulations (Waste Disposal Ordinance) in all circumstances. |
| 4.5.1.9 | To assign a reliable waste collector to collect general refuse generated from the construction site on a daily basis to minimise the potential odour, pest and litter impacts. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | WDO | To follow relevant regulations (Waste Disposal Ordinance) in all circumstances. |
| 4.5.2.1 | To identify requirements on proper waste management for implementation during the operation of the Project | Site | Operator | Operational Phase | WDO | To follow relevant regulations (Waste Disposal Ordinance) in all circumstances. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Construction Phase Landscape and Visual Impact | | | | | |
| 4.6.2.2 | To screen the works area during the construction phase through the use of decorative hoarding along the site boundary with unified edge treatment and interface | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | A&MO, TM-EIA, Project Profile ["PP"], Landscape Mitigation and Tree Preservation Proposal ["LMTPP"] & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| 4.6.2.11 | Creation of precautionary area (Cordon Area) around trees to be retained equal to the spread of the trees canopy diameter. Precautionary area to be fenced. Following the completion of the piling the Cordon Area would be based on the retained rootball. | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | Prohibition of the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Cordon Area. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | Phased segmental root pruning for trees to be retained over a six-month period prior to or site formation works, which affect the existing rootball of trees identified for retention. The extent of the pruning shall be based on a minimum half canopy and has been determined on a tree by tree basis.<br><br>Phased segmental root pruning over a three-month period prior to lifting the tees identified for transplantation. | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | Pruning of the branches of existing trees identified for transplantation and retention to be based on the principle of crown thinning maintaining their form and amenity value | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | The watering of existing vegetation particularly during periods of excavation when the water table beneath the existing vegetation is lowered. | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | The rectification and repair of damaged vegetation following the construction phase to it's original condition prior to the commencement of the works or replacement using specimens of the same species, size and form where appropriate to the design intention of the area affected | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key stages in the preparation of the trees, the implementation of protection measures and health monitoring through out the construction period | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | The tree transplanting and planting works should be implemented by approved Landscape Contractors and inspected and approved on site by a qualified Landscape Architect. A tree protection / transplanting specification would be included within the contract documents. Tree preservation proposals and procedures for the protection and preservation of the existing trees to be reviewed by third party Tree Specialist including the provision of an additional level of monitoring during the construction phase. | Site | Specialist Landscape Contractor | Construction Phase | A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Interim measures designed to ensure acceptable landscape and visual impact on completion. Implementation of the LMTPP to the mature trees during the construction period. |
| | **Operational Phase Landscape and Visual Impact** | | | | | |
| 4.6.3.4 | To retain trees that have historic value and contribute most to the landscape and visual amenity of the site and its immediate environs | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |
| 4.6.3.5 | To restore the main buildings and to create landscaped gardens in order to beneficially affect the landscape character and quality of the area | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |
| | To create the plaza to the south of the main colonial buildings to increase public access to the site and to open up views of the building façade | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | To provide where conditions allow new street planting along Canton Road, from No. 1 Peking Road to the intersection at Salisbury Road, and along the Salisbury Road frontage in order to create a boulevard type landscape to partially screen the development, and to enhance the green edge effect that is a dominant feature of both the site and its urban context. | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP, LMTPP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |
| | To conduct new paving works at the street level as a result of the development and the widening of Canton Road which will lead to a significant improvement in the landscape and visual amenity of the streetscape within the study area | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP | Long term measures deigned to ensure creation of a high quality urban landscape |
| | Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval under the lease conditions and in accordance with WBTC No. 14/2002. | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |
| 4.6.3.8 | All landscape and visual mitigation works will be funded, implemented managed and maintained by the project proponent. | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | A qualified or registered landscape architect will be involved in the design, construction supervision and monitoring, and maintenance period to oversee the implementation of the recommended landscape and visual mitigation measures including the tree preservation and landscape works on site. Tree preservation proposals to be reviewed by third party Tree Specialist including monitoring during the establishment period. | Site | Project Proponent/ Operator | Design, Construction and Operational Phase | TPO, A&MO, TM-EIA, PP & WBTC No. 14/2002 | Long term measures deigned to ensure creation of a high quality urban landscape |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| | **Cultural Heritage Impact** | | | | | |
| 4.7.1.1 | All monuments within the site will be preserved to an extent given according to the in the tender requirement | Site | Project Proponent | Design, Construction and Operational Phase | Tender Document | To preserve the monument |
| 4.7.4.1 | To prepare and submit a detailed study report comprising the historic archives, measured drawings, photographic records and full bibliography in support of the historic evidence prepared by experts in cultural heritage for their approval under the Antiquities and Monuments Ordinance (Cap. 53) | Site | Project Proponent | Design Phase | A&MO | To observed principles in the Charter of Venice (ICOMOS) and the Burra Charter (ICOMOS Australia) and requirement of A&MO |
| 4.7.4.2 | To submit detailed descriptions, plans for building and mitigation works and implementation programme to AMO for their approval and monitoring before commencement of works. | Site | Project Proponent | Design Phase | A&MO | To observed principles in the Charter of Venice (ICOMOS) and the Burra Charter (ICOMOS Australia) and requirement of A&MO |
| 4.7.4.3 | To preserve the Historic Buildings to meet international standard. Relevant legislations, standards, Charters and planning guidelines will be observed. | Site | Project Proponent | Design, Construction & Operational Phase | A&MO | To observed principles in the Charter of Venice (ICOMOS) and the Burra Charter (ICOMOS Australia) and requirement of A&MO |
| 4.7.4.4 | To allow only alteration or addition works to the Historic Buildings, which are reversible except those, considered to be minor by AMO. | Site | Superstructure Contractor | Construction Phase | A&MO | To observed principles in the Charter of Venice (ICOMOS) and the Burra Charter (ICOMOS Australia) and requirement of A&MO |
| 4.7.4.5 | To take necessary precautions during construction and excavation work to prevent any damage to the Historic Buildings. Structural monitoring system will be designed and supervised by a Registered Structural Engineer during the whole of construction works on the site. | Site | Site Formation Contractor & Superstructure Contractor | Construction Phase | A&MO | To prevent any damage to the historic buildings and structures during the site formation. |

| Project Profile Ref.: | Recommended Mitigation Measures | Location of the measure | Who to implement the measure | When to implement the measures | What requirements or standards for the measure to achieve* | Objectives of the Recommended Measure & Main Concern to address |
|---|---|---|---|---|---|---|
| 4.7.4.8 | A comprehensive management plan including a heritage building maintenance guideline for the operation of FMPHQ would be prepared by conservation experts. | Site | Agent appointed by Project Proponent | Prior to Operational Phase | A&MO | To maintain the historic site and buildings in a proper manner |
| 4.7.4.9 | Periodic site inspection to heritage buildings on external areas, interior decoration and covered-up areas to ensure a constant monitoring of building condition is conducted. | Site | Agent appointed by Project Proponent | Operational Phase | A&MO | To maintain the historic site and buildings in a proper manner |
| 4.7.4.10 | The Permit on routine maintenance would be applied to AMO under the A & M Ordinance. | Site | Agent appointed by Project Proponent | Operational Phase | A&MO | To maintain the historic site and buildings in a proper manner |

*Abbreviation
TM-EIA – Technical Memorandum on Environmental Impact Assessment Process
AQO – Air Quality Objectives
APCO – Air Pollution Control Ordinance
APC(CD)R - Air Pollution Control (Construction Dust) Regulation
HKPSG – Hong Kong Planning Standards and Guidelines
TPO – Town Planning Ordinance
NCO – Noise Control Ordinance
WPCO – Water Pollution Control Ordinance
PN1/94 – Professional Persons Environmental Consultative Committee Practice Note (ProPECC PN) 1/94 "Construction Site Drainage"
WDO – Waste Disposal Ordinance
A&MO – Antiquities and Monuments Ordinance

## Appendix C: The environmental site inspection, deficiency and remedial action reports

**NATURE & TECHNOLOGIES (HK) LIMITED**
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## Development at Former Marine Police Headquarters KIL 11161 (EP-184/2004)

### Environmental Site Inspection, Deficiency and Remedial Action Report

| | | | |
|---|---|---|---|
| **Date of Issue:** | 8-4-08 | **# Pages:** | 6 |
| **To:** | Hien Lee Engineering Co., Ltd.<br><br>Attn: Mr. Howard Lui<br>Project Manager | **Cc:** | **Ms Connie Wong – IEC**<br>CH2M HILL Hong Kong Ltd. |
| **Fax No.:** | 2366 2980 | | 2507 2293 |

**Inspection date:** 7-4-08 Inspected **ET's Representative:**
**Time:** 16:00-17:00. **Contractor's Representative:**
**Architect's Representative:**

**Site:** **Former Marine Police Headquarter (Phase 2)**

WEATHER

**Condition:** ☐ Sunny ☑ Fine ☐ Overcast ☐ Hazy ☐ Drizzle ☐ Rain ☐ Storm
**Humidity:** ☑ High ☐ Moderate ☐ Low
**Wind:** ☐ Calm ☑ Light ☐ Breeze ☐ Strong
**Temperature:** 27 °C

GENERAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP 1.3 | Is a copy of Environmental Permit together with all documents referred to in the permit kept in all sites/offices covered in the permit? | | ✓ | | |
| EP 1.5 | Is a copy of the most updated Environmental Permit displayed at the at all vehicular site entrances/exits or at a convenient location for public information? | | ✓ | | |

AIR QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 2.32 | Is the site hoarding of at least 2.4m high erected along the boundaries of the site (particularly along the northern boundary adjacent to No. 1, Peking Road) except at the site entrance/ exit? | | ✓ | | |
| EP Annex I 29; EM&A 2.32 | Is the truck speed suitably low (within 8 km/hr)? | | ✓ | | |
| EP Annex I 29; EM&A 2.32 | Are the dusty vehicle loads transported to and from the work location covered by tarpaulin sheets and not to be overloaded? | ✓ | | | Not observed on site |
| Annex I 30 | Are water suppression applied at least four times a day at the work sites with active dusty operations and to water all dust emission sources when necessary? | | ✓ | | Records need enhancement. |
| EM&A 2.32 | Is there any vehicle wheel washing facilities including high pressure water jets provided at designated vehicle exit points? | | ✓ | | Wheel washing facility needs improvement |
| EM&A 2.32 | Is there any side enclosure and covering of any aggregate or other dusty material storage piles, placing of stockpiles in an area to be sheltered on the top and the three sides, and sprayed with water? | | ✓ | | storage pile observed sprayed with water |
| EM&A 2.32 | Are the demolished items covered by impervious sheeting or placed in area sheltered on the top and the three sides? | | ✓ | | Ditto |
| EM&A 2.32 | Are all dusty material sprayed with water prior to loading, unloading or transfer? | ✓ | | | Not observed |
| EP Annex I 31; EM&A 2.32 | Is the drop height of excavated materials controlled to a minimum to limit fugitive dust generation from unloading as far as practicable? | | ✓ | | |
| | Is the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores? | | ✓ | | |
| | Is the public road around the site entrance kept clean and free from dust? | | ✓ | | |
| | Immediately before leaving a construction site, is every vehicle washed to remove any dusty materials from its body and wheels? | | ✓ | | |
| | Are all machinery and equipments well maintained e.g. without black smoke emission? | | ✓ | | |

NOISE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| NCO | Are valid construction noise permits available for inspection? | | ✓ | | |
| NCO | Are conditions of construction noise permits for the relevant parts of the works implemented accordingly? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 34; EM&A 3.26 | Are the quiet power mechanical equipment with lower sound power level used? | | ✓ | | |
| EP Annex I 35; EM&A 3.26 | Is the site hoarding of 4m to 6m high along the eastern boundary with sufficient surface density (10 to 15 kg/$m^2$) as noise barrier or other possible noise mitigation measures provided? | ✓ | | | Excavation is completed |
| EP Annex I 36; EM&A 3.26 | Are the noise enclosure and temporary noise barriers with sufficient surface density (10 to 15 kg/$m^3$) (vertical and cantilevered types) or other possible noise mitigation measures adopted? | ✓ | | | Ditto |
| EP Annex I 37; EM&A 3.26 | Is the excavation carried out from west to east by making use of the topography so that the original platform can act as effective noise barrier? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Is proper acoustic barrier/enclosure for the noisy facilities installed? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Are all E&M facilities in a manner to avoid any unacceptable impact on the surrounding noise sensitive uses shielded and housed? | | ✓ | | |
| EP Annex I 38; EM&A 3.26 | Are all noisy facilities if practicable or position them near the western side of the site with proper at-source shielding especially on the east side fully enclosed? | ✓ | | | Excavation is completed |
| | Are all air compressors and hand held breakers having valid noise label? | | ✓ | | |
| | Are all compressors and generators operating with doors closed? | | ✓ | | |

WATER QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 39; EM&A 4.2 | Are works carried out in such a manner as to minimise adverse impacts on the water quality within and outside the site on the transport routes and at the loading, dredging and dumping areas during execution of the works? | | ✓ | | |
| EP Annex I 40; EM&A 4.2 | Is there any design, construction, operation and maintenance of all the mitigation measures? | | ✓ | | |
| EP Annex I 41; EM&A 4.2 | Are all surface runoff generated from foundation works, dust control and vehicle washing, etc. within the site contained? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 4.2 | Is there any discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water? | | | ✓ | |
| EM&A 4.2 | Is there any direct foul water effluent to a foul sewer or to a sewage treatment and disposal facility either directly or indirectly by means of pumping or other means? | | ✓ | | |
| | Has discharge licence applied from EPD for discharging any effluent from the construction site? | | ✓ | | |
| | Is the drainage system adequate and well maintained to prevent flooding and overflow? | | ✓ | | |
| | Are channels, earth bunds or temporary ditches used to divert the surface runoff to the sedimentation tanks prior to discharge? | | ✓ | | |
| | Do the sedimentation tanks for settling surface runoff prior to discharge have adequate capacity and free from silt and sediment? | | ✓ | | |
| | Are sand and silt settled in the wheel washing bay, ditches and silt removal facilities cleaned and removed regularly (e.g. at least weekly) or as necessary? | | ✓ | | |
| | Are unnecessary water retained in receptacles and standing water avoided to prevent mosquito breeding? | | ✓ | | |
| | Is toilet that connects to foul sewer or chemical toilets provided? | | | ✓ | Temporary toilet used |

WASTE MANAGEMENT

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.2 | Are all works areas generally cleared of litter and refuse? | | ✓ | | |
| WMP Table 4.2 | Are general refuse and litter stored in enclosed bins or compaction units? | | ✓ | | |
| WMP Table 4.2 | Are refuse burned at construction site? | | | ✓ | |
| WMP Table 4.2 | Are three colour coded bins provided for collection of recyclable materials? | | ✓ | | |
| WMP Table 4.3 | Is processing generating chemical waste identified? | | ✓ | | |
| WMP Table 4.3 | Are chemical wastes handled in suitable packaging, labeling and storage? | ✓ | | | No chemical waste observed |
| WMP Table 4.3 | Is asbestos waste in suitable handling, storage and disposal? | ✓ | | | No asbestos found |
| WMP Table 4.4 | Are all stockpiled spoils covered with tarpaulin or other appropriate fabric? | ✓ | | | Stockpiled spoils are located to trucks as soon as possible |
| WMP Table 4.4 | Are all vehicles transporting wastes properly fitting tail boards and sides and materials securely covered? | | ✓ | | |
| WMP Table 4.4 | Are all wastes stored in a manner ensuring that they are held securely without loss or leakage? | | ✓ | | |
| WMP Table 4.4 | Are all waste storage areas cleaned and maintained? | | ✓ | | |
| WMP Table 4.4 | Are disposal permits obtained for each waste category? | | ✓ | | |
| WMP Table 4.4 | Is there any record/trip tickets of quantities of chemical wastes generated, recycled and disposal maintained for inspection? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.4 | Is there any record/trip tickets of the quantities of wastes generated recycled and disposed for inspection? | | ✓ | | |

## LANDSCAPE AND VISUAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 12; EM&A 6.4 | Is the works area screened during the construction phase through the use of decorative hoarding along the site boundary with unified edge treatment and interface? | | ✓ | | |
| EP Annex I 13; EM&A 6.4 | Is there any creation of precautionary area (Cordon Area) around trees retained equal to the spread of the trees canopy diameter? | | ✓ | | |
| EP Annex I 13; EM&A 6.4 | Is the Cordon Area fenced? | | ✓ | | |
| EP Annex I 14; EM&A 6.4 | Is there any storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Cordon Area? | | | ✓ | |

## CULTURAL HERITAGE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 1 | Are all monuments within the site preserved? | | ✓ | | |
| EP Annex I 4 | Are the Historic Buildings preserved? | | ✓ | | |
| EP Annex I 6 | Is there any necessary precaution taken during construction and excavation work to prevent any damage to the Historic Buildings? | | ✓ | | |
| EP Annex I 10 | Is there any percussive piling carried out? | | | ✓ | |
| EP Annex I 11 | Is there any concurrent pipe pile driving near the tree ring and the Main Building of the Former Marine Police Headquarters? | | | ✓ | |

## Abbreviation

| | |
|---|---|
| EP: | Environmental Permit (Environmental Permit No. EP-184/2004) |
| EM&A: | Environmental Monitoring & Audit Manual |
| NCO: | Noise Control Ordinance |
| WMP: | Waste Management Plan |

**Deficiency/Other Observations/Remedial Action to be Taken:**

Drip tray should be used on every oily containers

Wheel washing facility needs improvement

Waste water treatment system to be fixed

**Follow Up Actions to Previous Site Inspection:**

Stockpile are sprayed with water

Tire track cleaned.

## Signatures

| ET's Representative | Contractor's Representative | Architect's Representative |
|---|---|---|
| (Signature) | (Signature) | (Signature) |
| Ivan Tang | | |
| (Name in Block Letter) | (Name in Block Letter) | (Name in Block Letter) |

**NATURE & TECHNOLOGIES (HK) LIMITED**
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## Development at Former Marine Police Headquarters KIL 11161 (EP-184/2004)

## Environmental Site Inspection, Deficiency and Remedial Action Report

| | | | |
|---|---|---|---|
| **Date of Issue:** | 16-4-08 | **# Pages:** | 6 |
| **To:** | Hien Lee Engineering Co., Ltd.<br><br>Attn: Mr. Howard Lui<br>Project Manager | **Cc:** | **Ms Connie Wong – IEC**<br>CH2M HILL Hong Kong Ltd. |
| **Fax No.:** | 2366 2980 | | 2507 2293 |

**Inspection date:** 15-4-08 Inspected **ET's Representative:**
**Time:** 16:30-17:00 **Contractor's Representative:**
**Architect's Representative:**

**Site:** **Former Marine Police Headquarter (Phase 2)**

WEATHER

**Condition:** ☐ Sunny ☑ Fine ☐ Overcast ☐ Hazy ☐ Drizzle ☐ Rain ☐ Storm
**Humidity:** ☐ High ☑ Moderate ☐ Low
**Wind:** ☐ Calm ☑ Light ☐ Breeze ☐ Strong
**Temperature:** 20 °C

GENERAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP 1.3 | Is a copy of Environmental Permit together with all documents referred to in the permit kept in all sites/offices covered in the permit? | | ✓ | | |
| EP 1.5 | Is a copy of the most updated Environmental Permit displayed at the at all vehicular site entrances/exits or at a convenient location for public information? | | ✓ | | |

AIR QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 2.32 | Is the site hoarding of at least 2.4m high erected along the boundaries of the site (particularly along the northern boundary adjacent to No. 1, Peking Road) except at the site entrance/ exit? | | ✓ | | |
| EP Annex I 29; EM&A 2.32 | Is the truck speed suitably low (within 8 km/hr)? | | ✓ | | |
| EP Annex I 29; EM&A 2.32 | Are the dusty vehicle loads transported to and from the work location covered by tarpaulin sheets and not to be overloaded? | ✓ | | | Not observed on site |
| Annex I 30 | Are water suppression applied at least four times a day at the work sites with active dusty operations and to water all dust emission sources when necessary? | | ✓ | | Recorded need enhancement |
| EM&A 2.32 | Is there any vehicle wheel washing facilities including high pressure water jets provided at designated vehicle exit points? | | ✓ | | |
| EM&A 2.32 | Is there any side enclosure and covering of any aggregate or other dusty material storage piles, placing of stockpiles in an area to be sheltered on the top and the three sides, and sprayed with water? | ✓ | | | No storage pile observed |
| EM&A 2.32 | Are the demolished items covered by impervious sheeting or placed in area sheltered on the top and the three sides? | ✓ | | | Ditto |
| EM&A 2.32 | Are all dusty material sprayed with water prior to loading, unloading or transfer? | ✓ | | | Ditto |
| EP Annex I 31; EM&A 2.32 | Is the drop height of excavated materials controlled to a minimum to limit fugitive dust generation from unloading as far as practicable? | ✓ | | | Ditto |
| | Is the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores? | | ✓ | | |
| | Is the public road around the site entrance kept clean and free from dust? | | ✓ | | |
| | Immediately before leaving a construction site, is every vehicle washed to remove any dusty materials from its body and wheels? | | ✓ | | |
| | Are all machinery and equipments well maintained e.g. without black smoke emission? | | ✓ | | |

NOISE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| NCO | Are valid construction noise permits available for inspection? | | ✓ | | |
| NCO | Are conditions of construction noise permits for the relevant parts of the works implemented accordingly? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 34; EM&A 3.26 | Are the quiet power mechanical equipment with lower sound power level used? | | ✓ | | |
| EP Annex I 35; EM&A 3.26 | Is the site hoarding of 4m to 6m high along the eastern boundary with sufficient surface density (10 to 15 kg/$m^2$) as noise barrier or other possible noise mitigation measures provided? | ✓ | | | Excavation is completed |
| EP Annex I 36; EM&A 3.26 | Are the noise enclosure and temporary noise barriers with sufficient surface density (10 to 15 kg/$m^3$) (vertical and cantilevered types) or other possible noise mitigation measures adopted? | ✓ | | | Ditto |
| EP Annex I 37; EM&A 3.26 | Is the excavation carried out from west to east by making use of the topography so that the original platform can act as effective noise barrier? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Is proper acoustic barrier/enclosure for the noisy facilities installed? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Are all E&M facilities in a manner to avoid any unacceptable impact on the surrounding noise sensitive uses shielded and housed? | | ✓ | | |
| EP Annex I 38; EM&A 3.26 | Are all noisy facilities if practicable or position them near the western side of the site with proper at-source shielding especially on the east side fully enclosed? | ✓ | | | Excavation is completed |
| | Are all air compressors and hand held breakers having valid noise label? | | ✓ | | |
| | Are all compressors and generators operating with doors closed? | | ✓ | | |

WATER QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 39; EM&A 4.2 | Are works carried out in such a manner as to minimise adverse impacts on the water quality within and outside the site on the transport routes and at the loading, dredging and dumping areas during execution of the works? | | ✓ | | |
| EP Annex I 40; EM&A 4.2 | Is there any design, construction, operation and maintenance of all the mitigation measures? | | ✓ | | |
| EP Annex I 41; EM&A 4.2 | Are all surface runoff generated from foundation works, dust control and vehicle washing, etc. within the site contained? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 4.2 | Is there any discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water? | | | ✓ | |
| EM&A 4.2 | Is there any direct foul water effluent to a foul sewer or to a sewage treatment and disposal facility either directly or indirectly by means of pumping or other means? | | ✓ | | |
| | Has discharge licence applied from EPD for discharging any effluent from the construction site? | | ✓ | | |
| | Is the drainage system adequate and well maintained to prevent flooding and overflow? | | | ✓ | Emergency storage needed to be considered |
| | Are channels, earth bunds or temporary ditches used to divert the surface runoff to the sedimentation tanks prior to discharge? | | ✓ | | |
| | Do the sedimentation tanks for settling surface runoff prior to discharge have adequate capacity and free from silt and sediment? | | ✓ | | |
| | Are sand and silt settled in the wheel washing bay, ditches and silt removal facilities cleaned and removed regularly (e.g. at least weekly) or as necessary? | | ✓ | | |
| | Are unnecessary water retained in receptacles and standing water avoided to prevent mosquito breeding? | | ✓ | | |
| | Is toilet that connects to foul sewer or chemical toilets provided? | | | ✓ | Temporary toilet used |

WASTE MANAGEMENT

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.2 | Are all works areas generally cleared of litter and refuse? | | ✓ | | |
| WMP Table 4.2 | Are general refuse and litter stored in enclosed bins or compaction units? | | ✓ | | |
| WMP Table 4.2 | Are refuse burned at construction site? | | | ✓ | |
| WMP Table 4.2 | Are three colour coded bins provided for collection of recyclable materials? | | ✓ | | |
| WMP Table 4.3 | Is processing generating chemical waste identified? | | ✓ | | |
| WMP Table 4.3 | Are chemical wastes handled in suitable packaging, labeling and storage? | ✓ | | | No chemical waste observed |
| WMP Table 4.3 | Is asbestos waste in suitable handling, storage and disposal? | ✓ | | | No asbestos found |
| WMP Table 4.4 | Are all stockpiled spoils covered with tarpaulin or other appropriate fabric? | ✓ | | | Stockpiled spoils are loaded to trucks as soon as possible |
| WMP Table 4.4 | Are all vehicles transporting wastes properly fitting tail boards and sides and materials securely covered? | | ✓ | | |
| WMP Table 4.4 | Are all wastes stored in a manner ensuring that they are held securely without loss or leakage? | | ✓ | | |
| WMP Table 4.4 | Are all waste storage areas cleaned and maintained? | | ✓ | | |
| WMP Table 4.4 | Are disposal permits obtained for each waste category? | | ✓ | | |
| WMP Table 4.4 | Is there any record/trip tickets of quantities of chemical wastes generated, recycled and disposal maintained for inspection? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.4 | Is there any record/trip tickets of the quantities of wastes generated recycled and disposed for inspection? | | ✓ | | |

## LANDSCAPE AND VISUAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 12; EM&A 6.4 | Is the works area screened during the construction phase through the use of decorative hoarding along the site boundary with unified edge treatment and interface? | | ✓ | | |
| EP Annex I 13; EM&A 6.4 | Is there any creation of precautionary area (Cordon Area) around trees retained equal to the spread of the trees canopy diameter? | | ✓ | | |
| EP Annex I 13; EM&A 6.4 | Is the Cordon Area fenced? | | ✓ | | |
| EP Annex I 14; EM&A 6.4 | Is there any storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Cordon Area? | | | ✓ | |

## CULTURAL HERITAGE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 1 | Are all monuments within the site preserved? | | ✓ | | |
| EP Annex I 4 | Are the Historic Buildings preserved? | | ✓ | | |
| EP Annex I 6 | Is there any necessary precaution taken during construction and excavation work to prevent any damage to the Historic Buildings? | | ✓ | | |
| EP Annex I 10 | Is there any percussive piling carried out? | | | ✓ | |
| EP Annex I 11 | Is there any concurrent pipe pile driving near the tree ring and the Main Building of the Former Marine Police Headquarters? | | | ✓ | |

## Abbreviation

| | |
|---|---|
| EP: | Environmental Permit (Environmental Permit No. EP-184/2004) |
| EM&A: | Environmental Monitoring & Audit Manual |
| NCO: | Noise Control Ordinance |
| WMP: | Waste Management Plan |

**Deficiency/Other Observations/Remedial Action to be Taken:**

**Follow Up Actions to Previous Site Inspection:**

Wheel washing facility is in order
Oily container removed

## Signatures

| ET's Representative | Contractor's Representative | Architect's Representative |
|---|---|---|
| (Signature) | (Signature) | (Signature) |
| Ivan Tsng | | |
| (Name in Block Letter) | (Name in Block Letter) | (Name in Block Letter) |

**NATURE & TECHNOLOGIES (HK) LIMITED**
**科技環保(香港)有限公司**
Unit 2 & 3, 4/F., Wellborne Commercial Centre, 8 Java Road, North Point, Hong Kong.
香港北角渣華道8號威邦商業中心4樓2及3室 Tel電話 : (852) 2877 3122 Fax傳真 : (852) 2311 0922
Email電郵: enquiry@nt.com.hk Web page網址 : http://www.nt.com.hk

## Development at Former Marine Police Headquarters KIL 11161 (EP-184/2004)

### Environmental Site Inspection, Deficiency and Remedial Action Report

| | | | |
|---|---|---|---|
| **Date of Issue:** | 23-4-08 | **# Pages:** | 6 |
| **To:** | Hien Lee Engineering Co., Ltd.<br><br>Attn: Mr. Howard Lui<br>Project Manager | **Cc:** | **Ms Connie Wong – IEC**<br>CH2M HILL Hong Kong Ltd. |
| **Fax No.:** | 2366 2980 | | 2507 2293 |

**Inspection date:** 22-4-08 Inspected
**Time:** 17:00-17:30

**ET's Representative:**
**Contractor's Representative:**
**Architect's Representative:**

**Site:** Former Marine Police Headquarter (Phase 2)

WEATHER

**Condition:** ☐ Sunny ☑ Fine ☐ Overcast ☐ Hazy ☐ Drizzle ☐ Rain ☐ Storm
**Humidity:** ☐ High ☑ Moderate ☐ Low
**Wind:** ☐ Calm ☑ Light ☐ Breeze ☐ Strong
**Temperature:** 20 °C

GENERAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP 1.3 | Is a copy of Environmental Permit together with all documents referred to in the permit kept in all sites/offices covered in the permit? | | √ | | |
| EP 1.5 | Is a copy of the most updated Environmental Permit displayed at the at all vehicular site entrances/exits or at a convenient location for public information? | | √ | | |

AIR QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 2.32 | Is the site hoarding of at least 2.4m high erected along the boundaries of the site (particularly along the northern boundary adjacent to No. 1, Peking Road) except at the site entrance/ exit? | | ✓ | | |
| EP Annex I 29; EM&A 2.32 | Is the truck speed suitably low (within 8 km/hr)? | ✓ | | | Not observed on site |
| EP Annex I 29; EM&A 2.32 | Are the dusty vehicle loads transported to and from the work location covered by tarpaulin sheets and not to be overloaded? | ✓ | | | Ditto |
| Annex I 30 | Are water suppression applied at least four times a day at the work sites with active dusty operations and to water all dust emission sources when necessary? | | ✓ | | Records need enhancement |
| EM&A 2.32 | Is there any vehicle wheel washing facilities including high pressure water jets provided at designated vehicle exit points? | | ✓ | | Wheel washing facility needs improvement |
| EM&A 2.32 | Is there any side enclosure and covering of any aggregate or other dusty material storage piles, placing of stockpiles in an area to be sheltered on the top and the three sides, and sprayed with water? | | | ✓ | Storage pile required covering |
| EM&A 2.32 | Are the demolished items covered by impervious sheeting or placed in area sheltered on the top and the three sides? | | | ✓ | Ditto |
| EM&A 2.32 | Are all dusty material sprayed with water prior to loading, unloading or transfer? | ✓ | | | Not observed |
| EP Annex I 31; EM&A 2.32 | Is the drop height of excavated materials controlled to a minimum to limit fugitive dust generation from unloading as far as practicable? | ✓ | | | Ditto |
| | Is the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point paved with concrete, bituminous materials or hardcores? | | ✓ | | |
| | Is the public road around the site entrance kept clean and free from dust? | | ✓ | | |
| | Immediately before leaving a construction site, is every vehicle washed to remove any dusty materials from its body and wheels? | | ✓ | | |
| | Are all machinery and equipments well maintained e.g. without black smoke emission? | | ✓ | | |

NOISE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| NCO | Are valid construction noise permits available for inspection? | | ✓ | | |
| NCO | Are conditions of construction noise permits for the relevant parts of the works implemented accordingly? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 34; EM&A 3.26 | Are the quiet power mechanical equipment with lower sound power level used? | | ✓ | | |
| EP Annex I 35; EM&A 3.26 | Is the site hoarding of 4m to 6m high along the eastern boundary with sufficient surface density (10 to 15 kg/$m^2$) as noise barrier or other possible noise mitigation measures provided? | ✓ | | | Excavation is completed |
| EP Annex I 36; EM&A 3.26 | Are the noise enclosure and temporary noise barriers with sufficient surface density (10 to 15 kg/$m^3$) (vertical and cantilevered types) or other possible noise mitigation measures adopted? | ✓ | | | Ditto |
| EP Annex I 37; EM&A 3.26 | Is the excavation carried out from west to east by making use of the topography so that the original platform can act as effective noise barrier? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Is proper acoustic barrier/enclosure for the noisy facilities installed? | ✓ | | | Ditto |
| EP Annex I 38; EM&A 3.26 | Are all E&M facilities in a manner to avoid any unacceptable impact on the surrounding noise sensitive uses shielded and housed? | | ✓ | | |
| EP Annex I 38; EM&A 3.26 | Are all noisy facilities if practicable or position them near the western side of the site with proper at-source shielding especially on the east side fully enclosed? | ✓ | | | Excavation is completed |
| | Are all air compressors and hand held breakers having valid noise label? | | ✓ | | |
| | Are all compressors and generators operating with doors closed? | | ✓ | | |

WATER QUALITY

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 39; EM&A 4.2 | Are works carried out in such a manner as to minimise adverse impacts on the water quality within and outside the site on the transport routes and at the loading, dredging and dumping areas during execution of the works? | | ✓ | | |
| EP Annex I 40; EM&A 4.2 | Is there any design, construction, operation and maintenance of all the mitigation measures? | | ✓ | | |
| EP Annex I 41; EM&A 4.2 | Are all surface runoff generated from foundation works, dust control and vehicle washing, etc. within the site contained? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EM&A 4.2 | Is there any discharge directly or indirectly or cause or permit or suffer to be discharged into any public sewer, stormwater drain, channel, stream-course or sea any trade effluent or foul or contaminated water or cooling or hot water? | | | ✓ | |
| EM&A 4.2 | Is there any direct foul water effluent to a foul sewer or to a sewage treatment and disposal facility either directly or indirectly by means of pumping or other means? | | ✓ | | |
| | Has discharge licence applied from EPD for discharging any effluent from the construction site? | | ✓ | | |
| | Is the drainage system adequate and well maintained to prevent flooding and overflow? | | ✓ | | Emergency storage needs to be considered |
| | Are channels, earth bunds or temporary ditches used to divert the surface runoff to the sedimentation tanks prior to discharge? | | ✓ | | |
| | Do the sedimentation tanks for settling surface runoff prior to discharge have adequate capacity and free from silt and sediment? | | ✓ | | |
| | Are sand and silt settled in the wheel washing bay, ditches and silt removal facilities cleaned and removed regularly (e.g. at least weekly) or as necessary? | | ✓ | | |
| | Are unnecessary water retained in receptacles and standing water avoided to prevent mosquito breeding? | | ✓ | | |
| | Is toilet that connects to foul sewer or chemical toilets provided? | | | ✓ | Temporary toilet used |

WASTE MANAGEMENT

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.2 | Are all works areas generally cleared of litter and refuse? | | ✓ | | |
| WMP Table 4.2 | Are general refuse and litter stored in enclosed bins or compaction units? | | ✓ | | |
| WMP Table 4.2 | Are refuse burned at construction site? | | | ✓ | |
| WMP Table 4.2 | Are three colour coded bins provided for collection of recyclable materials? | | | ✓ | 3 color coded bins were not found |
| WMP Table 4.3 | Is processing generating chemical waste identified? | | ✓ | | |
| WMP Table 4.3 | Are chemical wastes handled in suitable packaging, labeling and storage? | ✓ | | | No chemical waste observed |
| WMP Table 4.3 | Is asbestos waste in suitable handling, storage and disposal? | ✓ | | | No asbestos found |
| WMP Table 4.4 | Are all stockpiled spoils covered with tarpaulin or other appropriate fabric? | ✓ | | | Stockpiled spoils are loaded to trucks as soon as possible |
| WMP Table 4.4 | Are all vehicles transporting wastes properly fitting tail boards and sides and materials securely covered? | | ✓ | | |
| WMP Table 4.4 | Are all wastes stored in a manner ensuring that they are held securely without loss or leakage? | | ✓ | | |
| WMP Table 4.4 | Are all waste storage areas cleaned and maintained? | | | ✓ | Waste needs cleaning |
| WMP Table 4.4 | Are disposal permits obtained for each waste category? | | ✓ | | |
| WMP Table 4.4 | Is there any record/trip tickets of quantities of chemical wastes generated, recycled and disposal maintained for inspection? | | ✓ | | |

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| WMP Table 4.4 | Is there any record/trip tickets of the quantities of wastes generated recycled and disposed for inspection? | | | ✓ | |

## LANDSCAPE AND VISUAL

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 12; EM&A 6.4 | Is the works area screened during the construction phase through the use of decorative hoarding along the site boundary with unified edge treatment and interface? | | ✓ | | |
| EP Annex I 13; EM&A 6.4 | Is there any creation of precautionary area (Cordon Area) around trees retained equal to the spread of the trees canopy diameter? | | ✓ | | T129 area needs checking |
| EP Annex I 13; EM&A 6.4 | Is the Cordon Area fenced? | | ✓ | | |
| EP Annex I 14; EM&A 6.4 | Is there any storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Cordon Area? | | | ✓ | |

## CULTURAL HERITAGE

| Ref. | Checklist Conditions | N/A | Yes | No | Remarks |
|---|---|---|---|---|---|
| EP Annex I 1 | Are all monuments within the site preserved? | | ✓ | | |
| EP Annex I 4 | Are the Historic Buildings preserved? | | ✓ | | |
| EP Annex I 6 | Is there any necessary precaution taken during construction and excavation work to prevent any damage to the Historic Buildings? | | ✓ | | |
| EP Annex I 10 | Is there any percussive piling carried out? | | | ✓ | |
| EP Annex I 11 | Is there any concurrent pipe pile driving near the tree ring and the Main Building of the Former Marine Police Headquarters? | | | ✓ | |

## Abbreviation

| | |
|---|---|
| EP: | Environmental Permit (Environmental Permit No. EP-184/2004) |
| EM&A: | Environmental Monitoring & Audit Manual |
| NCO: | Noise Control Ordinance |
| WMP: | Waste Management Plan |

**Deficiency/Other Observations/Remedial Action to be Taken:**

Waste storage area needs cleaning

Storage pile needs covering

**Follow Up Actions to Previous Site Inspection:**

## Signatures

| ET's Representative | Contractor's Representative | Architect's Representative |
|---|---|---|
| (Signature) | (Signature) | (Signature) |
| Ivan Ting | Mark Lui | |
| (Name in Block Letter) | (Name in Block Letter) | (Name in Block Letter) |

## Appendix D: Calibration records for the HVSs and calibration certificate for the dust meters

High-Volume TSP Sampler
5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | A1 |
| Calibrated by | : | K.T.Ho |
| Date | : | 22/02/08 |
| Sampler | | |
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0814 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | CM-AIR-43 |
| Service Date | : | 2 July 2007 |
| Slope (m) | : | 0.057452 |
| Intercept (b) | : | -0.026137 |
| Correlation Coefficient(r) | : | 0.999910 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 288 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.0 | 3.488 | 1.763 | 56 | 56.4 |
| 2 | 13 holes | 9.1 | 3.038 | 1.538 | 43 | 43.3 |
| 3 | 10 holes | 7.7 | 2.794 | 1.417 | 37 | 37.3 |
| 4 | 7 holes | 4.7 | 2.183 | 1.111 | 21 | 21.1 |
| 5 | 5 holes | 3.0 | 1.744 | 0.892 | 10 | 10.1 |

Sampler Calibration Relationship

Slope(m):52.887 Intercept(b): -37.460 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 25/02/08

## High-Volume TSP Sampler
## 5-Point Calibration Record

Location : A2
Calibrated by : K.T.Ho
Date : 22/02/08

Sampler
Model : GMWS-2310 ACCU-VOL
Serial Number : S/N 1061

Calibration Orfice and Standard Calibration Relationship
Serial Number : CM-AIR-43
Service Date : 2 July 2007
Slope (m) : 0.057452
Intercept (b) : -0.026137
Correlation Coefficient(r) : 0.999910

Standard Condition
Pstd (hpa) : 1013
Tstd (K) : 298.18

Calibration Condition
Pa (hpa) : 1010
Ta(K) : 288

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (indicated flow) | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.7 | 3.567 | 1.735 | 60 | 60.0 |
| 2 | 13 holes | 9.7 | 3.117 | 1.518 | 46 | 46.0 |
| 3 | 10 holes | 7.9 | 2.812 | 1.371 | 37 | 37.0 |
| 4 | 7 holes | 5.4 | 2.326 | 1.135 | 23 | 23.0 |
| 5 | 5 holes | 3.6 | 1.899 | 0.929 | 11 | 11.0 |

Sampler Calibration Relationship

Slope(m):60.709 Intercept(b): -45.774 Correlation Coefficient(r): 0.9997

Checked by: Magnum Fan Date: 25/02/08

## High-Volume TSP Sampler
## 5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | A3 |
| Calibrated by | : | K.T.Ho |
| Date | : | 22/02/08 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 1254 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | CM-AIR-43 |
| Service Date | : | 2 July 2007 |
| Slope (m) | : | 0.057452 |
| Intercept (b) | : | -0.026137 |
| Correlation Coefficient(r) | : | 0.999910 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 288 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC (indicated flow) | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 11.4 | 3.403 | 1.721 | 57 | 57.5 |
| 2 | 13 holes | 8.6 | 2.956 | 1.497 | 48 | 48.4 |
| 3 | 10 holes | 6.7 | 2.609 | 1.324 | 41 | 41.3 |
| 4 | 7 holes | 3.9 | 1.991 | 1.015 | 28 | 28.2 |
| 5 | 5 holes | 2.3 | 1.529 | 0.784 | 20 | 20.2 |

Sampler Calibration Relationship

Slope(m): 40.234 Intercept(b): -11.920 Correlation Coefficient(r): 0.9995

Checked by: Magnum Fan Date: 25/02/08

## High-Volume TSP Sampler
## 5-Point Calibration Record

| | | |
|---|---|---|
| Location | : | A4 |
| Calibrated by | : | K.T.Ho |
| Date | : | 22/02/08 |

Sampler

| | | |
|---|---|---|
| Model | : | GMWS-2310 ACCU-VOL |
| Serial Number | : | S/N 0816 |

Calibration Orfice and Standard Calibration Relationship

| | | |
|---|---|---|
| Serial Number | : | CM-AIR-43 |
| Service Date | : | 18 May 2006 |
| Slope (m) | : | 0.057363 |
| Intercept (b) | : | -0.025638 |
| Correlation Coefficient(r) | : | 0.999913 |

Standard Condition

| | | |
|---|---|---|
| Pstd (hpa) | : | 1013 |
| Tstd (K) | : | 298.18 |

Calibration Condition

| | | |
|---|---|---|
| Pa (hpa) | : | 1010 |
| Ta(K) | : | 288 |

| Resistance Plate | | dH [green liquid] (inch water) | Z | X=Qstd (cubic meter/min) | IC | Y |
|---|---|---|---|---|---|---|
| 1 | 18 holes | 12.5 | 3.599 | 1.751 | 59 | 60.1 |
| 2 | 13 holes | 9.6 | 3.154 | 1.536 | 46 | 46.8 |
| 3 | 10 holes | 7.9 | 2.861 | 1.394 | 39 | 39.7 |
| 4 | 7 holes | 4.9 | 2.253 | 1.100 | 24 | 24.4 |
| 5 | 5 holes | 3.0 | 1.763 | 0.864 | 12. | 12.2 |

Sampler Calibration Relationship

Slope(m):53.364 Intercept(b): -34.266 Correlation Coefficient(r): 0.9993

Checked by: Magnum Fan Date: 25/02/08

# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-424-7427 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

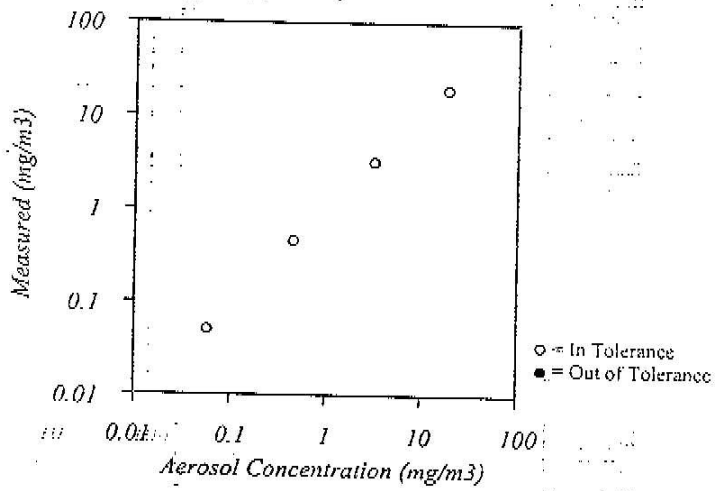
| Environment Condition | | |
|---|---|---|
| Temperature | 69.3 (20.7) | °F (°C) |
| Relative Humidity | 42 | %RH |
| Barometric Pressure | 28.92 (979.3) | inHg (hPa) |

| | |
|---|---|
| **Model** | **8520** |
| **Serial Number** | **85202623** |

☒ As Left ☐ As Found

☒ In Tolerance ☐ Out of Tolerance

**Linearity Plot**




**Zero Stability Results**

| Average: | Minimum: | Maximum: | Time: |
|---|---|---|---|
| 0.000 :mg/m³ | 0.000 :mg/m³ | 0.000 :mg/m³ | 168 :hrs. |

*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1*

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|---|---|---|---|
| DC Voltage | E002235 | 04-05-07 | 04-05-08 |
| Temperature | E002873 | 02-23-07 | 02-23-08 |
| DC Voltage | E003314 | 07-11-07 | 07-11-08 |

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|---|---|---|---|
| Barometric Pressure | E001329 | 04-30-07 | 04-30-08 |
| Humidity | E002873 | 02-23-07 | 02-23-08 |
| DC Voltage | E003315 | 07-11-07 | 07-11-08 |

Calibrated

☑ Final Function Check

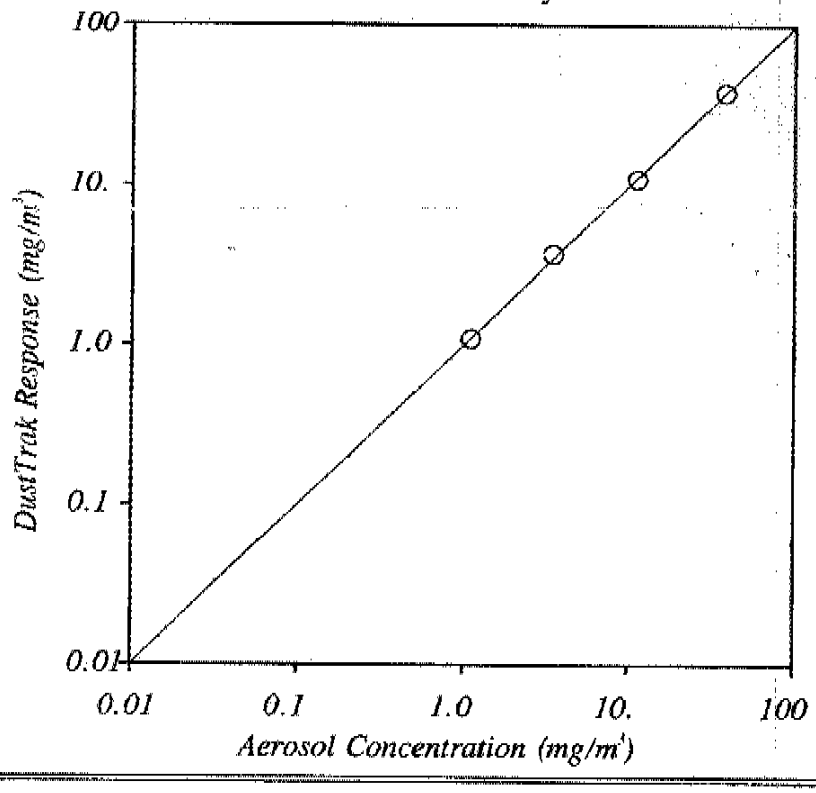
September 28, 2007
Date

# TSI CERTIFICATE OF CALIBRATION AND TESTING

TSI Model **8520 DustTrak™** TSI Serial No. **22397**

Description **Aerosol Monitor**

DustTrak™ Linearity Plot




| Zero Stability Results | |
|---|---|
| Average | 0.000 :mg/m³ |
| Minimum | 0.000 :mg/m³ |
| Maximum | 0.001 :mg/m³ |
| Time | 4:00 :Hrs |

*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil aerosol and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona test dust.) Our calibration ratio is greater than 1.2:1.*

Calibrated by ☑ Final Function Check

JUN 19, 2007
Calibration Date

**TSI Incorporated**
**Health & Safety**
**Instruments Division**

**Mailing Address:** P.O. Box 64394 St. Paul, MN 55164 USA
**Shipping Address:** 500 Cardigan Road St. Paul, MN 55126 USA
**Phone:** (800) 926-8378 or (651) 490-2760 **Fax:** (651) 490-2704

## Appendix E: Detailed impact monitoring data of 1-hour and 24-hour TSP

**The Summary of 1-hr TSP Concentration (μg/m$^3$) at A1**

| Date | Sampling Time (1) | Sampling Time (2) | Sampling Time (3) | Reading (1) | Reading (2) | Reading (3) |
|---|---|---|---|---|---|---|
| | | | | μg/m$^3$ | μg/m$^3$ | μg/m$^3$ |
| 01-Apr-08 | 9:10 | 10:10 | 11:10 | 112 | 114 | 117 |
| 07-Apr-08 | 9:10 | 10:10 | 11:10 | 116 | 119 | 121 |
| 11-Apr-08 | 9:10 | 10:10 | 11:10 | 152 | 154 | 157 |
| 17-Apr-08 | 9:10 | 10:10 | 11:10 | 115 | 127 | 120 |
| 23-Apr-08 | 9:10 | 10:10 | 11:10 | 127 | 139 | 140 |
| 29-Apr-08 | 9:10 | 10:10 | 11:10 | 112 | 118 | 121 |

**The Summary of 1-hr TSP Concentration (μg/m$^3$) at A2a**

| Date | Sampling Time (1) | Sampling Time (2) | Sampling Time (3) | Reading (1) | Reading (2) | Reading (3) |
|---|---|---|---|---|---|---|
| | | | | μg/m$^3$ | μg/m$^3$ | μg/m$^3$ |
| 01-Apr-08 | 9:00 | 10:00 | 11:00 | 110 | 111 | 110 |
| 07-Apr-08 | 9:00 | 10:00 | 11:00 | 124 | 139 | 128 |
| 11-Apr-08 | 9:00 | 10:00 | 11:00 | 149 | 162 | 177 |
| 17-Apr-08 | 9:00 | 10:00 | 11:00 | 132 | 144 | 156 |
| 23-Apr-08 | 9:00 | 10:00 | 11:00 | 162 | 167 | 175 |
| 29-Apr-08 | 9:00 | 10:00 | 11:00 | 148 | 156 | 177 |

**The Summary of 1-hr TSP Concentration (μg/m$^3$) at A3**

| Date | Sampling Time (1) | Sampling Time (2) | Sampling Time (3) | Reading (1) | Reading (2) | Reading (3) |
|---|---|---|---|---|---|---|
| | | | | μg/m$^3$ | μg/m$^3$ | μg/m$^3$ |
| 01-Apr-08 | 12:30 | 13:30 | 14:30 | 111 | 112 | 113 |
| 07-Apr-08 | 12:30 | 13:30 | 14:30 | 148 | 192 | 162 |

**The Summary of 1-hr TSP Concentration (μg/m$^3$) at A4**

| Date | Sampling Time (1) | Sampling Time (2) | Sampling Time (3) | Reading (1) | Reading (2) | Reading (3) |
|---|---|---|---|---|---|---|
| | | | | μg/m$^3$ | μg/m$^3$ | μg/m$^3$ |
| 01-Apr-08 | 12:40 | 13:40 | 14:40 | 118 | 119 | 120 |
| 07-Apr-08 | 12:30 | 13:30 | 14:30 | 126 | 125 | 134 |
| 11-Apr-08 | 12:30 | 13:30 | 14:30 | 150 | 151 | 144 |
| 17-Apr-08 | 12:10 | 13:10 | 14:10 | 119 | 121 | 110 |
| 23-Apr-08 | 12:20 | 13:20 | 14:20 | 141 | 136 | 157 |
| 29-Apr-08 | 12:20 | 13:20 | 14:20 | 159 | 148 | 137 |

**The Summary of 24-hr TSP Concentration (μg/m$^3$) at A1**

| Date | Sampling Time | Weather | Elapsed Time | Initial Standard Flow Rate | Final Standard Flow Rate | Ave. Standard Flow Rate | Total Standard Volume | Initial Filter Weight | Final Filter Weight | TSP Conc. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (min) | (m$^3$/min) | (m$^3$/min) | (m$^3$/min) | (m$^3$) | (g) | (g) | μg/m$^3$ |
| 01-Apr-08 | 10:00 | Drizzle | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.7930 | 2.9312 | 73 |
| 07-Apr-08 | 10:00 | Sunny | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.7580 | 2.9003 | 75 |
| 11-Apr-08 | 10:00 | Fine | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.7998 | 2.9325 | 70 |
| 17-Apr-08 | 10:00 | Fine | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.7898 | 2.9151 | 66 |
| 23-Apr-08 | 10:00 | Cloudy | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.7701 | 2.8994 | 69 |
| 29-Apr-08 | 10:00 | Fine | 1440 | 1.35 | 1.35 | 1.35 | 1944 | 2.7998 | 2.9306 | 67 |
| | | | | | | | | | AVE | 59 |

**The Summary of 24-hr TSP Concentration (μg/m$^3$) at A2a**

| Date | Sampling Time | Weather | Elapsed Time | Initial Standard Flow Rate | Final Standard Flow Rate | Ave. Standard Flow Rate | Total Standard Volume | Initial Filter Weight | Final Filter Weight | TSP Conc. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (min) | (m$^3$/min) | (m$^3$/min) | (m$^3$/min) | (m$^3$) | (g) | (g) | μg/m$^3$ |
| 01-Apr-08 | 10:00 | Drizzle | 1440 | 1.36 | 1.36 | 1.36 | 1958.4 | 2.7362 | 2.8862 | 77 |
| 07-Apr-08 | 10:00 | Sunny | 1440 | 1.36 | 1.36 | 1.36 | 1958.4 | 2.7685 | 2.9295 | 82 |
| 11-Apr-08 | 10:00 | Fine | 1440 | 1.36 | 1.36 | 1.36 | 1958.4 | 2.7978 | 2.9386 | 72 |
| 17-Apr-08 | 10:00 | Fine | 1440 | 1.36 | 1.36 | 1.36 | 1958.4 | 2.7420 | 2.8901 | 76 |
| 23-Apr-08 | 10:00 | Cloudy | 1440 | 1.36 | 1.36 | 1.36 | 1958.4 | 2.7781 | 2.9080 | 66 |
| 29-Apr-08 | 10:00 | Fine | 1440 | 1.31 | 1.31 | 1.31 | 1886.4 | 2.8268 | 2.9607 | 71 |
| | | | | | | | | | AVE | 74 |

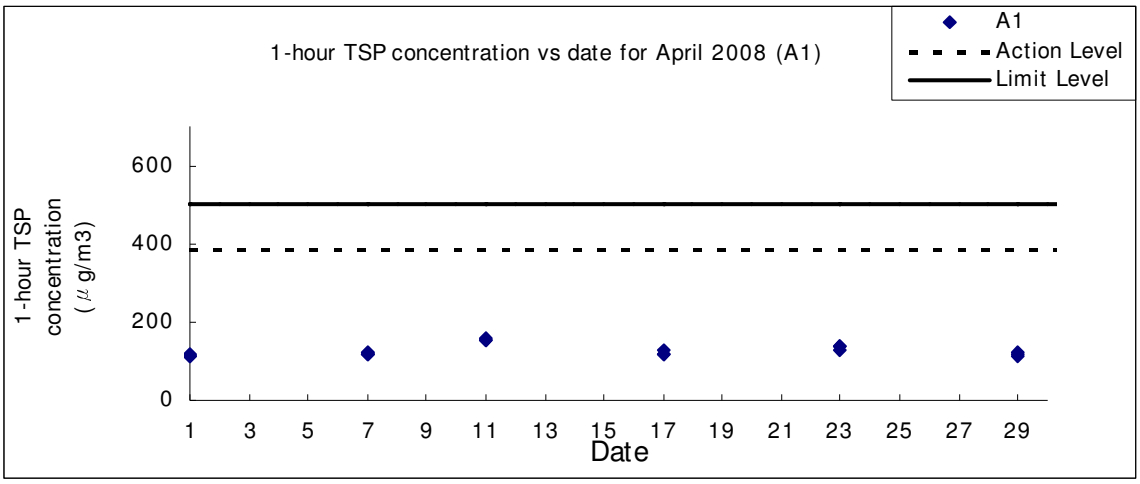
**The Summary of 24-hr TSP Concentration (μg/m$^3$) at A3**

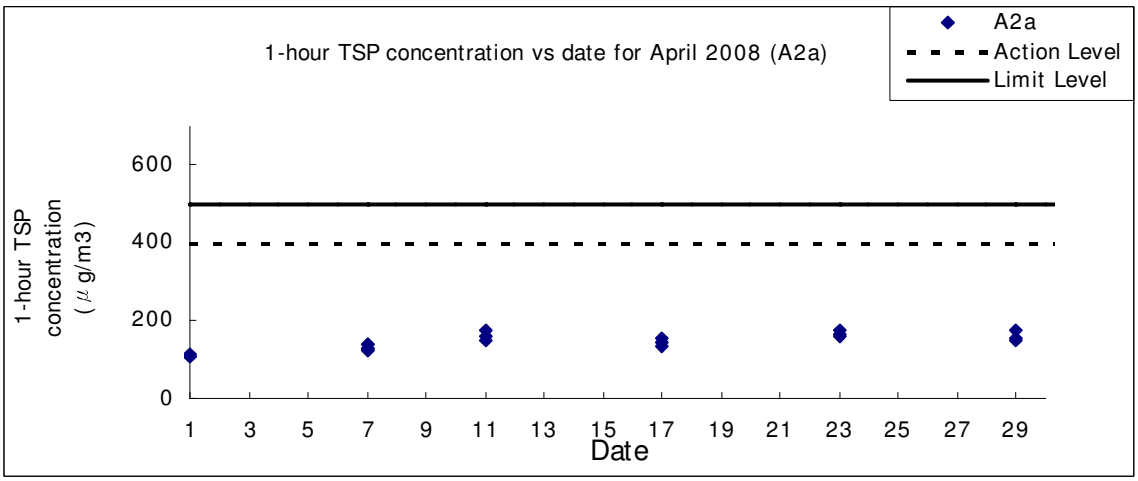
| Date | Sampling Time | Weather | Elapsed Time | Initial Standard Flow Rate | Final Standard Flow Rate | Ave. Standard Flow Rate | Total Standard Volume | Initial Filter Weight | Final Filter Weight | TSP Conc. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (min) | (m$^3$/min) | (m$^3$/min) | (m$^3$/min) | (m$^3$) | (g) | (g) | μg/m$^3$ |
| 01-Apr-08 | 10:00 | Drizzle | 1440 | 1.25 | 1.25 | 1.25 | 1800 | 2.7906 | 2.9455 | 86 |
| 07-Apr-08 | 10:00 | Sunny | 1440 | 1.25 | 1.25 | 1.25 | 1800 | 2.7565 | 2.9077 | 84 |
| | | | | | | | | | AVE | 85 |

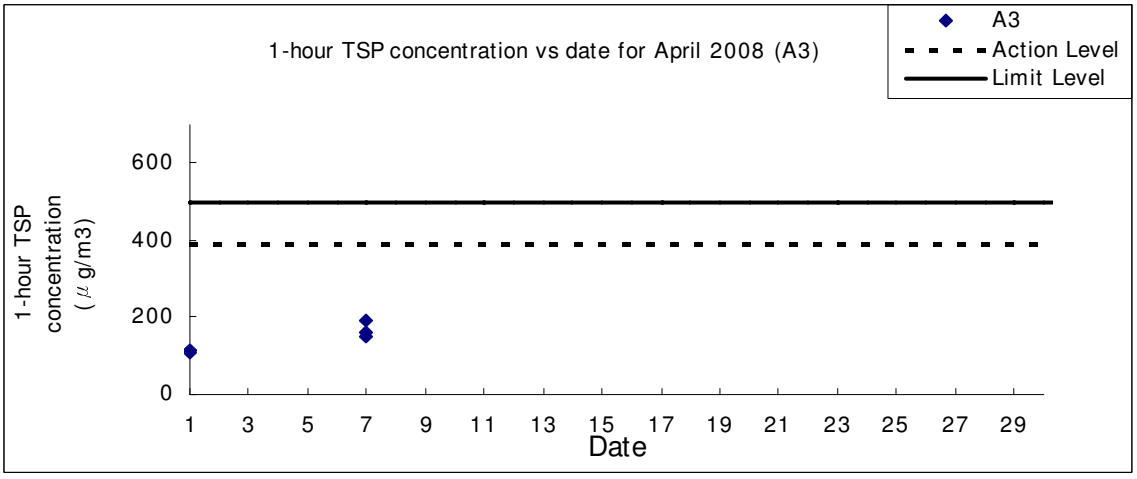
**The Summary of 24-hr TSP Concentration (μg/m$^3$) at A4**

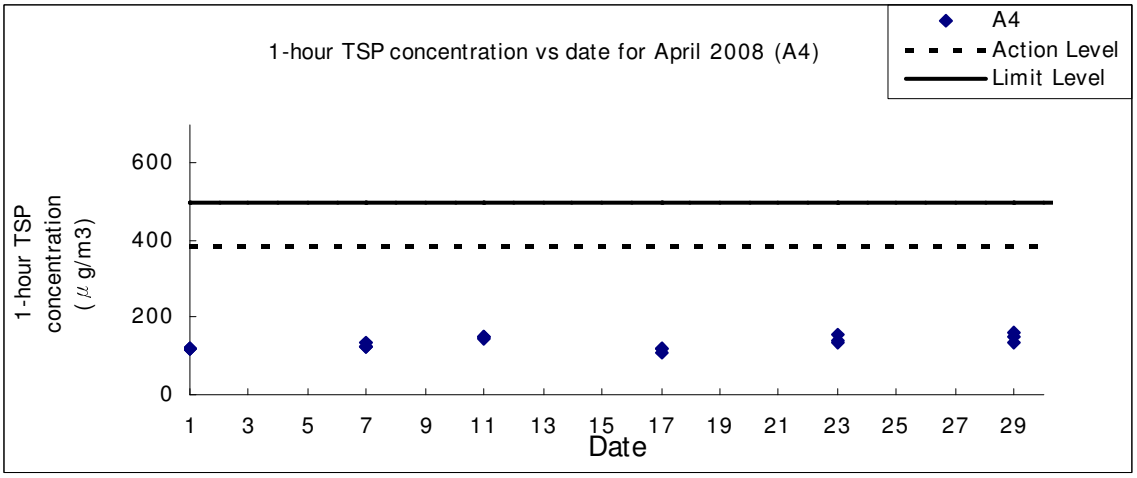
| Date | Sampling Time | Weather | Elapsed Time | Initial Standard Flow Rate | Final Standard Flow Rate | Ave. Standard Flow Rate | Total Standard Volume | Initial Filter Weight | Final Filter Weight | TSP Conc. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (min) | (m$^3$/min) | (m$^3$/min) | (m$^3$/min) | (m$^3$) | (g) | (g) | μg/m$^3$ |
| 01-Apr-08 | 10:00 | Drizzle | 1440 | 1.34 | 1.34 | 1.34 | 1929.6 | 2.7405 | 2.9070 | 86 |
| 07-Apr-08 | 10:00 | Sunny | 1440 | 1.34 | 1.34 | 1.34 | 1929.6 | 2.8196 | 2.9701 | 78 |
| 11-Apr-08 | 10:00 | Fine | 1440 | 1.34 | 1.34 | 1.34 | 1929.6 | 2.7681 | 2.9095 | 73 |
| 17-Apr-08 | 10:00 | Fine | 1440 | 1.34 | 1.34 | 1.34 | 1929.6 | 2.7569 | 2.9007 | 75 |
| 23-Apr-08 | 10:00 | Cloudy | 1440 | 1.34 | 1.34 | 1.34 | 1929.6 | 2.7788 | 2.9147 | 70 |
| 29-Apr-08 | 10:00 | Fine | 1440 | 1.32 | 1.32 | 1.32 | 1900.8 | 2.7579 | 2.9008 | 75 |

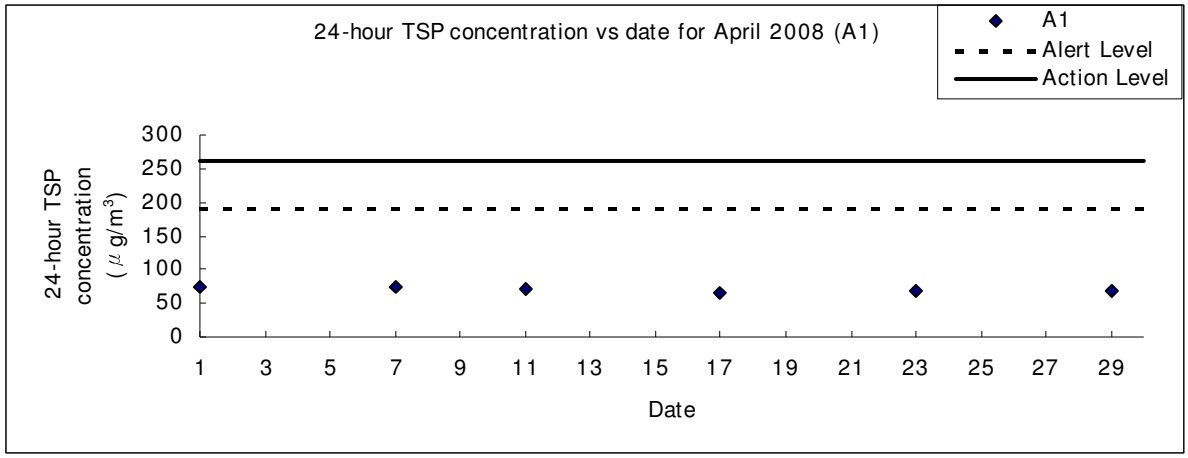
## Appendix F: Graphical presentations of the air impact monitoring results

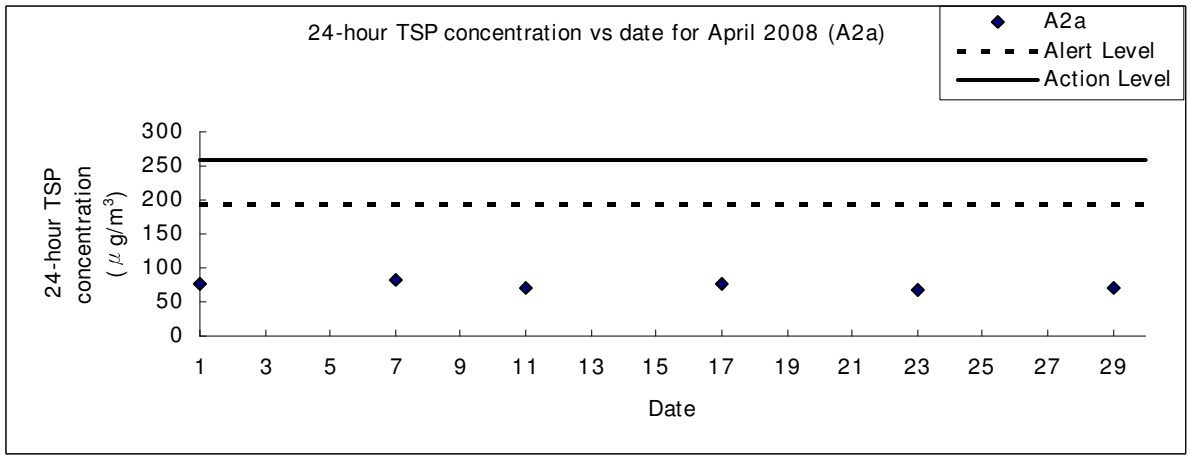

1-hour TSP concentration vs date for April 2008 (A1)
A1
Action Level
Limit Level
1-hour TSP concentration (μg/m3)
600
400
200
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date

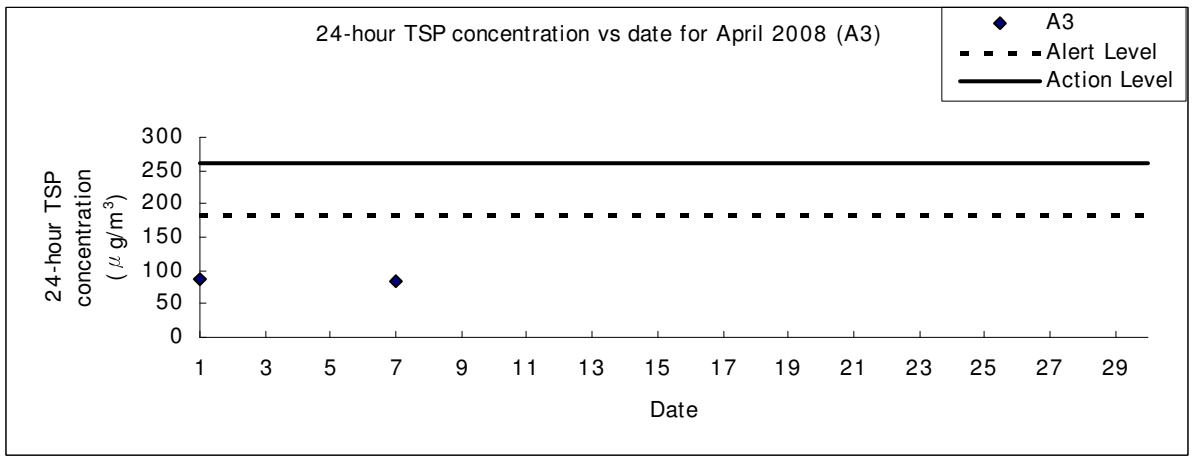

1-hour TSP concentration vs date for April 2008 (A2a)
A2a
Action Level
Limit Level
1-hour TSP concentration (μg/m3)
600
400
200
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date

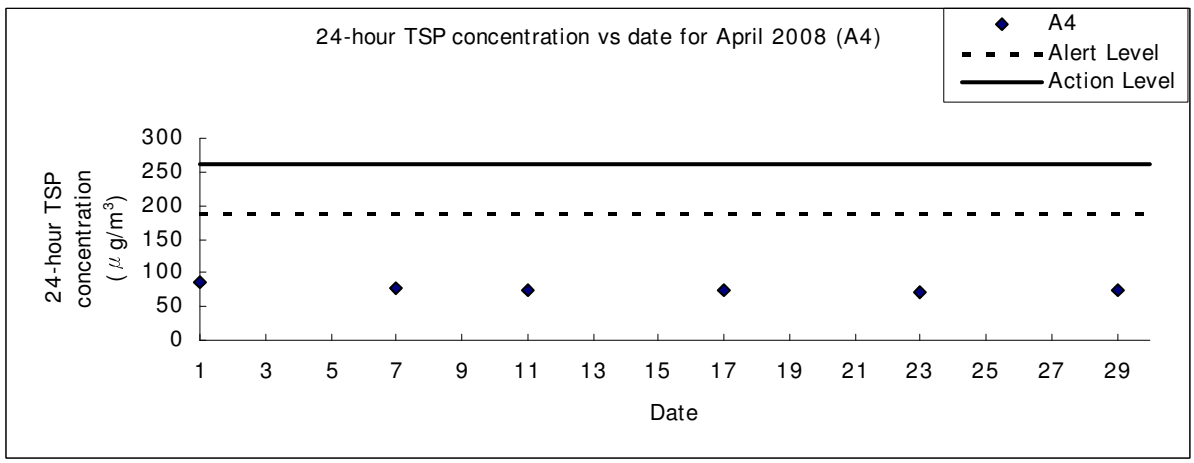

1-hour TSP concentration vs date for April 2008 (A3)
A3
Action Level
Limit Level
1-hour TSP concentration (μg/m3)
600
400
200
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date


1-hour TSP concentration vs date for April 2008 (A4)
A4
Action Level
Limit Level
1-hour TSP concentration (μg/m3)
600
400
200
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date


24-hour TSP concentration vs date for April 2008 (A1)
A1
Alert Level
Action Level
24-hour TSP concentration (μg/m3)
300
250
200
150
100
50
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date


24-hour TSP concentration vs date for April 2008 (A2a)
A2a
Alert Level
Action Level
24-hour TSP concentration (μg/m3)
300
250
200
150
100
50
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date


24-hour TSP concentration vs date for April 2008 (A3)
A3
Alert Level
Action Level
24-hour TSP concentration (μg/m3)
300
250
200
150
100
50
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date


24-hour TSP concentration vs date for April 2008 (A4)
A4
Alert Level
Action Level
24-hour TSP concentration (μg/m3)
300
250
200
150
100
50
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29
Date

## Appendix G: Summary of exceedance

| Parameter | Location | Monitoring Period | No. of Exceedance(s) | |
|---|---|---|---|---|
| | | | Action Level | Limit Level |
| Air (1-hour TSP) | A1 | 01/4/2008 – 30/4/2008 | 0 | 0 |
| | A2a | 01/4/2008 – 30/4/2008 | 0 | 0 |
| | A3 | 01/4/2008 – 30/4/2008 | 0 | 0 |
| | A4 | 01/4/2008 – 30/4/2008 | 0 | 0 |
| Air (24-hour TSP) | A1 | 01/4/2008 – 30/4/2008 | 0 | 0 |
| | A2a | 01/4/2008 – 30/4/2008 | 0 | 0 |
| | A3 | 01/4/2008 – 7/4/2008 | 0 | 0 |
| | A4 | 01/4/2008 – 30/4/2008 | 0 | 0 |
| Noise | CN1a | 01/4/2008 – 30/4/2008 | 0 | 1 |
| | CN2a | 01/4/2008 – 30/4/2008 | 0 | 3 |
| Ground-Borne Noise | HKSM | -- | 0 | 0 |
| | HKCC | -- | 0 | 0 |

## Appendix H: Complaint Log Book

**Development at Former Marine Police Headquarters KIL 11161 (EP-184/2004) Environmental Monitoring and Audit**

## LOG-BOOK

Log No.: 2008-001

| | |
|---|---|
| Date of incident or non-compliance: | 1/4/2008 |
| Date / time when the incident / non-compliance was first identified / reported to ET Leader: | 1/4/2008 – 4:00pm |
| Date / time reported to IEC by ET Leader: | 1/4/2008 – 6:00pm by ET Leader |

| Item | Details of incident / non-compliance | Investigation / action taken |
|---|---|---|
| 1. | EPD received a public complaint against air nuisance arisen from the construction work being carried out at Canton Road | Site inspection showed that the potential annoying air emission source is the ground breaking works in sub-surface holes close to the traffic light at the junction of Canton Road and Salisbury Road. The works is for future utility installations.<br><br>The Contractor has increased the dust suppression water sprays onto the breaking works and placed tarpaulin screening. Observation on 7 April 2008 showed that the present situation was acceptable.<br><br>The complaint is thus considered closed. |

Name of ET Leader: Ir Dr Gabriel C K Lam

Signature:

IEC Verification:

Date: 8 April 2008

**0Development at Former Marine Police Headquarters KIL 11161 (EP-184/2004) Environmental Monitoring and Audit**

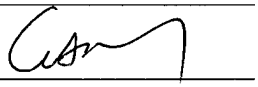
## LOG-BOOK

Log No.: 2008-002

| | |
|---|---|
| Date of incident or non-compliance: | 3/4/2008 |
| Date / time when the incident / non-compliance was first identified / reported to ET Leader: | 3/4/2008 – 2:30pm |
| Date / time reported to IEC by ET Leader: | 3/4/2008 – 3:30pm by ET Leader |

| Item | Details of incident / non-compliance | Investigation / action taken |
|---|---|---|
| 1. | EPD observed that the water treatment system was idle while there was a plastic pipe installed from the above site to a roadside gully at Canton Road without connecting to the on-site treatment facilities. | Investigation showed that the plastic pipe was likely installed by utilities workers who were unaware of the discharge requirement. The pipe has been dismantled and the gully had been covered with wooden board to avoid any unauthorized discharge to the gully.<br><br>Water treatment system has been moving around to give space for site operation. The system was brought to non-operation on 31 March 2008 and has now returned to service.<br><br>Site visit made on 16 April 2008 showed the water treatment facility was in operation satisfactorily.<br><br>Contractor is reminded to enhance communications to and closely monitoring of all works personnel against illegal connections. The complaint is considered closed. |

Name of ET Leader: Ir Dr Gabriel C K Lam

Signature: 

IEC Verification: _____

Date: 16 April 2008

## Appendix I: Calibration certificates of the sound level meter and calibrator

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C073059*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Sound Level Calibrator*

*Manufacturer : Rion*

*Model No. : NC-73*

*Serial No. : 10786708*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C073059.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 25 June 2007*

*Certified by :* K C Lee



Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong.
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

*Certificate No. : C072764*

# *Certificate of Calibration*

*This is to certify that the equipment*

*Description : Sound Level Meter*

*Manufacturer : Rion*

*Model No. : NL-31*

*Serial No. : 00320533*

*has been calibrated for the specific items and ranges.*
*The results are shown in the Calibration Report No. C072764.*

*The equipment is supplied by*

*Co. Name : Envirotech Services Co.*

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong*

*Date of Issue : 7 June 2007*

*Certified by :* K. C. Lee



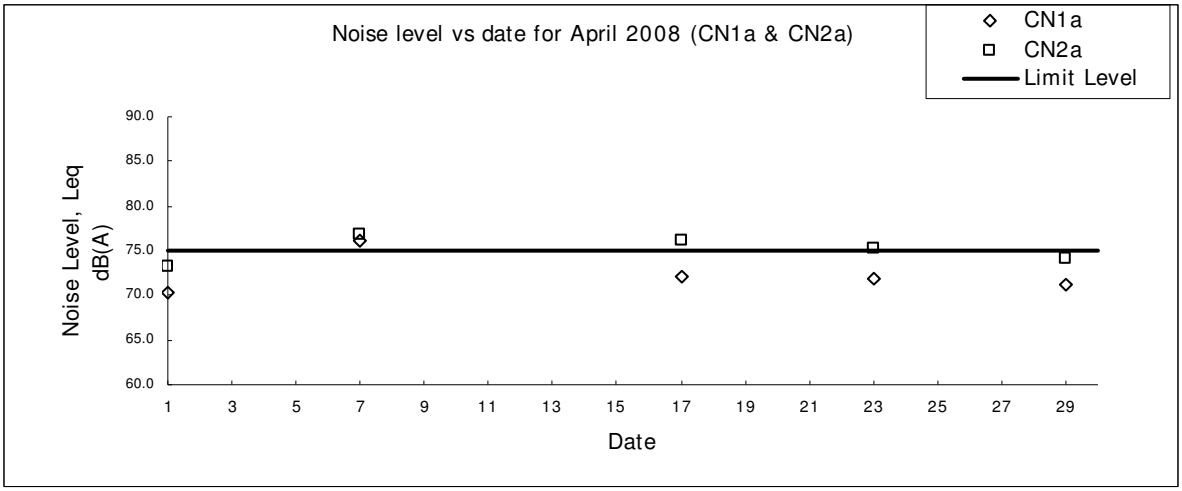
Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

## Appendix J: Detailed impact noise monitoring data for CN1a & CN2a

| Date | Time | Weather | CN1a (Po Yip) | | |
|---|---|---|---|---|---|
| | | | Noise Level, dB(A) | | |
| | | | $L_{eq}$ | $L_{90}$ | $L_{10}$ |
| 01-Apr-08 | 10:08 | Cloudy | 70.3 | 68.2 | 72.1 |
| 07-Apr-08 | 11:10 | Sunny | 76.2 | 74.0 | 78.6 |
| 17-Apr-08 | 10:08 | Cloudy | 72.2 | 70.5 | 74.0 |
| 23-Apr-08 | 10:08 | Cloudy | 71.9 | 69.2 | 73.0 |
| 29-Apr-08 | 10:05 | Cloudy | 71.2 | 68.2 | 73.0 |

| Date | Time | Weather | CN2a (YMCA) | | |
|---|---|---|---|---|---|
| | | | Noise Level, dB(A) | | |
| | | | $L_{eq}$ | $L_{90}$ | $L_{10}$ |
| 01-Apr-08 | 11:00 | Cloudy | 73.2 | 71.2 | 75.6 |
| 07-Apr-08 | 10:20 | Sunny | 76.9 | 72.4 | 79.2 |
| 17-Apr-08 | 11:10 | Cloudy | 76.2 | 73.9 | 78.0 |
| 23-Apr-08 | 11:15 | Cloudy | 75.2 | 73.6 | 77.4 |
| 29-Apr-08 | 11:05 | Cloudy | 74.2 | 72.0 | 76.5 |

## Appendix K: Graphical presentations of the noise impact monitoring results


Noise level vs date for April 2008 (CN1a & CN2a)
CN1a
CN2a
Limit Level
Noise Level, Leq dB(A)
90.0
85.0
80.0
75.0
70.0
65.0
60.0
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
Date

## Appendix L: Photographic record of retained trees

| Tree # | Status of Trees | | Condition of Trees during the monitoring period (April 2008) (Condition 1, 2 or 3) | Required Action | Remarks |
|---|---|---|---|---|---|
| | To be retained | To be transplanted | | | |
| T1 | ✓ | | 1 | No | --- |
| T3 | ✓ | | 1 | No | --- |
| T6 | ✓ | | 1 | No | --- |
| T8 | ✓ | | 1 | No | --- |
| T9 | | ✓ | 1 | No | --- |
| T10 | ✓ | | 2 | Yes | Tree canopy recovered after the insecticide treatment carried out on 10 Feb 2007. Close monitoring |
| T14 | | ✓ | 1 | No | --- |
| T17(R) | | ✓ | 1 | No | Replaced T17 |
| T32 | | ✓ | 1 | No | --- |
| T34 | | ✓ | 1 | No | --- |
| T35 | | ✓ | 1 | No | --- |
| T54 | ✓ | | 2 | Yes | More new leaves grown observed and recovered 80% of canopy during tree inspection on 27 March 2008. Close monitoring |
| T55 | | ✓ | 1 | No | --- |
| T65 | ✓ | | 1 | No | --- |
| T66 | ✓ | | 1 | Yes | Tree treated with insecticide similar to tree T10. Works near T66 and T67 closely monitored to prevent damage to trees |
| T67 | ✓ | | 1 | Yes | |
| T73 | | ✓ | 3 | Yes | To be replaced |
| T75 | | ✓ | 1 | No | --- |
| T79 | | ✓ | 1 | No | --- |
| T80 | | ✓ | 1 | No | --- |
| T96 | ✓ | | 1 | Yes | Close Monitoring |
| T98(R) | | ✓ | 1 | No | Replaced T98 |
| T99 | | ✓ | 1 | No | --- |
| T100(R) | | ✓ | 1 | No | Replaced T100 |
| T102 | | ✓ | 1 | No | --- |
| T104 | | ✓ | 1 | No | --- |
| T107 | | ✓ | 1 | No | --- |
| T111 | | ✓ | 1 | No | --- |
| T120 | ✓ | | 2 | Yes | Tree canopy fully recovered due to seasonal change observed during tree inspection on 29 April 2008. Close monitoring |
| T121 | ✓ | | 2 | Yes | |
| T122 | ✓ | | 2 | Yes | |
| T124 | ✓ | | 1 | No | --- |
| T125 | ✓ | | 1 | No | --- |
| T126 | ✓ | | 1 | No | --- |
| T127 | ✓ | | 1 | No | --- |
| T128 | ✓ | | 1 | No | --- |
| T129 | ✓ | | 1 | No | --- |
| T131 | ✓ | | 1 | No | --- |
| T132 | ✓ | | 1 | No | --- |
| T134 | ✓ | | 1 | No | --- |
| TA1 | ✓ | | 1 | No | --- |
| TA2 | ✓ | | 1 | No | --- |
| TA66 | | ✓ | 1 | No | --- |

Remark: Please note that although the assessment of the condition of tree T73 indicates a decline in their condition this decline is due to the fact that they were originally located on steeply sloping ground but were selected for transplantation due to the general lack of other suitable candidates. In addition when they were prepared for lifting it was found that their roots were growing in close proximity to a number of boulders (previously buried below the shotcrete on the slope) and the roots were severely constrained by the footings of the adjacent wall at the crest of the slope. Therefore the specialist landscape contractor had extreme difficulty in forming a viable rootball and so even with good horticultural treatment the trees experienced a significant decline in their health following relocation in the temporary holding nursery.

Note: 1 = No adverse comment 2 = Sign of deterioration 3 = Severe decline in condition compared to baseline assessment

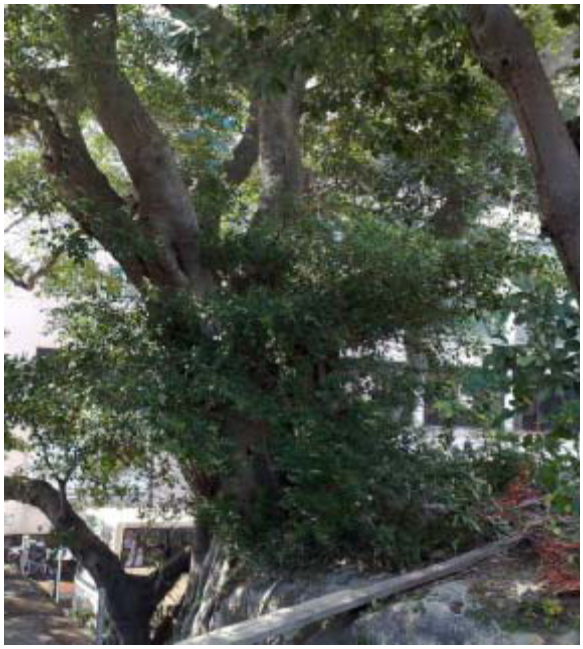
Trees identified for Retention

T54 (21 April 2008)

T10 (21 April 2008)

T65 (21 April 2008)

T96 (21 April 2008)



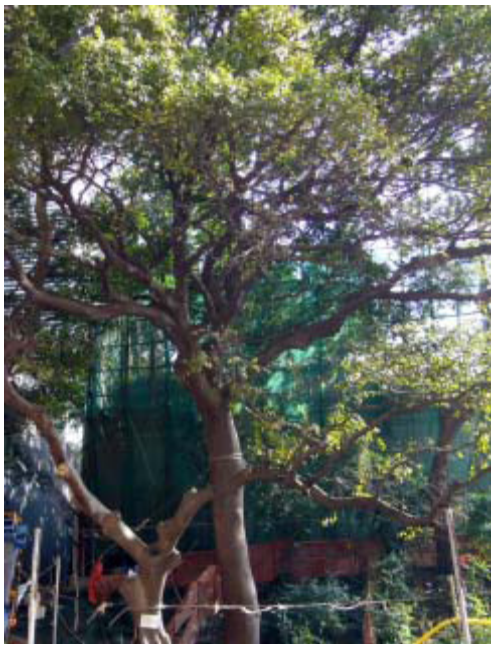
T66/67 (21 April 2008)

TA1 (21 April 2008)

T6 / T8 (21 April 2008)

T131 (21 April 2008)

T132 (21 April 2008)



T121 / T122 (21 April 2008)

T134 (21 April 2008)

T124 (21 April 2008)

T125 (21 April 2008)

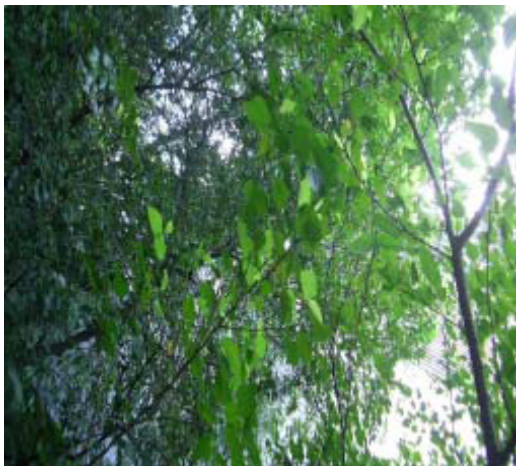
T126 (21 April 2008)

T127 (21 April 2008)

T128 (21 April 2008)

T129 (21 April 2008)

T120 (21 April 2008)



TA2 (21 April 2008)

T1 / T3 (21 April 2008)