**AUES PROJECT NO. TCS/00704/14**

# CONTRACT NO. MTRC6593-13C – WAN CHAI STATION LEE TUNG STREET SUBWAY

# 16TH ENVIRONMENTAL MONITORING AND AUDIT (EM&A) MONTHLY REPORT – DECEMBER 2015

PREPARED FOR
**KADEN CONSTRUCTION LIMITED**

**Quality Index**

| Date | Reference No. | Prepared By | Approved By |
|---|---|---|---|
| 13 January 2016 | TCS00704/14/600/R0079v2 |  |  |
| | | Nicola Hon<br>Environmental Consultant | T.W. Tam<br>Environmental Team Leader |

| Version | Date | Description |
|---|---|---|
| 1 | 7 January 2016 | First Submission |
| 2 | 13 January 2016 | Amended against the IEC's comment on 11 January 2016 |
| | | |

AECOM
8/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號新城
市中央廣場第 2 座 8 樓
www.aecom.com

+852 3922 9000 tel
+852 2317 7609 fax

Your Ref:
Our Ref: 40032976/449121

**By Email and Post**

MTR Corporation Limited
Fo Tan Railway House
No. 9, Lok King Street, Fo Tan
Shatin, N.T.,
Hong Kong

Attn.: Mr. Kenneth Chow / Environmental Engineer II

15 January 2016

Dear Sirs

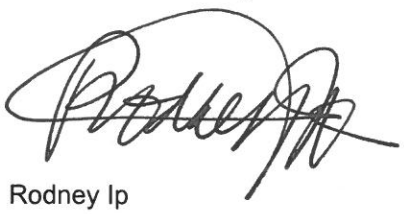
**Consultancy Agreement A130-13**
**Independent Environmental Checker for CRS and LTS**
**LTS - Verification for 16th Monthly Environmental Monitoring and Audit (EM&A) Report (December 2015) (Report No.: TCS00704/14/600/R0079v2)**

We refer to the 16th Monthly EM&A Report (December 2015) received under cover of the email from the Environmental Team, AUES, dated on 11 January 2016.

Further to our comments provided on 11 January 2016 and subsequent revision of the Report by AUES on 14 January 2016, we have no further comment and have verified the captioned report (Report No.: TCS00704/14/600/R0079v2).

Should you have any queries, please feel free to contact the undersigned at 3922 9529.

Yours faithfully
**AECOM Consulting Services Ltd**



Rodney Ip
Independent Environmental Checker

DCYO/wwsc

cc Kaden Consturction Limited (Attn.: Mr. Ronald Fung) via email
AUES (Attn.: Ms. Nicola Hon) via email

## EXECUTIVE SUMMARY

ES01 This is the **16th** monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 December 2015** (hereinafter 'the Reporting Period').

### SUMMARY OF ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES02 The monitoring and audit activities during the Reporting Period are summarized in below:-

| Environmental Aspect | Environmental Monitoring Parameters / Inspection | Reporting Period | |
|---|---|---|---|
| | | Number of Monitoring Location | Total Occasions |
| Air Quality | 24-hour TSP | **1** | **6** |
| Construction Noise | $L_{eq(30min)}$ Daytime | **2** | **10** |
| Site Inspection Audit | Weekly inspection with ET, the Contractor and RE | **--** | **5** |
| | Monthly joint inspection with ET, the Contractor, RE and IEC | **--** | **1** |

### BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES03 In the Reporting Period, no air quality and noise monitoring exceedances were registered. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

| Environmental Aspect | Monitoring Parameters | Action Level | Limit Level | Event & Action | | |
|---|---|---|---|---|---|---|
| | | | | NOE Issued | Investigation | Corrective Actions |
| Air Quality | 24-hour TSP | 0 | 0 | 0 | 0 | 0 |
| Construction Noise | $L_{eq(30min)}$ Daytime | 0 | 0 | 0 | 0 | 0 |

### ENVIRONMENTAL COMPLAINT

ES04 No public complaint was received in the Reporting Period.

### NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES05 No environmental summons or successful prosecutions were recorded in the Reporting Period.

### REPORTING CHANGE

ES06 No reporting changes were made in the Reporting Period.

### SITE INSPECTION

ES07 In the Reporting Period, weekly site inspection by the MTRC, ET and Contractor was carried out on **2, 9, 16, 23 and 31 December 2015** and the IEC was joined the site inspection on **9 December 2015**. No non-compliance was observed during the site inspection.

### FUTURE KEY ISSUES

ES08 Construction noise is the key environmental issue during construction work of the Project as there are residential buildings nearby. Noise mitigation measures should be fully implemented in accordance with the EM&A requirement.

ES09 Special attention should be paid on the potential construction dust impact as the construction site is located near the residential area. The Contractor should fully implement the construction dust mitigation measures properly.

ES010 The Contractor should prevent muddy water and other water pollutants via site surface water runoff get into public areas and implement water quality mitigation measures properly. Any discharge

water should be strictly complied with wastewater discharge license requirement.

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# 1 INTRODUCTION

## PROJECT BACKGROUND

1.01 **KADEN CONSTRUCTION LIMITED** (hereinafter 'KCL') has been awarded by the MTR Corporation Limited (MTRCL) the Contract No. *MTRC6593-13C – Wan Chai Station Lee Tung Street Subway* (hereinafter "the Project'), which is a Designated Project to be implemented under Environmental Permit EP-444/2012 (hereinafter referred as "the EP-444/2012" or "the EP").

1.02 The Project includes redevelopment of the Lee Tung Street area to improve pedestrian networking by enhancing the accessibility, connectivity and circulation of human traffic north-south from Queen's Road East area to Wan Chai MTR Station, and providing a safe and attractive means for pedestrian crossing of Johnston Road. The Project site layout plan is shown in ***Appendix A*** and works under the Project comprise of:

(i) Construction of a pedestrian subway link between Urban Renewal Authority's Redevelopment at Site H15 (the Development) and Wan Chai Station (WAC);

(ii) Construction of two ventilation shafts; and

(iii) Modification works of some of the station concourse.

1.03 The Project is expected to be undertaken for 36 months. In order to effectively implement the environmental protection measures as stipulated in the Particular Specification (PS), an Environmental Monitoring and Audit Plan (EMAP) which enclosed in the Project Profile (PP) was prepared to guide the setup of the environmental monitoring and audit (EM&A) programme of the Project.

1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by the KCL as the independent environmental team (ET) to implement the relevant EM&A programme for the Project.

1.05 The baseline monitoring program was carried out between 3 June 2014 and 19 June 2014 at the proposed monitoring locations by the ET according to the approved EMAP. The "Baseline Monitoring Report (R0010 Version 4)" has been verified by IEC submitted to the EPD on *15 July 2014* before commencement of major construction works. The construction of the Project was commenced on 28 August 2014 as notified by KCL. Accordingly, relevant EM&A programme was started on 28 August 2014.

1.06 This is **16th** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1 to 31 December 2015**.

## REPORT STRUCTURE

1.07 This Report is structured into the following sections:-

***Section 1*** *Introduction*
***Section 2*** *Project Organization*
***Section 3*** *Environmental Impact Monitoring Requirement*
***Section 4*** *Monitoring Results*
***Section 5*** *Waste Management*
***Section 6*** *Site Inspections*
***Section 7*** *Environmental Complaint and Non-Compliance*
***Section 8*** *Implementation Status of Mitigation Measures*
***Section 9*** *Conclusions and Recommendations*

# 2 PROJECT ORGANIZATION AND SUBMISSION

## PROJECT ORGANIZATION

2.01 The project organization is shown in ***Appendix B***. The responsibilities of respective parties are:

***MTR Corporation Limited (MTRCL)***

2.02 MTRCL is the Project Proponent and the Permit Holder of the EP of the development of the Project and will assume overall responsibility for the project. Also, an Independent Environmental Checker (IEC) should be employed by MTRCL to audit the results of the EM&A work conducted by Environmental Team.

***Environmental Protection Department (EPD)***

2.03 EPD is the statutory enforcement body for environmental protection matters in Hong Kong.

***Resident Engineer (RE)***

2.04 The RE is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:

- Monitor the Contractor's compliance with Contract Specifications, including the effective implementation and operation of the environmental mitigation measures;
- Inform the Contractor when action is required to reduce impacts in accordance with the Event and Action Plans;
- Participate in site inspections undertaken by the ET; and
- Co-operate with the ET in providing all the necessary information and assistance for completion of the complaint investigation works.

***Independent Environmental Checker (IEC)***

2.05 The IEC should advise the ET and RE on environmental issues related to the project. The IEC should audit from an independent viewpoint on the environmental performance during the construction of the project. The IEC should be a person who has relevant professional qualifications in environmental control and at least 7 years' experience in EM&A and environmental management. The duties and responsibilities of the IEC are:

- Review and audit in an independent, objective and professional manner in all aspects of the EM&A programme;
- Validate and confirm the accuracy of monitoring results, appropriateness of monitoring equipment, monitoring locations with reference to the locations of the nearby sensitive receivers, and monitoring procedures;
- Carry out random sample check and audit on monitoring data and sampling procedures, etc;
- Conduct random site inspection;
- Review the effectiveness of environmental mitigation measures and project environmental performance;
- On an as-need basis, verify and certify the environmental acceptability of the construction methodology (both temporary and permanent works), relevant design plans and submissions under the environmental permit. Where necessary, the IEC should agree in consultation with the ET and the Contractor least impact alternative;
- Check complaint cases and the effectiveness of corrective measures;
- Verify EM&A report certified by the ET Leader; and
- Feedback audit results to RE/ET according to the Event/Action Plan.

***Environmental Team (ET)***

2.06 The ET should conduct the EM&A programme and ensure the Contractor's compliance with the project's environmental performance requirements during construction. The ET should plan, organize and manage the implementation of the EM&A programme and ensure that the EM&A works are undertaken to the required standard.

2.07 The ET should be led and managed by the ET Leader. The ET Leader should have relevant

professional qualifications in environmental control and possess at least 7 years' experience in EM&A. The ET Leader should be responsible for the implementation of the EM&A programmes in accordance with the EM&A requirements. The duties and responsibilities of the ET include:

- Sampling, analysis and statistical evaluation of monitoring parameters;
- Environmental site surveillance;
- Inspection and audit of compliance with environmental protection, and pollution prevention and control regulations;
- Assess the effectiveness of the environmental mitigation measures implemented;
- Monitor compliance with the environmental protection clauses/specifications in the Contract;
- Review construction programme and comment as necessary;
- Review work methodologies which may affect the extent of environmental impact during the construction phase and comment as necessary;
- Complaint investigation, evaluation and identification of corrective measures;
- Liaison with the IEC on all environmental performance matters, and timely submission of all relevant EM&A proforma for IEC's approval; and
- Advice to Contractor on environmental improvement, awareness and enhancement matters etc.

***The Contractor***

2.08 The Contractor should report to the RE. The duties and responsibilities of the Contractor are:

- Comply with the relevant contract conditions and specifications on environmental protection
- Participate in the site inspections undertaken by the ET;
- Provide assistance to ET to carry out monitoring;
- Provide requested information to the ET in the event of any exceedance in the environmental criteria (Action/Limit levels);
- Submit proposals on mitigation measures in case of exceedances of Action and Limit levels in accordance with the Event / Action Plans; and
- Cooperate with the ET in providing all the necessary information and assistance for completion of the complaint investigation works. If mitigation measures are required following the investigation, the Contractor should promptly carry out these measures.

**SUMMARY OF ENVIRONMENTAL SUBMISSIONS**

2.09 In accordance with the EP stipulation, the required documents and submission status to EPD are listed in Table 2-1.

**Table 2-1 Submission/Set-up Status of the EP Requirements**

| EP Condition | Submission | Status |
|---|---|---|
| 2.3 | Management Organization of Main Construction Companies | Submitted |
| 2.7 | Landscape Plan | Submitted |
| 3.3 | Baseline Monitoring Report (*TCS00704/14/600/R0010v4*) | Submitted |
| 4.2 | Internet website | live |

2.10 Summary of environmental permits, licenses, and relevant notifications on environmental protection for the Project are presented in ***Table 2-2***.

**Table 2-2 Status of Environmental Licenses and Permits of the Project**

| Item | Description | License/Permit Status |
|---|---|---|
| 1 | Air Pollution Control (Construction Dust) Regulation | Notified EPD. |
| 2 | Chemical Waste Producer Registration - Waste Producers Number | WPN:5213-131-K3099-01<br>Approved on 14/05/2014 |
| 3 | Water Pollution Control Ordinance - Discharge License | License no.: WT00019539-2014<br>Approved on 16/07/2014<br>Valid to: 31/07/2019 |
| 4 | Waste Disposal Regulation - Billing Account for Disposal of Construction Waste | Account no.: 7019837<br>Approved on 30/04/2014 |

| Item | Description | License/Permit Status |
|---|---|---|
| 5 | Construction Noise Permit under Noise Control Ordinance | GW-RS0600-15 obtained on 4 June 2015<br>Valid 23 June 2015 to 12 December 2015 |
| | | GW-RS0923-15 obtained on 11 Sep 2015<br>Valid from 11 Sep 2015 to 10 March 2016 |
| | | GW-RS0970-15 obtained on 14 Sep 2015<br>Valid from 14 Sep 2015 to 12 March 2016 |

**CONSTRUCTION PROGRESS**

2.11 The construction activities conducted in the Reporting Period are listed in below. Moreover, the master construction program is shown in ***Appendix B***.

- RC structures
- Sheet piling
- Pre-drilling for mini-piles
- Excavation
- Cable containment works
- Cable floor trunking works

# 3 ENVIRONMENTAL IMPACT MONITORING REQUIREMENT

3.01 The ET will implement the EM&A programme in accordance with the requirements in EMAP. Details of the EM&A programme are presented in the following sub-sections.

## MONITORING PARAMETERS

3.02 The EM&A impact monitoring program covers the following environmental aspects:

- Air quality; and
- Construction noise

3.03 A summary of the monitoring parameters is presented in ***Table 3-1***:

**Table 3-1 Summary of the monitoring parameters of EM&A Requirements**

| Environmental Issue | Parameters |
|---|---|
| Air Quality | • 24-hour Total Suspended Particulate (hereinafter '24-hour TSP')<br>• 1-hour TSP monitoring (*) |
| Construction Noise | • A-weighted equivalent continuous sound pressure level (30min) (hereinafter '$L_{eq(30min)}$' during the normal working hours |

**Remarks:**
(*) *In case 24-hour TSP exceed the air quality criteria to be carried out*

## MONITORING LOCATIONS

3.04 According to Sections 2.3 and 3.4 of the EMAP which enclosed in the Project Profile (Register No. PP-472/2012), construction noise and air quality monitoring locations are required to be set up at Hennessy Building and Chiu Hin Mansion. In early May 2014, site visit was conducted to select suitable locations to carry out relevant noise and air monitoring for the EM&A Programme. It was noted that both Hennessy Building and Chiu Hin Mansion are residential buildings and only the 1/F to 2/F of the buildings could be accessed which are commercial premises. It is not possible to set up the monitoring station at upper floors inside the residential apartment which will cause nuisance to the residents. Finally, two locations at lower floor were selected which access were successfully granted by the premises occupiers. The monitoring stations proposed for the Project are summarized in ***Table 3-2*** and illustrated in ***Appendix C***.

**Table 3-2 Air and Noise Monitoring Locations**

| Aspect | Monitoring Location | Location ID | Address | Description |
|---|---|---|---|---|
| Air Quality | Chiu Hin Mansion | A1 | balcony at 1/F of Chiu Hin Mansion | ASR close to the Project site |
| Construction Noise | Hennessey Building | N1 | 2/F floor of Hennessey Building | NSR facing to the Project site |
| | Chiu Hin Mansion | N2 | balcony at 1/F of Chiu Hin Mansion | NSR facing to the Project site |

## MONITORING FREQUENCY AND PERIOD

3.05 The requirements of impact monitoring as stipulated in the EMAP are presented in following.

***Air Quality***

3.06 Frequency of impact air quality monitoring:

- 24-hour TSP Once every 6 days during course of works.

3.07 In case of non-compliance with the air quality criteria, a more frequent monitoring exercise adopting 1-hour TSP monitoring undertaken when the highest dust impact occurs, as specified in the Event and Action Plan, should be conducted within 24 hours after the result is obtained. This additional monitoring should be continued until excessive dust emission or the deterioration in air quality is rectified.

***Construction Noise***

3.08 One set of $L_{eq(30min)}$ as 6 consecutive $L_{eq(5min)}$ between 0700-1900 hours on normal weekdays and once every week during course of works. If construction work necessary to carry out at other time periods, i.e. restricted time period (19:00 to 07:00 the next morning and whole day on public holidays) (hereinafter referred as "the restricted hours"), 3 consecutive $L_{eq(5min)}$ measurement will be depended on CNP requirements to undertake. Supplementary information for data auditing, statistical results such as $L_{10}$ and $L_{90}$ shall also be obtained for reference.

**MONITORING EQUIPMENT**

***Air Quality Monitoring***

3.09 The 24-hour TSP shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B (USEPA)*. A direct reading dust meter is used to measure 1-hour TSP air quality, in case of non-compliance of air quality criteria occurred in 24-hour TSP measurement.

3.10 The filter paper sample collected in 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory. All equipments to be used for air quality monitoring are listed in ***Table 3-3***.

**Table 3-3 Air Quality Monitoring Equipment**

| Equipment | Model |
|---|---|
| ***24-hour TSP*** | |
| High Volume Air Sampler | TISCH High Volume Air Sampler, HVS Model TE-5170 |
| Calibration Kit | TISCH Model TE-5025A |
| ***1- hour TSP*** | |
| Portable Dust Meter | TSI Model 8520 DustTrak Aerosol Monitor / Aerocet 531 Handheld Particle Mass Profiler & Counter / Sibata LD-3A Laser Dust Monitor |

3.11 According to the EMAP, wind data monitoring equipment shall be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:

1) The wind sensors should be installed 10 m above ground so that they are clear of obstructions or turbulence caused by buildings.
2) The wind data should be captured by a data logger. The data shall be downloaded for analysis at least once a month.
3) The wind data monitoring equipment should be re-calibrated at least once every six months.
4) Wind direction should be divided into 16 sectors of 22.5 degrees each.

3.12 Although ET was successful granted HVS installation premises, the owners rejected to install wind data monitoring equipment.

3.13 In this situation, the ET proposed to adopt the meteorological information from King's Park Weather Station from the Hong Kong Observatory as the representative wind data. King's Park Station provided all useful from information such as humidity, rainfall, and air pressure and temperature etc.

3.14 Although there are other closer weather stations, King's Park Station was selected as it is the nearest weather station that measures all the relevant parameters mentioned above. Moreover, the ET has compared the data among the stations, and concluded that there is minimal difference between meteorological data collected at the King's Park station and other stations.

***Construction Noise Monitoring***

3.15 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind

speed shall be checked with a portable wind speed meter capable of measuring the wind speed in $ms^{-1}$. Furthermore, an acoustic calibrator and sound level meter shall be calibrated yearly.

3.16 Noise monitoring equipment to be used for monitoring is listed in ***Table 3-4***.

**Table 3-4 Construction Noise Monitoring Equipment**

| Equipment | Model |
|---|---|
| Integrating Sound Level Meter | B&K Type 2238 |
| Calibrator | Rion NC-73 / B&K Type 4231/ Cesva CB-5 |
| Portable Wind Speed Indicator | Testo Anemometer |

**MONITORING METHODOLOGY**

**24-hour TSP**

3.17 The equipment used for 24-hour TSP measurement is a Tisch Environmental, Inc. Model TE-5170 TSP high volume air sampling system, which complied with USEPA Code of Federal Regulation, Appendix B to Part 50. The High Volume Air Sampler (HVS) consists of the following:

a. An anodized aluminum shelter;
b. A 8"x10" stainless steel filter holder;
c. A blower motor assembly;
d. A continuous flow/pressure recorder;
e. A motor speed-voltage control/elapsed time indicator;
f. A 7-day mechanical timer, and
g. A power supply of 220v/50 hz

3.18 The HVS is calibrated in accordance with the manufacturer's instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5028A). The 24-hour TSP monitoring using the HVS is also processed in accordance with the manufacturer's Operations Manual. The valid calibration certificate of the calibration kit with the certificate of HVS calibrated is shown in ***Appendix D***.

3.19 24-hour TSP is collected on filters of the HVS and quantified by a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (ALS), upon receipt of the samples. The ET will keep all the sampled 24-hour TSP filters in normal air conditioned room conditions, i.e. 70% HR (Relative Humidity) and 25°C, for six months prior to disposal. HOKLAS-accreditation certificate of ALS Technichem (HK) Pty Ltd (ALS) is provided in ***Appendix E***.

**Noise**

3.20 Sound level meter complied with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications, as recommended in Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO). The valid of calibration certificates including sound level meter and an acoustic were shown in ***Appendix D***.

3.21 The noise measurement is performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level ($L_{eq}$). $L_{eq(30min)}$ in six consecutive $L_{eq(5min)}$ measurements were used as the monitoring parameter.

3.22 During monitoring, the sound level meter mounted at the monitoring locations and oriented such that the microphone pointed to the site with the microphone facing perpendicular to the line of sight. The windshield was fitted for the measurement. For the monitoring, N1 and N2 are conducted 1 m from the exterior of the building façade.

3.23 Prior construction noise measurement, the accuracy of the sound level meter checked using an acoustic calibrator generating a known sound pressure level at a known frequency. The calibration level from before and after the noise measurement agrees to within 1.0dB.

**DERIVATION OF ACTION/LIMIT (A/L) LEVELS**

3.24 The baseline results form the basis for determining the environmental acceptance criteria for the impact monitoring. According to EMAP, the air quality and construction noise criteria were set up, namely Action and Limit levels are listed in ***Tables 3-5*** and ***3-6***.

**Table 3-5 Action and Limit Levels for Air Quality Monitoring**

| Monitoring Station | Action Level (μg /m$^3$) | | Limit Level (μg/m$^3$) | |
|---|---|---|---|---|
| | 1-hour TSP | 24-hour TSP | 1-hour TSP | 24-hour TSP |
| A1 | 290 | 162 | 500 | 260 |

**Table 3-6 Action and Limit Levels for Construction Noise**

| Monitoring Station | 0700-1900 hours on normal weekdays | |
|---|---|---|
| | Action Level | Limit Level |
| N1 and N2 | When one documented complaint is received | 75 dB(A) |

*Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the NCA have to be followed.*

3.25 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan which presented in ***Appendix F.***

**DATA MANAGEMENT AND DATA QA/QC CONTROL**

3.26 The all monitoring data were handled by the ET's in-house data recording and management system.

3.27 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into a computerized database properly maintained by the ET. The laboratory results were input directly into the computerized database and checked by personnel other than those who input the data.

3.28 For monitoring parameters that require laboratory analysis, the local laboratory shall follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory tests.

# 4 MONITORING RESULTS

4.01 The impact air quality and construction noise monitoring schedule is presented in ***Appendix G*** and the monitoring results are summarized in the following sub-sections.

## 24-HOUR TSP AIR QUALITY MONITORING RESULTS

4.02 In the Reporting Period, **6** occasions of 24-hours TSP monitoring were carried out at the proposed location A1 and the monitoring results are summarized in ***Table 4-1***. The detailed 24-hour TSP monitoring data are presented in ***Appendix H*** and the relevant graphical plots are shown in ***Appendix I***.

**Table 4-1 Summary of 24-hour TSP Monitoring Results – A1**

| Date | 24-hour TSP (μg/m$^3$) | Action Level | Limit Level |
|---|---|---|---|
| 2-Dec-15 | 60 | 162 | 260 |
| 8-Dec-15 | 50 | | |
| 14-Dec-15 | 103 # | | |
| 19-Dec-15 | 18 | | |
| 24-Dec-15 | 89 | | |
| 30-Dec-15 | 83 | | |
| Average (Range) | **67 (18-103)** | | |

*Remark*
*# While the calibration was carried out on 15 December 2015, there was no significant change of the HVS as checked on that day, hence the monitoring on 14 December 2015 should not have suffered any equipment accuracy.*

4.03 As shown in ***Table 4-1***, 24-hour TSP monitoring results are fluctuated below Action/ Limit Levels.

## NOISE MONITORING RESULTS

4.04 In the Reporting Period, **10** occasions noise measurement were conducted at N1 and N2. The sound level meter was set in 1m from the exterior of the building façade at N1 and N2. Therefore, no façade correction (+3dB(A)) is added according to acoustical principles and EPD guidelines. The noise measurement results at N1 and N2 are listed in ***Tables 4-2*** and ***4-3.*** The relevant graphical plots are shown in ***Appendix I***.

**Table 4-2 Noise Monitoring Results of N1 (2/F floor of Hennessey Building), dB(A)**

| Date | Start Time | 1st Leq5 | 2nd Leq5 | 3rd Leq5 | 4th Leq5 | 5th Leq5 | 6th Leq5 | $L_{eq30min}$ |
|---|---|---|---|---|---|---|---|---|
| 1-Dec-15 | 10:55 | 74.2 | 73.8 | 75.4 | 74.5 | 74.1 | 75.2 | 75 |
| 8-Dec-15 | 11:28 | 73.7 | 74.4 | 73.6 | 75.1 | 74.7 | 75.0 | 74 |
| 15-Dec-15 | 13:07 | 73.3 | 75.0 | 74.4 | 74.6 | 75.7 | 74.3 | 75 |
| 22-Dec-15 | 11:18 | 75.5 | 74.7 | 75.7 | 73.5 | 73.8 | 73.9 | 75 |
| 29-Dec-15 | 11:09 | 74.3 | 73.7 | 75.4 | 74.5 | 75.6 | 74.1 | 75 |
| **Limit Level of Construction Noise** | | **75 dB(A)** | | | | | | |

**Table 4-3 Noise Monitoring Results of N2 (balcony at 1/F of Chiu Hin Mansion), dB(A)**

| Date | Start Time | 1st Leq5 | 2nd Leq5 | 3rd Leq5 | 4th Leq5 | 5th Leq5 | 6th Leq5 | $L_{eq30min}$ |
|---|---|---|---|---|---|---|---|---|
| 1-Dec-15 | 10:10 | 70.4 | 71.2 | 70.8 | 70.1 | 69.4 | 69.7 | 70 |
| 8-Dec-15 | 10:49 | 71.2 | 70.5 | 72.7 | 70.1 | 71.3 | 72.4 | 71 |
| 15-Dec-15 | 13:49 | 70.6 | 72.4 | 71.3 | 70.2 | 71.5 | 72.0 | 71 |
| 22-Dec-15 | 10:42 | 74.9 | 70.4 | 73.7 | 72.5 | 70.2 | 71.5 | 73 |
| 29-Dec-15 | 10:31 | 71.5 | 72.6 | 70.8 | 73.1 | 71.4 | 72.4 | 72 |
| **Limit Level of Construction Noise** | | **75 dB(A)** | | | | | | |

4.05 Referred to above tables, no noise measurement exceedance was recorded at both N1 and N2. Furthermore, there is no noise complaint (Action Level exceedance) received by the MTRCL and Contractor or EPD in the Reporting Period. The meteorological data during the impact monitoring days are shown in ***Appendix J***.

# 5 WASTE MANAGEMENT

## GENERAL WASTE MANAGEMENT

5.01 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

## RECORDS OF WASTE QUANTITIES

5.02 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil.

5.03 The quantities of waste for disposal in this Reporting Period are summarized in ***Tables 5-1*** and ***5-2*** and the Monthly Summary Waste Flow Table is shown in ***Appendix K***.

**Table 5-1 Summary of Quantities of Inert C&D Materials**

| Type of Waste | Quantity | Disposal Location |
|---|---|---|
| Total C&D Materials (Inert) ($m^3$) | 0.63413 | - |
| Reused in this Contract (Inert) ($m^3$) | 0 | - |
| Reused in other Projects (Inert) ($m^3$) | 0 | - |
| Disposal as Public Fill (Inert) ($m^3$) | 0.63413 | TKO 137 |

**Table 5-2 Summary of Quantities of Non-Inert C&D Wastes**

| Type of Waste | Quantity | Disposal Location |
|---|---|---|
| Recycled Metal ($m^3$) | 0 | - |
| Recycled Paper / Cardboard Packing ($m^3$) | 0 | - |
| Recycled Plastic ($m^3$) | 0 | - |
| Chemical Wastes ($m^3$/L) | 0 | - |
| General Refuses ($m^3$) | 0.0209 | SENT Landfill |

5.04 In the Reporting Period, effluent generated from the Project was discharged in accordance with the Wastewater Discharge License.

5.05 Moreover, it is reminded that C&D materials would be reused on-site as far as practicable.

# 6 SITE INSPECTION

6.01 According to the EMAP, the environmental site inspection shall be formulation by ET Leader. Weekly environmental site inspections should carry out to confirm the environmental performance.

## FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

6.02 During the Reporting Period, **five (5)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2, 9, 16, 23 and 31 December 2015** and the IEC was joined the site inspection on **9 December 2015**.

6.03 No non-compliance was noted. However, six (6) observations and one (1) reminder were recorded by the ET. The findings / deficiencies observed during the weekly site inspections are listed in ***Table 6-1***.

**Table 6-1 Site Observations**

| Date | Findings / Deficiencies | Follow-Up Status |
|---|---|---|
| 2 December 2015 | • Scattered C&D waste was observed, the Contractor should dispose the waste regularly.<br>• Cloudy discharge water was observed, the Contractor should enhance the treatment and ensure the effluent comply with the discharge license requirement. | • The C&D waste was cleared.<br>• It is checked that the discharge water in the wastewater treatment tank is visually acceptable. |
| 9 December 2015 | • The Contractor should provide full screen site hoarding for the works area | • Full screen site hoarding was provided for works area. |
| 16 December 2015 | • The Contractor should cover the backfilling loose soil when they are not in used. | • The backfilling work was completed and no stockpile storage on site was observed. |
| 23 December 2015 | • Cement mixing work was observed, the Contractor should provide 3 sides cover with top to reduce dust impact.<br>• Full screen site hoarding should be provided for the works area. | • 3-sides cover with top was provided to the cement mixing work however, the Contractor was reminded to fully enclose the mixing area in order to reduce dust impact.<br>• , To be followed |
| 31 December 2015 | • The Contractor was reminded to fully enclose the area for cement mixing in order to reduce dust impact. | • Not required for reminder. |

6.04 In the Reporting Period, the Contractor was reminded regular checking and maintenance wastewater treatment facilities ensure compliance with the currently Discharge License stipulation.

6.05 No site inspection was undertaken by external parties i.e. EPD in this Reporting Month.

# 7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

## ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

7.01 For the Project, no environmental complaint, summons and prosecution was received in the Reporting Period. The statistical summary table of environmental complaint is presented in ***Tables 7-1, 7-2*** and ***7-3***.

**Table 7-1 Statistical Summary of Environmental Complaints**

| Reporting Period | Environmental Complaint Statistics | | | | | |
|---|---|---|---|---|---|---|
| | Frequency | Cumulative | Complaint Nature | | | |
| | | | Air | Noise | Water | Others |
| 28 Aug 2014 – 30 Nov 2015 | 0 | 0 | NA | NA | NA | NA |
| 1– 31 Dec 2015 | 0 | 0 | NA | NA | NA | NA |

**Table 7-2 Statistical Summary of Environmental Summons**

| Reporting Period | Environmental Summons Statistics | | | | | |
|---|---|---|---|---|---|---|
| | Frequency | Cumulative | Complaint Nature | | | |
| | | | Air | Noise | Water | Others |
| 28 Aug 2014 – 30 Nov 2015 | 0 | 0 | NA | NA | NA | NA |
| 1– 31 Dec 2015 | 0 | 0 | NA | NA | NA | NA |

**Table 7-3 Statistical Summary of Environmental Prosecution**

| Reporting Period | Environmental Prosecution Statistics | | | | | |
|---|---|---|---|---|---|---|
| | Frequency | Cumulative | Complaint Nature | | | |
| | | | Air | Noise | Water | Others |
| 28 Aug 2014 – 30 Nov 2015 | 0 | 0 | NA | NA | NA | NA |
| 1– 31 Dec 2015 | 0 | 0 | NA | NA | NA | NA |

# 8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

## GENERAL REQUIREMENTS

8.01 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the EMAP covered the issues of dust, noise, water and waste and they are summarized presented in ***Appendix L.***

8.02 The Works under the Project shall be implementing the required environmental mitigation measures according to the EMAP as subject to the site condition. Environmental mitigation measures generally to be implemented by the Contractor is listed in ***Table 8-1***.

**Table 8-1 Environmental Mitigation Measures**

| Issues | Environmental Mitigation Measures |
|---|---|
| Air Quality | • Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;<br>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;<br>• Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet;<br>• Public areas around the site entrance/exit had been kept clean and free from dust; and<br>• Tarpaulin covering of any dusty materials on a vehicle leaving the site. |
| Noise | • Good site practices to limit noise emissions at the sources;<br>• Use of quiet plant and working methods;<br>• Use of site hoarding or other mass materials as noise barrier to screen the working site;<br>• Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs; and<br>• Limiting as use one construction plant within worksite, where practicable. |
| Water Quality | • Wastewater were appropriately treated by treatment facilities;<br>• Drainage channels were provided to convey run-off into the treatment facilities; and<br>• Drainage systems were regularly and adequately maintained. |
| Waste and Chemical Management | • Excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible;<br>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;<br>• The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designed public filling facility and/or landfill; and<br>• Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes. |
| Landscape and Visual | • Clear demarcation of works area to prevent damages to existing trees in close proximity;<br>• Protection of all trees planned to be retained onsite;<br>• Preserving all affected trees by transplanting where practical. Tree transplanting application and tree removal application shall be submitted for approval in accordance with ETWB TCW 3/2006; and<br>• Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colors. |
| General | • The site was generally kept tidy and clean. |

## TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

8.03 Construction activities as undertaken in the coming month for the Project lists below:

- Mini-piles
- Temporary traffic deck
- ELS works
- BS installation

**KEY ISSUES FOR THE COMING MONTH**

8.04 Key issues to be considered in the coming month of the Project include:

- Implementation of dust suppression measures at all times;
- Potential wastewater quality impact due to surface runoff;
- Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
- Disposal of empty engine oil containers within site area;
- Ensure dust suppression measures are implemented properly;
- Silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent and stockpiling or disposal of materials at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures

8.05 In addition, mosquito control measures should be continued to prevent mosquito breeding on site.

# 9 CONCLUSIONS AND RECOMMENDATIONS

## CONCLUSION

9.01 This is the **16th** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1** to **31 December 2015**.

9.02 In the Reporting Period, **6** occasions of 24-hours TSP monitoring were conducted at A1. The monitoring results are all below the Action/ Limit Level. No Notifications of Exceedances (NOEs) or the associated corrective actions were therefore issued.

9.03 In the Reporting Period, total of **10** occasions of noise measurement were conducted at N1 and N2 and no exceedance were recorded.

9.04 No environmental complaint, notification of summons or successful prosecution was received in the Reporting Period.

9.05 **Five (5)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2, 9, 16, 23 and 31 December 2015** and the IEC was joined the site inspection **9 December 2015**. No non-compliance was noted but six (6) observations and one (1) reminder were recorded by the ET.

9.06 In the Reporting Period, no site inspection was undertaken by external parties i.e. EPD.

## RECOMMENDATIONS

9.07 Construction noise is the key environmental issue during construction work of the Project as there are residential buildings nearby. Noise mitigation measures should be fully implemented in accordance with the EM&A requirement.

9.08 Also, special attention should be paid on the potential construction dust impact as the construction site is located near the residential area. The Contractor should fully implement the construction dust mitigation measures properly.

9.09 The Contractor should also prevent muddy water and other water pollutants via site surface water runoff get into public areas. Any discharge water should be strictly complied with wastewater discharge license requirement. As a reminder, water quality mitigation measures should be properly implemented in accordance with the EM&A requirement.

9.10 As a reminder, the Contractor should be regular checking and maintenance wastewater treatment facilities ensure compliance with the currently Discharge License stipulation. A warning sign should be provided all the retained trees as remind the workers prevent scratch the trees. In addition, mosquito control should be kept to prevent mosquito breeding on site.

# Appendix A

# Project Site Layout Plan

現有港鐵灣仔站
EXISTING WAC STATION

擬建利東街行人隧道
PROPOSED LEE TUNG STREET SUBWAY

市區重建局H15區A工地
URA H15 SITE A

修頓遊樂場
SOUTHORN PLAYGROUND

鐵路區
RAILWAY AREA

軒尼詩大樓
HENNESSY BUILDING

協生大廈
HIP SANG BUILDING

越興大廈
YUE HING BUILDING

華寧大廈
WARNER BUILDING

昭憲大廈
CHIU HIN MANSION

春暉大廈
CHUN FAI BUILDING

THOMSON ROAD
軒尼詩道
LOCKHART ROAD
駱克道
JAFFE ROAD
O'BRIEN ROAD
JOHNSTON ROAD
莊士敦道
LUARD ROAD
盧押道
STONE NULLAH LANE
石水渠街
CROSS STREET
交加街
TAI YUEN STREET
太原街
SPRING GARDEN LANE
春園街
AMOY STREET
廈門街
SWATOW STREET
汕頭街
LEE TUNG STREET
WAN CHAI
灣仔

0 5 10 15 20 25
METRES
1 : 1000

| REV | DESCRIPTION | BY | DATE | APPROVED |
|---|---|---|---|---|
| D | GENERAL REVISION | HO | 16MAY12 | AFK |
| C | GENERAL REVISION | HO | 12AUG11 | AFK |
| B | GENERAL REVISION | HO | 18JUL11 | AFK |
| A | PROJECT PROFILE | HO | 04MAY11 | AFK |

| | |
|---|---|
| DRAWN | HO |
| DESIGNED | BW |
| CHECKED | BL |
| APPROVED | AFK |
| DATE | 04MAY2011 |



MTR

WAC STATION LEE TUNG STREET SUBWAY

ORIGINATOR

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

CADD REF. NEX1050_2.7A_001D.dgn

TITLE

# CONSULTANCY AGREEMENT NO. NEX/1050
## DETAILED DESIGN FOR LEE TUNG STREET SUBWAY
SITE LOCATION PLAN
施工位置圖

SCALE 1:1000 (A3)

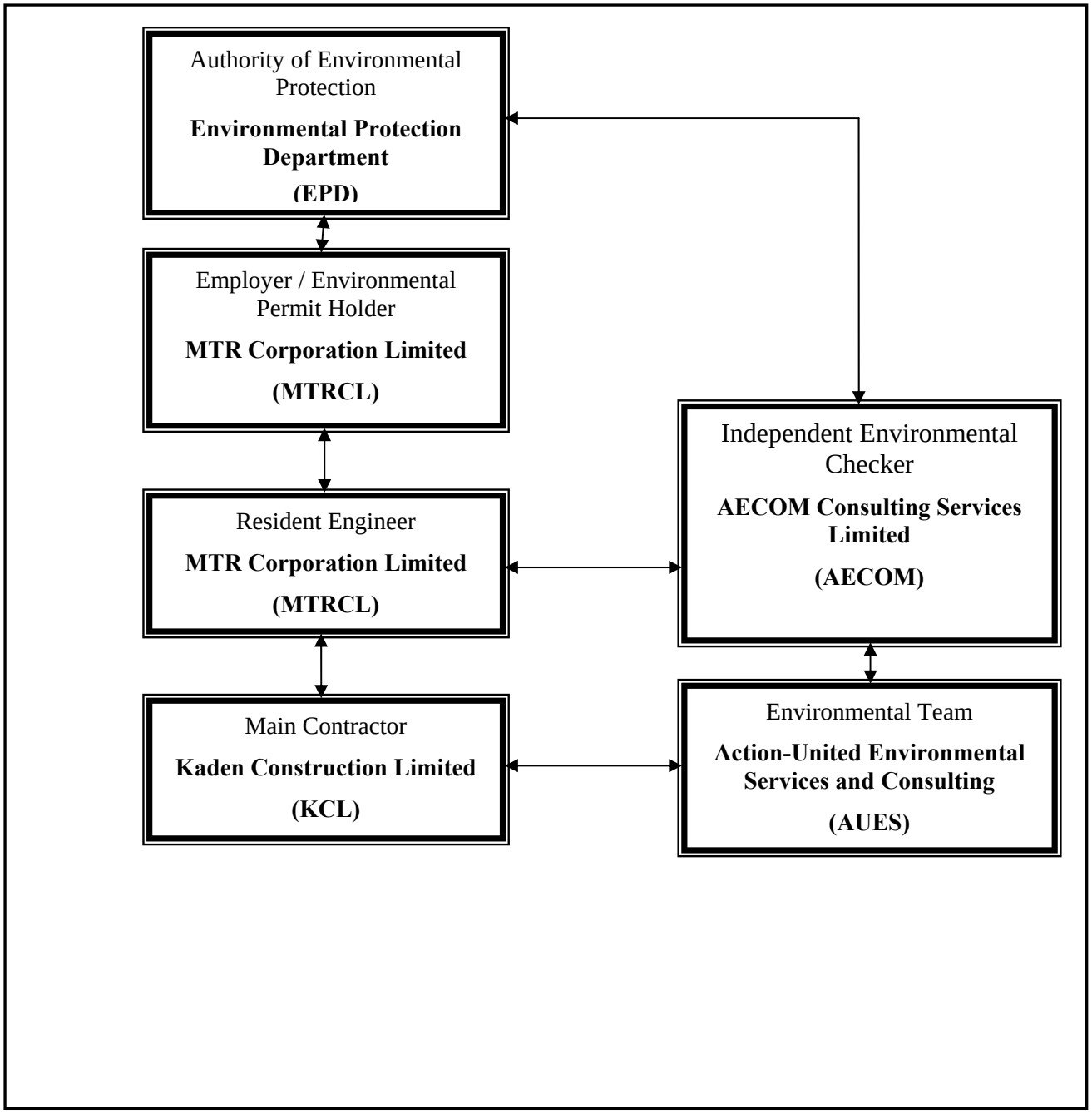
DRAWING NO. NEX1050/2.7A/001

REV. D

PLOT DRV: C:\Programdata\Bentley\MicroStation V8i(SELECTseries1\WorkSpace\System\prfcfg\MTR.PDF.BW.COL.3000Plot
MODELNAME: Default
FILENAME: J:\2824\35\REPORT\CIV\PP\20120506\NEX1050_2.7A_001.dgn
PRINTED BY: hc57494
DATE: 20/06/2012 16:36:06

# Appendix B

# Organization of the Project and Master Construction Programme


Authority of Environmental Protection
Environmental Protection Department
(EPD)
Employer / Environmental Permit Holder
MTR Corporation Limited
(MTRCL)
Resident Engineer
MTR Corporation Limited
(MTRCL)
Main Contractor
Kaden Construction Limited
(KCL)
Independent Environmental Checker
AECOM Consulting Services Limited
(AECOM)
Environmental Team
Action-United Environmental Services and Consulting
(AUES)

## Contact Details of Key Personnel for the Project

| Organization | Project Role | Name of Key Staff | Tel No. | Fax No. |
|---|---|---|---|---|
| MTRCL | Resident Engineer | Mr. Raymond Lee | 3547 0002 | 3547 0090 |
| AECOM | Independent Environmental Checker | Mr. Rodney Ip | 3922 9529 | 3922 9797 |
| KCL | Project Manager | Mr. Vincent, Kwan Chun Yin | 9833 1313 | 2770 4278 |
| KCL | Site Agent | Mr. Chan Kam Chuen | 6462 8910 | 2770 4278 |
| KCL | Environmental Officer | Ms. Ricci Poon Wai Tin | 9533 1115 | 2770 4278 |
| AUES | Environmental Team Leader | Mr. T. W. Tam | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Ms. Nicola Hon | 2959 6059 | 2959 6079 |
| AUES | Environmental Consultant | Mr. Ben Tam | 2959 6059 | 2959 6079 |

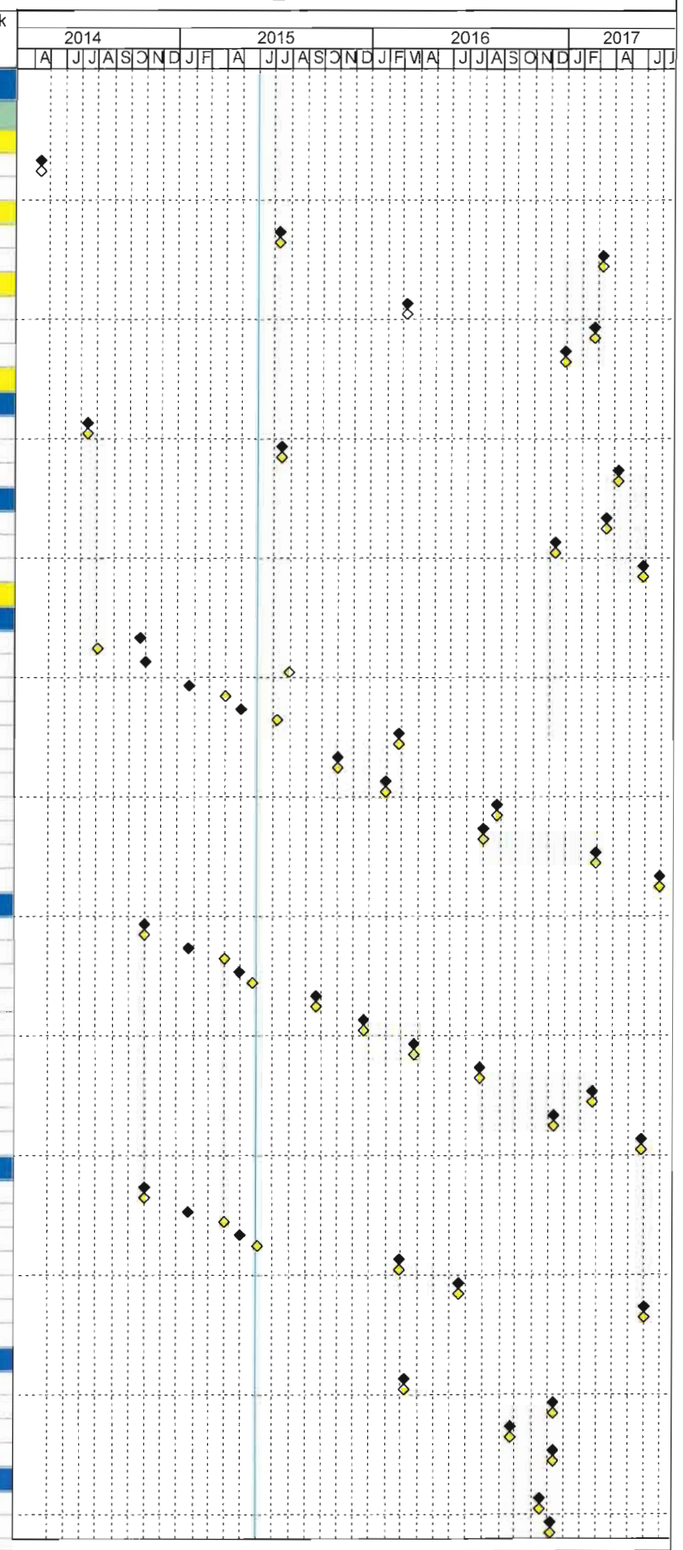
Legend:

*MTRCL (Employer) – MTR Corporation Limited*
*MTRCL (Resident Engineer) – MTR Corporation Limited*
*KCL (Main Contractor) – Kaden Construction Limited*
*AECOM (IEC) – AECOM Consulting Services Limited*
*AUES (ET) – Action-United Environmental Services & Consulting*

Appendix M.

*C6593-13C LTS PMP Rev.C _BL_Report (May'15)* | *09-Jun-15_14:52*

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| **C6593-13C LTS PMP Rev.C _BL_Report (May'15)** | | | | | | | |
| **Key Dates** | | | | | | | |
| **Commencement and Completion** | | | | | | | |
| KD.COMM | Commencement of the Works (14-Apr'14) | 0.0d | 14-Apr-14 | | 14-Apr-14 | | |
| KD.COMP | Completion of the Whole of the Works, No.Cal.Wk. 150 (26-Feb'17) | 0.0d | | 25-Feb-17 | | | |
| **Specified Parts of the Works** | | | | | | | |
| KD.2A | 2A - SBC Complete backfill, resurfacing, fencing, utilities, lighting and return to LCSD (28-Jun'15) | 0.0d | | 27-Jun-15 | | | |
| KD.2B | 2B - Complete all works at the 2 new Shop Kiosks and hand over to the Employer (1-May'16) | 0.0d | | 27-Apr-16 | | | |
| **Programme Data / Interface Key Dates** | | | | | | | |
| INF.AFC | Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Level (27-Apr'15) | 0.0d | 27-Apr-15 | | | | |
| INF.H15 | Interface Access for Contract H15, All Levels, No.Cal.Wk. 120 (31-Jul'16) | 0.0d | 31-Jul-16 | | | | |
| INF.SAMS | Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'16) | 0.0d | 10-Oct-16 | | | | |
| **Site Area Possession and Return Dates** | | | | | | | |
| **Site Area Possession Date** | | | | | | | |
| WAP.W1 | Works Area 6593.W1, Within 3 months from commencement of works (14-Jul'14) | 0.0d | 14-Jul-14 | | 14-Jul-14 | | |
| WAP.W2 | Works Area 6593.W2, Within 9 months from commencement of works (14-Jan'15) | 0.0d | 07-Jul-15 | | | | |
| WAP.W3 | Works Area 6593.W3, No later than 1 month after completion of resinstatement works at Works Area 6539.W1 | 0.0d | 10-Jan-17 | | | | |
| **Site Area Return Date** | | | | | | | |
| WAR.W1 | Works Area 6593.W1, Within 36 months from commencement of works (14-Apr'17) | 0.0d | | 16-Dec-16 | | | |
| WAR.W2 | Works Area 6593.W2, Within 36 months from commencement of works (14-Apr'17) | 0.0d | | 21-Oct-16 | | | |
| WAR.W3 | Works Area 6593.W3, Within 2 months after possession date of Works Area 6593.W3 | 0.0d | | 26-Feb-17 | | | |
| **Milestone Schedule** | | | | | | | |
| **Milestones A** | | | | | | | |
| MS.A01 | A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporay decking (3-Aug'14) | 0.0d | | 02-Aug-14 | | 21-Oct-14 | |
| MS.A02 | A2 Approval of Design of Mined Tunnel ESS; Hoarding phase/plan;TW under TramTrack; QP, SAP, PMP, H&SP, EMP (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| MS.A03 | A3 Satisfactory Implementation of Specified Plans (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| MS.A04 | A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15) | 0.0d | | 02-May-15 | | 02-May-15 | |
| MS.A05 | A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15) | 0.0d | | 01-Aug-15 | | | |
| MS.A06 | A6 Satisfactory Implementation of PMS (1-Nov'15) | 0.0d | | 31-Oct-15 | | | |
| MS.A07 | A7 Satisfactory Implementation of Specified Plans (31-Jan'16) | 0.0d | | 30-Jan-16 | | | |
| MS.A08 | A8 AIP for T&C of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16) | 0.0d | | 30-Apr-16 | | | |
| MS.A09 | A9 Satisfactory Implementation of Specified Plans (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| MS.A10 | A10 AIP of Draft O&M manual and Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct'16) | 0.0d | | 29-Oct-16 | | | |
| MS.A11 | A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17) | 0.0d | | 22-Feb-17 | | | |
| **Milestones B** | | | | | | | |
| MS.B01 | B1 Excavate to +2.5 of Southern Basketball Court & Children's Play Area - Cofferdam construction completed (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| MS.B02 | B2 SBC Excavation satisfactorily completed & Children's Play Area Excavation has reached -1.3mPD (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| MS.B03 | B3 SBC Roof slab RC, JnR NFP & EBC 67% cofferdam Tram Track support 10%, JnR WBC UU diversions completed (3-May'15) | 0.0d | | 02-May-15 | | 29-Apr-15 | |
| MS.B04 | B4 SBC return, NBC Site entry formed, CPA RC base slab, JnR NFP & EBC Cofferdam & traffic decks complete (2-Aug'15) | 0.0d | | 31-Jul-15 | | | |
| MS.B05 | B5 NBC cofferdam complete, CPA RC & vent shaft 1.2m above ground complete, Tram Tracks Excavation to +0.0 mPD (1-Nov'15) | 0.0d | | 31-Oct-15 | | | |
| MS.B06 | B6 NBC Excavation to formation complete, JnR All Carriageways & Footpaths & Tram Tracks Excavation complete (31-Jan'16) | 0.0d | | 30-Jan-16 | | | |
| MS.B07 | B7 NBC RC roof slab complete, JnR CW & FP & TT RC construction except temp opening, CPA RC complete (1-May'16) | 0.0d | | 30-Apr-16 | | | |
| MS.B08 | B8 ABWF Degree 1 achieved, NBC All reinstatement complete, Opening through H15 D-wall formed (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| MS.B09 | B9 ABWF Degree 3 achieved, All road reinstatement in Johnston Road & Hennessy Road complete (30-Oct'16) | 0.0d | | 27-Oct-16 | | | |
| MS.B10 | B10 All works in Cost Centre B satisfactorily completed (26-Feb'17) | 0.0d | | 25-Feb-17 | | | |
| **Milestones C** | | | | | | | |
| MS.C01 | C1 AIP BS detail design, suppliers & model types of major BS equipment & materials (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| MS.C02 | C2 AIP BS shop drawings (25-Jan'15) | 0.0d | | 23-Jan-15 | | 23-Jan-15 | |
| MS.C03 | C3 Order all BS equiptment and materials (3-May'15) | 0.0d | | 02-May-15 | | 02-May-15 | |
| MS.C04 | C4 Complete all factory acceptence testings (29-Nov'15) | 0.0d | | 28-Nov-15 | | | |
| MS.C05 | C5 Complete all delivery to site for ECS plant room (31-Jul'16) | 0.0d | | 19-Mar-16 | | | |
| MS.C06 | C6 Complete all installation, T&C for New Subway (4-Dec'16) | 0.0d | | 14-Nov-16 | | | |
| MS.C07 | C7 Complete and pass all statutory inspections, Operations Team (26-Feb'17) | 0.0d | | 25-Feb-17 | | | |
| **Milestones D** | | | | | | | |
| MS.D01 | D1 New AFC Audit Room construction completed, including (3-May'15) | 0.0d | | 25-Apr-15 | | | |
| MS.D02 | D2 Old AFC Audit Room and Maxim's/ Circle K kiosks demolished (31-Jan'16) | 0.0d | | 28-Jan-16 | | | |
| MS.D03 | D3 Breakthrought into WAC (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| MS.D04 | D4 All works in Cost Centre D satisfactorily completed (28-Aug'16) | 0.0d | | 27-Aug-16 | | | |
| **Milestones E** | | | | | | | |
| MS.E01 | E1- AFC gates and barrier relocation works completed (3-Jan'16) | 0.0d | | 02-Jan-16 | | | |
| MS.E02 | E2- All structural A&A works for TIM completed (30-Oct'16) | 0.0d | | 17-Oct-16 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

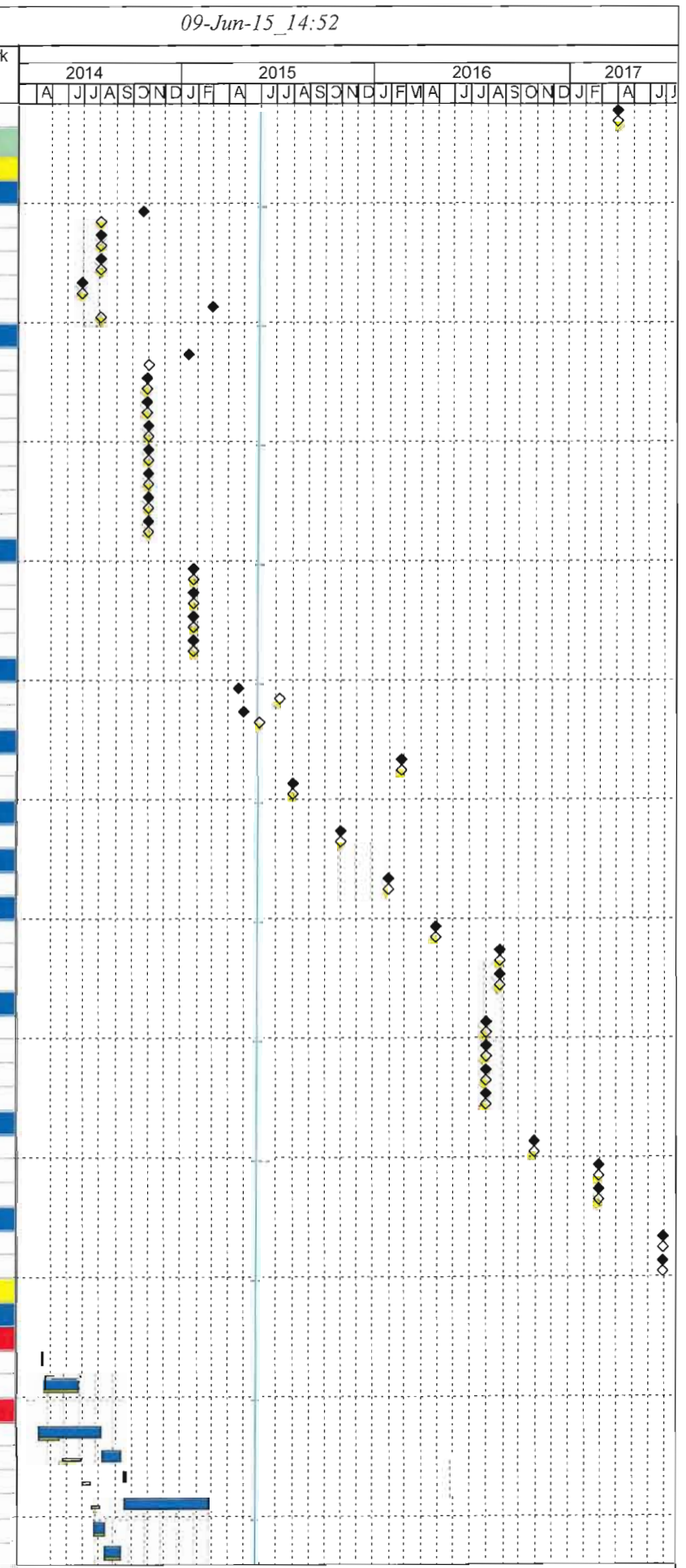
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| MS.E03 | E3- All works in milestone E completed (26-Feb'17) | 0.0d | | 09-Feb-17 | | | |
| **A: Preliminaries and General Items** | | | | | | | |
| **Cost Centre A- Milestone Schedules** | | | | | | | |
| **A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporay decking (3-Aug'14)** | | | | | | | |
| A01_0010 | Approval of Preliminary Master Program (3-Aug'14) | 0.0d | | 02-Aug-14 | | 21-Oct-14 | |
| A01_0020 | Approval of Specified Plans (3-Aug'14) | 0.0d | | 01-Aug-14 | | 01-Aug-14 | |
| A01_0030 | Approval of Independent Checking Engineer (3-Aug'14) | 0.0d | | 01-Aug-14 | | 01-Aug-14 | |
| A01_0040 | Approval of the TTM Scheme by the Relevant Authorities (3-Aug'14) | 0.0d | | 27-Jun-14 | | 27-Jun-14 | |
| A01_0050 | Approval for the design of ELS systems for cofferdams & temporary decking (3-Aug'14) | 0.0d | | 01-Aug-14 | | 03-Mar-15 | |
| **A2 Approval Design of Mined Tunnel ESS; Hoarding phase/plan; QP, SAP, PMP, H&SP, EMP (2-Nov'14)** | | | | | | | |
| A02_0010 | Approval for the design of excavation support systems of the mined tunnel section (2-Nov'14) | 0.0d | | 01-Nov-14 | | 16-Jan-15 | |
| A02_0020 | Approval of all phasing plans & hoarding arrangements (2-Nov'14) | 0.0d | | 28-Oct-14 | | 28-Oct-14 | |
| A02_0030 | Approval of all method statements for Part B works (2-Nov'14) | 0.0d | | 30-Oct-14 | | 30-Oct-14 | |
| A02_0040 | Engineer's confirmation of satisfactory implementation of Quality Plan (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| A02_0050 | Engineer's confirmation of satisfactory implementation of System Assurance Plan (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| A02_0060 | Engineer's confirmation of satisfactory implementation of Programming Management System (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| A02_0070 | Engineer's confirmation of satisfactory implementation of Health & Safety Plan (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| A02_0080 | Engineer's confirmation of satisfactory implementation of Environmental Management Plan (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| **A3 Satisfactory Implementation of Specified Plans (25-Jan'15)** | | | | | | | |
| A03_0010 | Engineer's confirmation of satisfactory implementation of System Assurance Plan (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| A03_0020 | Engineer's confirmation of satisfactory implementation of Health & Safety Plan (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| A03_0030 | Engineer's confirmation of satisfactory implementation of Quality Plan (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| A03_0040 | Engineer's confirmation of satisfactory implementation of Environmental Management Plan (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| **A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15)** | | | | | | | |
| A04_0010 | Approval for method of excavation & support for mined tunnel section beneath tram tracks (3-May'15) | 0.0d | | 02-May-15 | | 21-Apr-15 | |
| A04_0020 | Engineer's confirmation of satisfactory implementation of Programming Management System (3-May'15) | 0.0d | | 02-May-15 | | 02-May-15 | |
| **A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15)** | | | | | | | |
| A05_0010 | Approval for method for demolition of WAC Diaphragm Wall (2-Aug'15) | 0.0d | | 01-Aug-15 | | | |
| A05_0020 | Engineer's confirmation of satisfactory implementation of Specified Plans (2-Aug'15) | 0.0d | | 01-Aug-15 | | | |
| **A6 Satisfactory Implementation of PMS (1-Nov'15)** | | | | | | | |
| A06_0010 | Engineer's confirmation of satisfactory implementation of Programming Management System (1-Nov'15) | 0.0d | | 31-Oct-15 | | | |
| **A7 Satisfactory Implementation of Specified Plans (31-Jan'16)** | | | | | | | |
| A07_0010 | Engineer's confirmation of satisfactory implementation of Specified Plans (31-Jan'16) | 0.0d | | 30-Jan-16 | | | |
| **A8 AIP for T&C of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)** | | | | | | | |
| A08_0010 | Engineer's confirmation of satisfactory implementation of Programming Management System (1-May'16) | 0.0d | | 30-Apr-16 | | | |
| A08_0020 | Approval in principle of all procedures for Testing & Commissioning of all Building Services (1-May'16) | 0.0d | | 27-Apr-16 | | | |
| A08_0030 | Approval in principle of all acceptance procedures of all of the ABWF works (1-May'16) | 0.0d | | 27-Apr-16 | | | |
| **A9 Satisfactory Implementation of Specified Plans (31-Jul'16)** | | | | | | | |
| A09_0010 | Engineer's confirmation of satisfactory implementation of System Assurance Plan (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| A09_0020 | Engineer's confirmation of satisfactory implementation of Health & Safety Plan (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| A09_0030 | Engineer's confirmation of satisfactory implementation of Quality Plan (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| A09_0040 | Engineer's confirmation of satisfactory implementation of Environmental Management Plan (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| **A10 AIP Draft O&M manual & Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct'16)** | | | | | | | |
| A10_0010 | Engineer's confirmation of satisfactory implementation of Programming Management System (30-Oct'16) | 0.0d | | 29-Oct-16 | | | |
| A10_0020 | Approval in principle of draft Operating & Maintenance Manuals for the Whole Works (30-Oct'16) | 0.0d | | 27-Oct-16 | | | |
| A10_0030 | Approval in principle of draft As-built Drawings for the Whole Works (30-Oct'16) | 0.0d | | 27-Oct-16 | | | |
| **A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17)** | | | | | | | |
| A11_0010 | Approval of Operating & Maintenance Manual for Whole Works (26-Feb'17) | 0.0d | | 22-Feb-17 | | | |
| A11_0020 | Approval of As-built drawings for Whole Works (26-Feb'17) | 0.0d | | 22-Feb-17 | | | |
| **Cost Centre A: Preliminaries and General Items** | | | | | | | |
| **Design, ICE, Submission and Approval** | | | | | | | |
| **Design. IEC, TMLG Submission and Approval** | | | | | | | |
| D.I.T_0010 | TTMS - Submission to Members of TMLG for Approval, ref. ITT 6.2 | 4.0d | 14-Apr-14 | 17-Apr-14 | 14-Apr-14 | 17-Apr-14 | |
| D.I.T_0020 | TTMS - TMLG Meetings and Approval, Resubmission if required, RMO Applicataions | 55.0d | 22-Apr-14 | 27-Jun-14 | 22-Apr-14 | 27-Jun-14 | |
| **Design, ICE, BD Submission and Approval** | | | | | | | |
| D.I.T_0030 | A1 - ELS & Temporary Decking - Design, ICE, Submission to BD for Approval | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 11-Aug-14 | |
| D.I.T_0040 | A1 - ELS & Temporary Decking - Review the submission | 30.0d | 24-May-14 | 28-Jun-14 | 12-Aug-14 | 16-Sep-14 | |
| D.I.T_0050 | A1 - ELS & Temporary Decking - Preparation of re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 17-Sep-14 | 23-Sep-14 | |
| D.I.T_0060 | A1 - ELS & Temporary Decking - BD Review, Resubmission if required, and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 24-Sep-14 | 03-Mar-15 | |
| D.I.T_0070 | A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE | 17.0d | 29-Jul-14 | 16-Aug-14 | 29-Jul-14 | 16-Aug-14 | |
| D.I.T_0080 | A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE, Submission & Approval | 24.0d | 18-Aug-14 | 15-Sep-14 | 18-Aug-14 | 15-Sep-14 | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
◇ Baseline Milestone
◆ Milestone

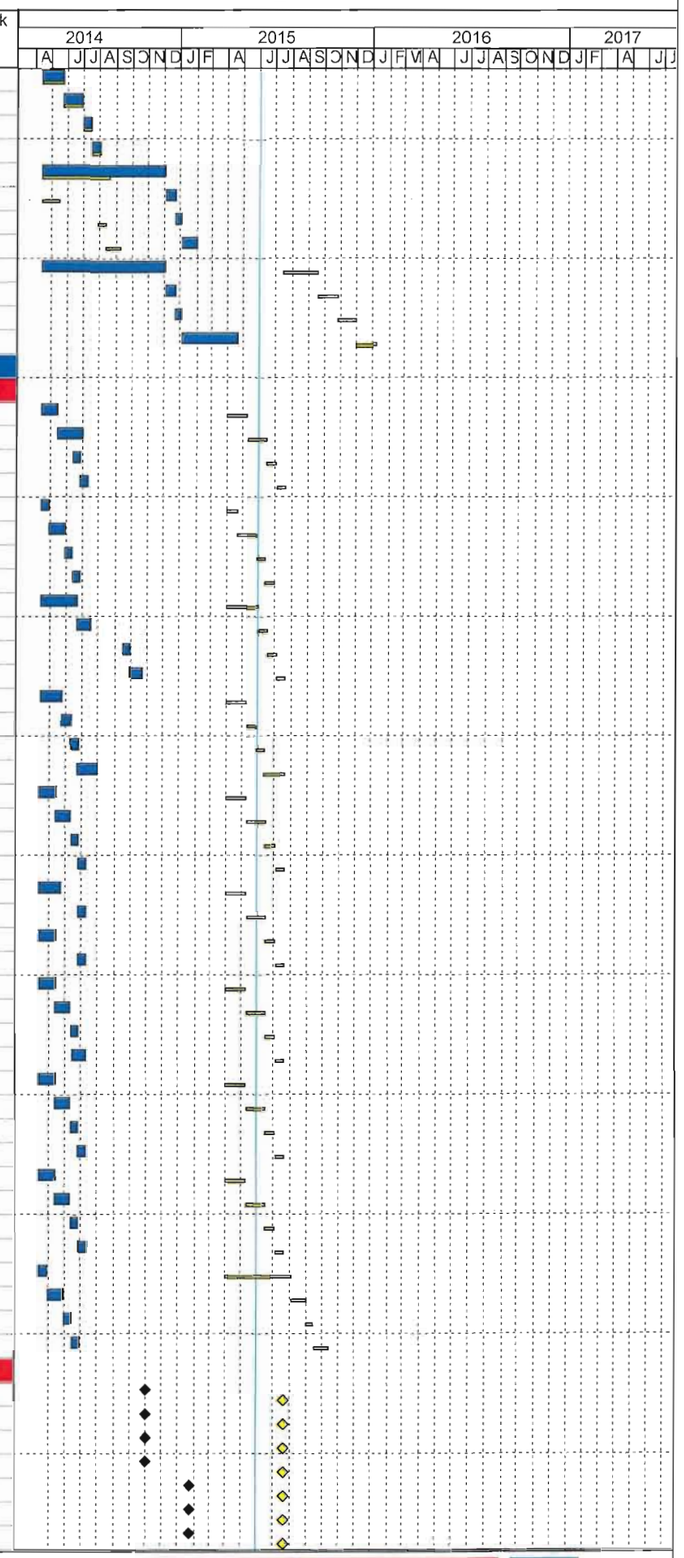
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| D.I.T_0090 | Independent Checking Engineer - Preparation & Submission for Approval | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 23-May-14 | |
| D.I.T_0100 | Independent Checking Engineer - Review the submission | 30.0d | 24-May-14 | 28-Jun-14 | 24-May-14 | 28-Jun-14 | |
| D.I.T_0110 | Independent Checking Engineer - Preparation of re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 30-Jun-14 | 16-Jul-14 | |
| D.I.T_0120 | Independent Checking Engineer - Resubmission if required, & Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 17-Jul-14 | 01-Aug-14 | |
| D.I.T_0130 | A2 - Excavation support system for the mined tunnel section design - Prepare, ICE and submission to BD/ GEO for Approval | 104.0d | 14-Apr-14 | 20-Aug-14 | 14-Apr-14 | 05-Dec-14 | |
| D.I.T_0140 | A2 - Excavation support system for the mined tunnel section design - Review submission | 24.0d | 21-Aug-14 | 18-Sep-14 | 06-Dec-14 | 23-Dec-14 | |
| D.I.T_0150 | A2 - Excavation support system for the mined tunnel section design - Address comments, ICE & Resubmission (if required) | 12.0d | 19-Sep-14 | 04-Oct-14 | 24-Dec-14 | 03-Jan-15 | |
| D.I.T_0160 | A2 - Excavation support system for the mined tunnel section design - Review & Approval (if required) | 24.0d | 06-Oct-14 | 01-Nov-14 | 05-Jan-15 | 01-Feb-15 | |
| D.I.T_0170 | A4 - Excavation method under tram track and TW design - Prepare, ICE and submission to BD/ GEO for Approval | 55.0d | 03-Nov-14 | 08-Jan-15 | 14-Apr-14 | 05-Dec-14 | |
| D.I.T_0180 | A4 - Excavation method under tram track and TW design - Review submission | 30.0d | 09-Jan-15 | 12-Feb-15 | 06-Dec-14 | 23-Dec-14 | |
| D.I.T_0190 | A4 - Excavation method under tram track and TW design - Address comments, ICE & Resubmission (if required) | 30.0d | 13-Feb-15 | 23-Mar-15 | 24-Dec-14 | 03-Jan-15 | |
| D.I.T_0200 | A4 - Excavation method under tram track and TW design - Review & Approval (if required) | 30.0d | 24-Mar-15 | 02-May-15 | 05-Jan-15 | 21-Apr-15 | |
| **Contractor Submission and Approval** | | | | | | | |
| **Programming, Specified Plans and Hoarding Plan** | | | | | | | |
| P.SP.H_0010 | Submission schedule - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0020 | Submission schedule - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 15-May-14 | 30-Jun-14 | |
| P.SP.H_0030 | Submission schedule - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0040 | Submission schedule - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0050 | Initial Three Month Rolling Program - Preparation & submission | 14.0d | 14-Apr-14 | 03-May-14 | 14-Apr-14 | 28-Apr-14 | |
| P.SP.H_0060 | Initial Three Month Rolling Program - Review & Approval | 30.0d | 05-May-14 | 10-Jun-14 | 29-Apr-14 | 28-May-14 | |
| P.SP.H_0070 | Initial Three Month Rolling Program - Preparation for Re-submission (If Require) | 14.0d | 11-Jun-14 | 26-Jun-14 | 29-May-14 | 12-Jun-14 | |
| P.SP.H_0080 | Initial Three Month Rolling Program - Review and Approval (If Require) | 14.0d | 27-Jun-14 | 14-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0090 | Preliminary Master Program - Preparation & submission | 47.0d | 14-Apr-14 | 13-Jun-14 | 14-Apr-14 | 20-Jun-14 | |
| P.SP.H_0100 | Preliminary Master Program - Review & Approval | 14.0d | 14-Jun-14 | 30-Jun-14 | 21-Jun-14 | 19-Jul-14 | |
| P.SP.H_0110 | Preliminary Master Program - Preparation for Re-submission (If Require) | 14.0d | 02-Jul-14 | 17-Jul-14 | 16-Sep-14 | 30-Sep-14 | |
| P.SP.H_0120 | Preliminary Master Program - Review and Approval (If Require) | 14.0d | 18-Jul-14 | 02-Aug-14 | 30-Sep-14 | 22-Oct-14 | |
| P.SP.H_0130 | Specified Plans (QP, SAP, PMS, H&SP, EP) - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 23-May-14 | |
| P.SP.H_0140 | Specified Plans (QP, SAP, PMS, H&SP, EP) - Review & Approval | 14.0d | 24-May-14 | 10-Jun-14 | 24-May-14 | 10-Jun-14 | |
| P.SP.H_0150 | Specified Plans (QP, SAP, PMS, H&SP, EP) - Preparation for Re-submission (If Require) | 14.0d | 11-Jun-14 | 26-Jun-14 | 11-Jun-14 | 26-Jun-14 | |
| P.SP.H_0160 | Specified Plans (QP, SAP, PMS, H&SP, EP) - Review and Approval (If Require) | 30.0d | 27-Jun-14 | 01-Aug-14 | 24-Jun-14 | 01-Aug-14 | |
| P.SP.H_0170 | Environmental management plan - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0180 | Environmental management plan - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 15-May-14 | 12-Jun-14 | |
| P.SP.H_0190 | Environmental management plan - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0200 | Environmental management plan - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0210 | Appoint Environmental team- submit for engineer approval | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 23-May-14 | |
| P.SP.H_0220 | Appoint Environmental team - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0230 | Appoint Environmental team - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0240 | Appoint Environmental team - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0250 | Quality Plan - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0260 | Quality Plan - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 15-May-14 | 12-Jun-14 | |
| P.SP.H_0270 | Quality Plan - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0280 | Quality Plan - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 17-Jun-14 | 11-Jul-14 | |
| P.SP.H_0290 | Health and Safety Plan - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0300 | Health and Safety Plan - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 15-May-14 | 12-Jun-14 | |
| P.SP.H_0310 | Health and Safety Plan - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0320 | Health and Safety Plan - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0330 | System Assurance Plan - Preparation & submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 14-May-14 | |
| P.SP.H_0340 | System Assurance Plan - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 15-May-14 | 12-Jun-14 | |
| P.SP.H_0350 | System Assurance Plan - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 13-Jun-14 | 26-Jun-14 | |
| P.SP.H_0360 | System Assurance Plan - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 27-Jun-14 | 11-Jul-14 | |
| P.SP.H_0370 | A2 Hoarding phase - Preparation & submission | 100.0d | 14-Apr-14 | 15-Aug-14 | 14-Apr-14 | 30-Apr-14 | |
| P.SP.H_0380 | A2 Hoarding phase - Review & Approval | 24.0d | 16-Aug-14 | 13-Sep-14 | 02-May-14 | 30-May-14 | |
| P.SP.H_0390 | A2 Hoarding phase - Preparation for Re-submission (If Require) | 12.0d | 15-Sep-14 | 27-Sep-14 | 31-May-14 | 14-Jun-14 | |
| P.SP.H_0400 | A2 Hoarding phase - Review and Approval (If Require) | 24.0d | 29-Sep-14 | 28-Oct-14 | 16-Jun-14 | 28-Jun-14 | |
| **Implemantation of Specified Plans** | | | | | | | |
| SP.A02_0010 | A2 Satisfactory Implementation of Quality Plan | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| SP.A03_0010 | A3 Satisfactory Implementation of System Assurance Plan | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| SP.A03_0020 | A3 Satisfactory Implementation of Health and Safety Plan | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| SP.A03_0030 | A3 Satisfactory Implementation of Environmental Management Plan | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| SP.A03_0040 | A3 Satisfactory Implementation of Quality Plan | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| SP.A03_0050 | A3 Satisfactory Implementation of System Assurance Plan | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| SP.A03_0060 | A3 Satisfactory Implementation of Health and Safety Plan | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

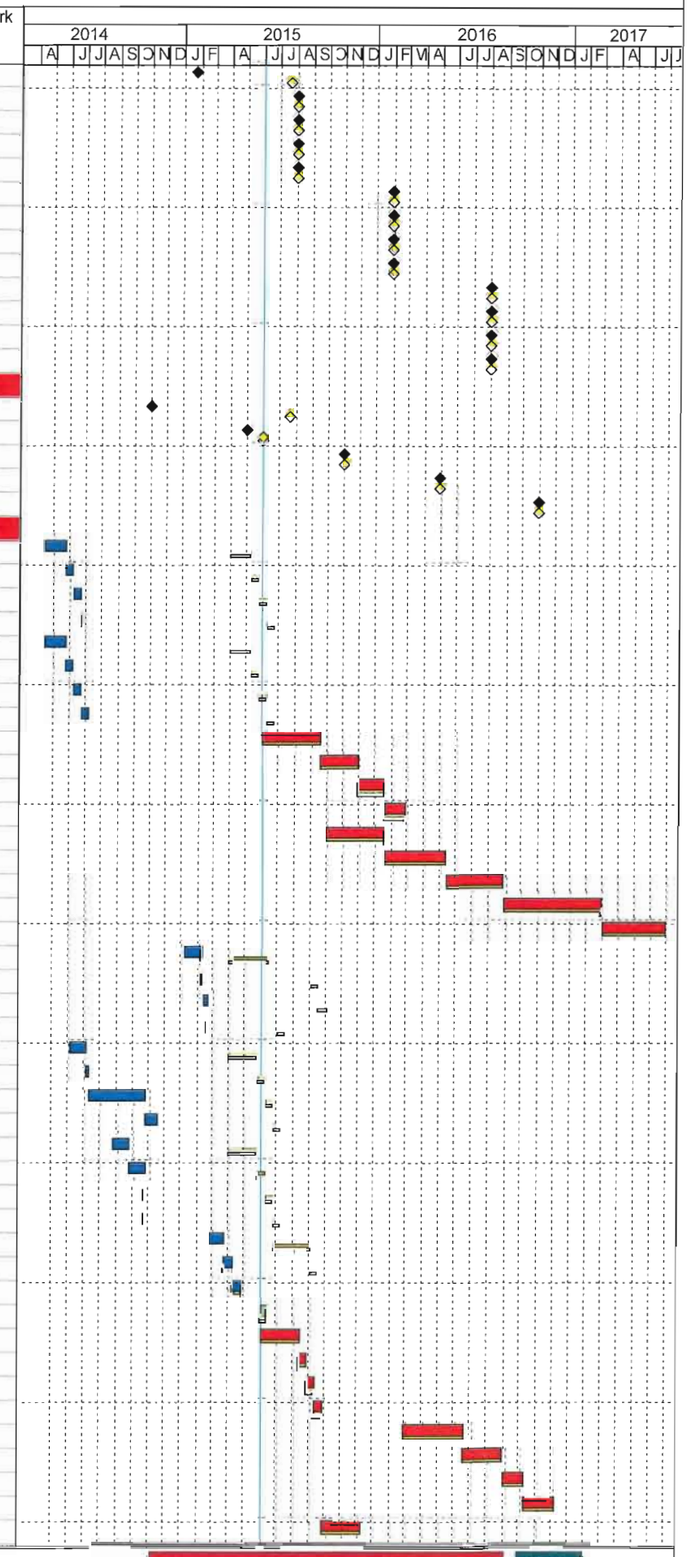
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| SP.A03_0070 | A3 Satisfactory Implementation of Environmental Management Plan | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| SP.A05_0010 | A5 Satisfactory Implementation of Quality Plan | 0.0d | | 01-Aug-15 | | | |
| SP.A05_0020 | A5 Satisfactory Implementation of System Assurance Plan | 0.0d | | 01-Aug-15 | | | |
| SP.A05_0030 | A5 Satisfactory Implementation of Health and Safety Plan | 0.0d | | 01-Aug-15 | | | |
| SP.A05_0040 | A5 Satisfactory Implementation of Environmental Management Plan | 0.0d | | 01-Aug-15 | | | |
| SP.A07_0010 | A7 Satisfactory Implementation of Quality Plan | 0.0d | | 30-Jan-16 | | | |
| SP.A07_0020 | A7 Satisfactory Implementation of System Assurance Plan | 0.0d | | 30-Jan-16 | | | |
| SP.A07_0030 | A7 Satisfactory Implementation of Health and Safety Plan | 0.0d | | 30-Jan-16 | | | |
| SP.A07_0040 | A7 Satisfactory Implementation of Environmental Management Plan | 0.0d | | 30-Jan-16 | | | |
| SP.A09_0010 | A9 Satisfactory Implementation of Quality Plan | 0.0d | | 30-Jul-16 | | | |
| SP.A09_0020 | A9 Satisfactory Implementation of System Assurance Plan | 0.0d | | 30-Jul-16 | | | |
| SP.A09_0030 | A9 Satisfactory Implementation of Health and Safety Plan | 0.0d | | 30-Jul-16 | | | |
| SP.A09_0040 | A9 Satisfactory Implementation of Environmental Management Plan | 0.0d | | 30-Jul-16 | | | |
| **Implementation of Programming Management System** | | | | | | | |
| PMS.A02_0010 | A2 Satisfactory Implementation of Programming Management System | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| PMS.A04_0010 | A4 Satisfactory Implementation of Programming Management System | 0.0d | | 02-May-15 | | 02-May-15 | |
| PMS.A06_0010 | A6 Satisfactory Implementation of Programming Management System | 0.0d | | 31-Oct-15 | | | |
| PMS.A08_0010 | A8 Satisfactory Implementation of Programming Management System | 0.0d | | 30-Apr-16 | | | |
| PMS.A10_0010 | A10 Satisfactory Implementation of Programming Management System | 0.0d | | 29-Oct-16 | | | |
| **Other Submissions and O&M Manual** | | | | | | | |
| OS.OM_0010 | Hoarding Installation Method Statement - Preparation & Submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 23-May-14 | |
| OS.OM_0020 | Hoarding Installation Method Statement - Review & Approval | 12.0d | 24-May-14 | 07-Jun-14 | 24-May-14 | 07-Jun-14 | |
| OS.OM_0030 | Hoarding Installation Method Statement - Preparation for Re-submission (if required) | 12.0d | 09-Jun-14 | 21-Jun-14 | 09-Jun-14 | 21-Jun-14 | |
| OS.OM_0040 | Hoarding Installation Method Statement - Re-submission (if required) & Approval | 12.0d | 23-Jun-14 | 07-Jul-14 | 23-Jun-14 | 23-Jun-14 | |
| OS.OM_0050 | Site Investigation Works Method Statement - Preparation & Submission | 30.0d | 14-Apr-14 | 23-May-14 | 14-Apr-14 | 23-May-14 | |
| OS.OM_0060 | Site Investigation Works Method Statement - Review & Approval | 12.0d | 24-May-14 | 07-Jun-14 | 24-May-14 | 07-Jun-14 | |
| OS.OM_0070 | Site Investigation Works Method Statement - Preparation for Re-submission (if required) | 12.0d | 09-Jun-14 | 21-Jun-14 | 09-Jun-14 | 21-Jun-14 | |
| OS.OM_0080 | Site Investigation Works Method Statement - Re-submission (if required) & Approval | 12.0d | 23-Jun-14 | 07-Jul-14 | 23-Jun-14 | 07-Jul-14 | |
| OS.OM_0090 | WAC & H15 D-wall demolition Design- ICE, Preparation for design submission | 90.0d | 03-Nov-14 | 18-Feb-15 | | | |
| OS.OM_0100 | WAC & H15 D-wall demolition- Review & Approval | 60.0d | 23-Feb-15 | 08-May-15 | | | |
| OS.OM_0110 | WAC & H15 D-wall demolition- Preparation for re-submission (If require) | 40.0d | 09-May-15 | 26-Jun-15 | | | |
| OS.OM_0120 | WAC & H15 D-wall demolition- Review & Approval (If require) | 30.0d | 27-Jun-15 | 01-Aug-15 | | | |
| OS.OM_0130 | A8 AIP procedures for T&C of BS and ABWF works (1st Batch) | 90.0d | 01-Jun-15 | 15-Sep-15 | | | |
| OS.OM_0140 | A8 AIP procedures for T&C of BS and ABWF works (2nd Batch) | 90.0d | 16-Sep-15 | 05-Jan-16 | | | |
| OS.OM_0150 | A8 AIP procedures for T&C of BS and ABWF works (Remaining) | 90.0d | 06-Jan-16 | 27-Apr-16 | | | |
| OS.OM_0160 | A10 AIP of Draft O&M manual and Draft As-built Drawings | 150.0d | 28-Apr-16 | 27-Oct-16 | | | |
| OS.OM_0170 | A11 Approval of O&M manual and As-built drawings for the Works | 95.0d | 28-Oct-16 | 22-Feb-17 | | | |
| OS.OM_0180 | RC Works- Preparation of Method Statement- Preparation | 60.0d | 08-Jul-14 | 16-Sep-14 | 06-Jan-15 | 06-Feb-15 | |
| OS.OM_0190 | RC Works - Preparation of Method Statement- Submission & Approval | 12.0d | 17-Sep-14 | 30-Sep-14 | 06-Feb-15 | 10-Feb-15 | |
| OS.OM_0200 | RC Works - Preparation for Re-submission (if required) | 12.0d | 03-Oct-14 | 16-Oct-14 | 10-Feb-15 | 16-Feb-15 | |
| OS.OM_0210 | RC Works - Re-submission (if required) & Approval | 12.0d | 17-Oct-14 | 30-Oct-14 | 16-Feb-15 | 16-Feb-15 | |
| OS.OM_0220 | Sheet pile installation- Preparation of Method Statement- Preparation | 42.0d | 14-Apr-14 | 07-Jun-14 | 03-Jun-14 | 03-Jul-14 | |
| OS.OM_0230 | Sheet pile installation- Preparation of Method Statement- Submission & Approval | 12.0d | 09-Jun-14 | 21-Jun-14 | 03-Jul-14 | 08-Jul-14 | |
| OS.OM_0240 | Sheet pile installation - Preparation for Re-submission (if required) | 12.0d | 23-Jun-14 | 07-Jul-14 | 08-Jul-14 | 23-Oct-14 | |
| OS.OM_0250 | Sheet pile installation - Re-submission (if required) & Approval | 12.0d | 08-Jul-14 | 21-Jul-14 | 23-Oct-14 | 14-Nov-14 | |
| OS.OM_0260 | Excavation works- Preparation of Method Statement- Preparation | 42.0d | 14-Apr-14 | 07-Jun-14 | 22-Aug-14 | 22-Sep-14 | |
| OS.OM_0270 | Excavation works- Preparation of Method Statement- Submission & Approval | 12.0d | 09-Jun-14 | 21-Jun-14 | 22-Sep-14 | 21-Oct-14 | |
| OS.OM_0280 | Excavation works- Preparation for Re-submission (if required) | 12.0d | 23-Jun-14 | 07-Jul-14 | 21-Oct-14 | 21-Oct-14 | |
| OS.OM_0290 | Excavation works- Re-submission (if required) & Approval | 12.0d | 08-Jul-14 | 21-Jul-14 | 21-Oct-14 | 21-Oct-14 | |
| OS.OM_0300 | Work below tram track Method Statement - Preparation | 60.0d | 08-Jul-14 | 16-Sep-14 | 23-Feb-15 | 23-Mar-15 | |
| OS.OM_0310 | Work below tram track Method Statement - Submission & Approval | 12.0d | 17-Sep-14 | 30-Sep-14 | 23-Mar-15 | 09-Apr-15 | |
| OS.OM_0320 | Work below tram track Method Statement - Preparation for Re-submission (if required) | 12.0d | 03-Oct-14 | 16-Oct-14 | 09-Apr-15 | 27-Apr-15 | |
| OS.OM_0330 | Work below tram track Method Statement - Re-submission (if required) & Approval | 12.0d | 17-Oct-14 | 30-Oct-14 | | | |
| OS.OM_0340 | H15 & WAC Break Through Method Statement - Preparation | 60.0d | 08-Jul-14 | 16-Sep-14 | | | |
| OS.OM_0350 | H15 & WAC Break Through Method Statement - Submission & Approval | 12.0d | 17-Sep-14 | 30-Sep-14 | | | |
| OS.OM_0360 | H15 & WAC Break Through Method Statement - Preparation for Re-submission (if required) | 12.0d | 03-Oct-14 | 16-Oct-14 | | | |
| OS.OM_0370 | H15 & WAC Break Through Method Statement - Re-submission (if required) & Approval | 12.0d | 17-Oct-14 | 30-Oct-14 | | | |
| OS.OM_0380 | BD for consent of H15 break throughs works - Preparation | 90.0d | 03-Aug-15 | 18-Nov-15 | | | |
| OS.OM_0390 | BD for consent of H15 break throughs works - Submission & Approval | 60.0d | 19-Nov-15 | 30-Jan-16 | | | |
| OS.OM_0400 | BD for consent of H15 break throughs works - Preparation for Re-submission (if required) | 30.0d | 01-Feb-16 | 09-Mar-16 | | | |
| OS.OM_0410 | BD for consent of H15 break throughs works - Re-submission (if required) & Approval | 50.0d | 10-Mar-16 | 12-May-16 | | | |
| OS.OM_0420 | Submit and obtain AIP for Method Statement, EDOC Draft, Permanent Materials | 60.0d | 31-Oct-14 | 12-Jan-15 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

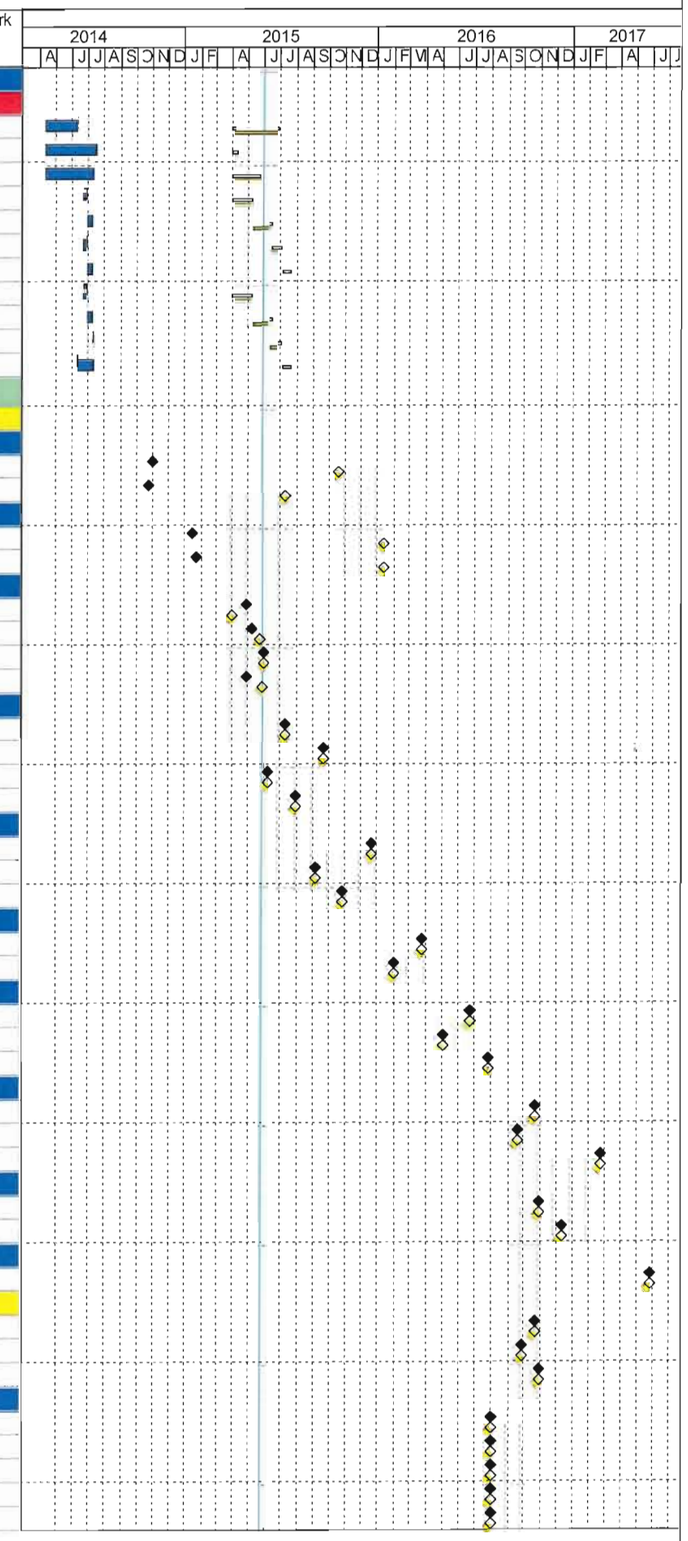
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| **Mobilization and Other Preliminaries** | | | | | | | |
| **Permit Applications** | | | | | | | |
| PA_0010 | XP Excavtion Permit Application and Permit | 70.0d | 14-Apr-14 | 11-Jul-14 | 14-Apr-14 | 10-Jun-14 | |
| PA_0020 | TRA Tree Removal Application and Permit | 6.0d | 14-Apr-14 | 23-Apr-14 | 14-Apr-14 | 15-Jul-14 | |
| PA_0030 | Liason with all utility service providers on diversions | 42.0d | 14-Apr-14 | 07-Jun-14 | 14-Apr-14 | 11-Jul-14 | |
| PA_0040 | Baseline noise monitoring report - Preparation & submission to Engineer and EPD | 30.0d | 14-Apr-14 | 23-May-14 | 23-Jun-14 | 28-Jun-14 | |
| PA_0050 | Baseline noise monitoring report - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 30-Jun-14 | 09-Jul-14 | |
| PA_0060 | Baseline noise monitoring report - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 23-Jun-14 | 28-Jun-14 | |
| PA_0070 | Baseline noise monitoring report - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 30-Jun-14 | 09-Jul-14 | |
| PA_0080 | Baseline air monitoring report - Preparation & submission to Engineer and EPD | 30.0d | 14-Apr-14 | 23-May-14 | 23-Jun-14 | 28-Jun-14 | |
| PA_0090 | Baseline air monitoring report - Review & Approval | 30.0d | 24-May-14 | 28-Jun-14 | 30-Jun-14 | 09-Jul-14 | |
| PA_0100 | Baseline air monitoring report - Preparation for Re-submission (If Require) | 14.0d | 30-Jun-14 | 16-Jul-14 | 10-Jul-14 | 10-Jul-14 | |
| PA_0110 | Baseline air monitoring report - Review and Approval (If Require) | 14.0d | 17-Jul-14 | 01-Aug-14 | 10-Jun-14 | 11-Jul-14 | |
| **B : Civil, Structural and ABWF Works for the New Subway (Part A Works)** | | | | | | | |
| **Cost Centre B- Milestone Schedules** | | | | | | | |
| **B1 Excavate to +2.5 of SBC & Children's Play Area Cofferdam completed (2-Nov'14)** | | | | | | | |
| MSB01_01 | Southern Basket Ball Court: excavate to +2.5mPD (2-Nov'14) | 0.0d | | 01-Nov-14 | | 01-Nov-14 | |
| MSB01_02 | Children's Play Area - Cofferdam construction is completed (2-Nov'14) | 0.0d | | 25-Oct-14 | | 25-Oct-14 | |
| **B2 SBC Excavation complete & Children's Play Area Excavation to -1.3mPD (25-Jan'15)** | | | | | | | |
| MSB02_01 | Southern Basket Ball Court: Excavation is satisfactorily completed (25-Jan'15) | 0.0d | | 24-Jan-15 | | 16-Jan-15 | |
| MSB02_02 | Children's Play Area: Excavation has reached -1.3mPD (25-Jan'15) | 0.0d | | 24-Jan-15 | | 24-Jan-15 | |
| **B3 SBC RC Roof, JnR NFP & EBC 67% cofferdam, JnR WBC UU div complete (3-May'15)** | | | | | | | |
| MSB03_01 | Southern Basket Ball Court: Roof slab construction has been satisfactorily completed (3-May'15) | 0.0d | | 02-May-15 | | 28-Apr-15 | |
| MSB03_02 | Johnston Road North Footpath and East-bound Carriageway: 67% of cofferdam installation complete (3-May'15) | 0.0d | | 27-Apr-15 | | 09-May-15 | |
| MSB03_03 | Johnston Road West-bound Carriageway - All utility diversions, where required, satisfactorily completed (3-May'15) | 0.0d | | 21-Mar-15 | | | |
| MSB03_04 | 10% completed of tram track support (3-May'15) | 0.0d | | 02-May-15 | | 29-Apr-15 | |
| **B4 SBC return, NBC Site entry, CPA base, JnR NFP & EBC Cofferdam & decks complete (2-Aug'15)** | | | | | | | |
| MSB04_01 | Southern Basket Ball Court: Playing surface has been returned to LCSD for use (2-Aug'15) | 0.0d | | 27-Jun-15 | | | |
| MSB04_02 | Northern Basket Ball Court: Site entry onto Hennessy Road has been formed (2-Aug'15) | 0.0d | | 31-Jul-15 | | | |
| MSB04_03 | Children's Play Area: RC construction of the base slab, except at mucking out point, complete (2-Aug'15) | 0.0d | | 31-Jul-15 | | | |
| MSB04_04 | JnR N-Footpath & E-Bound Carriageway: Cofferdam construction complete & all temp traffic decks installed (2-Aug'15) | 0.0d | | 29-Jul-15 | | | |
| **B5 NBC cofferdam, CPA RC & vent shaft 1.2m above GL, Tram Tracks Excavation to +0.0mPD (1-Nov'15)** | | | | | | | |
| MSB05_01 | Northern Basket Ball Court: Satisfactorily complete construction of the cofferdam (1-Nov'15) | 0.0d | | 30-Oct-15 | | | |
| MSB05_02 | Children's Play Area: RC construction complete include above ground vent shaft structures 1.2m above ground (1-Nov'15) | 0.0d | | 31-Oct-15 | | | |
| MSB05_03 | Tram Tracks - Excavation to +0.0 mPD is satisfactorily completed (1-Nov'15) | 0.0d | | 24-Oct-15 | | | |
| **B6 NBC Excavation to formation, JnR Excavation complete (31-Jan'16)** | | | | | | | |
| MSB06_01 | Northern basket Ball Court - Excavation to final formation has been satisfactorily completed (31-Jan'16) | 0.0d | | 29-Jan-16 | | | |
| MSB06_02 | Johnston Road All Carriageways, Footpaths & Tram Tracks: Excavation is completed (31-Jan'16) | 0.0d | | 30-Jan-16 | | | |
| **B7 NBC RC roof, JnR CW & FP & TT RC construction exp temp opening, CPA RC complete (1-May'16)** | | | | | | | |
| MSB07_01 | Northern Basket Ball Court: RC construction of the roof slab has been completed (1-May'16) | 0.0d | | 30-Apr-16 | | | |
| MSB07_02 | JnR Carriageways, Footpaths & Tram Tracks: RC construction, except at temporary opening completed (1-May'16) | 0.0d | | 30-Apr-16 | | | |
| MSB07_03 | Children's Play Area: RC Construction of above ground ventilation shaft structures is completed (1-May'16) | 0.0d | | 28-Apr-16 | | | |
| **B8 ABWF Degree1 achieved, NBC All reinstatement, Opening through H15 D-wall complete (31-Jul'16)** | | | | | | | |
| MSB08_01 | ABWF to Degree 1 has been achieved for works in this cost centre (31-Jul'16) | 0.0d | | 28-Jul-16 | | | |
| MSB08_02 | Northern Basket Ball Court - All re-surfacing works & playing surface reinstatement completed (31-Jul'16) | 0.0d | | 28-Jul-16 | | | |
| MSB08_03 | H15 Interface: The opening through H15 diaphragm wall has been formed (31-Jul'16) | 0.0d | | 30-Jul-16 | | | |
| **B9 ABWF Degree3 achieved, All road reinstatement in JnR & Hennessy Rd complete (30-Oct'16)** | | | | | | | |
| MSB09_01 | ABWF to Degree 3 has been achieved for works in this cost centre (30-Oct'16) | 0.0d | | 27-Oct-16 | | | |
| MSB09_02 | All road reinstatement works in Johnston Road and Hennessy Road have been satisfactorily completed (30-Oct'16) | 0.0d | | 21-Oct-16 | | | |
| **B10 All works in Cost Centre B satisfactorily completed (26-Feb'17)** | | | | | | | |
| MSB10_01 | All works in this cost centre have been satisfactorily completed (26-Feb'17) | 0.0d | | 25-Feb-17 | | | |
| **Degrees of completion for ABWF Works** | | | | | | | |
| ABWF.D1 | ABWF Works - Degree 1 | 0.0d | | 28-Jul-16 | | | |
| ABWF.D2 | ABWF Works - Degree 2 | 0.0d | | 23-Sep-16 | | | |
| ABWF.D3 | ABWF Works - Degree 3 | 0.0d | | 27-Oct-16 | | | |
| **ABWF Works - Degree 1** | | | | | | | |
| ABWF.D1_1.010 | 1.1- Structure and building complete, clean, dry and weather proof | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.020 | 1.2- Blockwalls and partition walls complete, except on plant access route | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.030 | 1.3- Plastering, undercoat painting, floor screeding including plinths & upstands complete | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.040 | 1.4- Equipment delivery routes & access openings available for Designated Contractors or Interface Contractors | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.050 | 1.5- Cast-in items & subframe installed; niches, recesses and box outs formed; cable troughs, ducts & risers complete | 0.0d | | 28-Jul-16 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

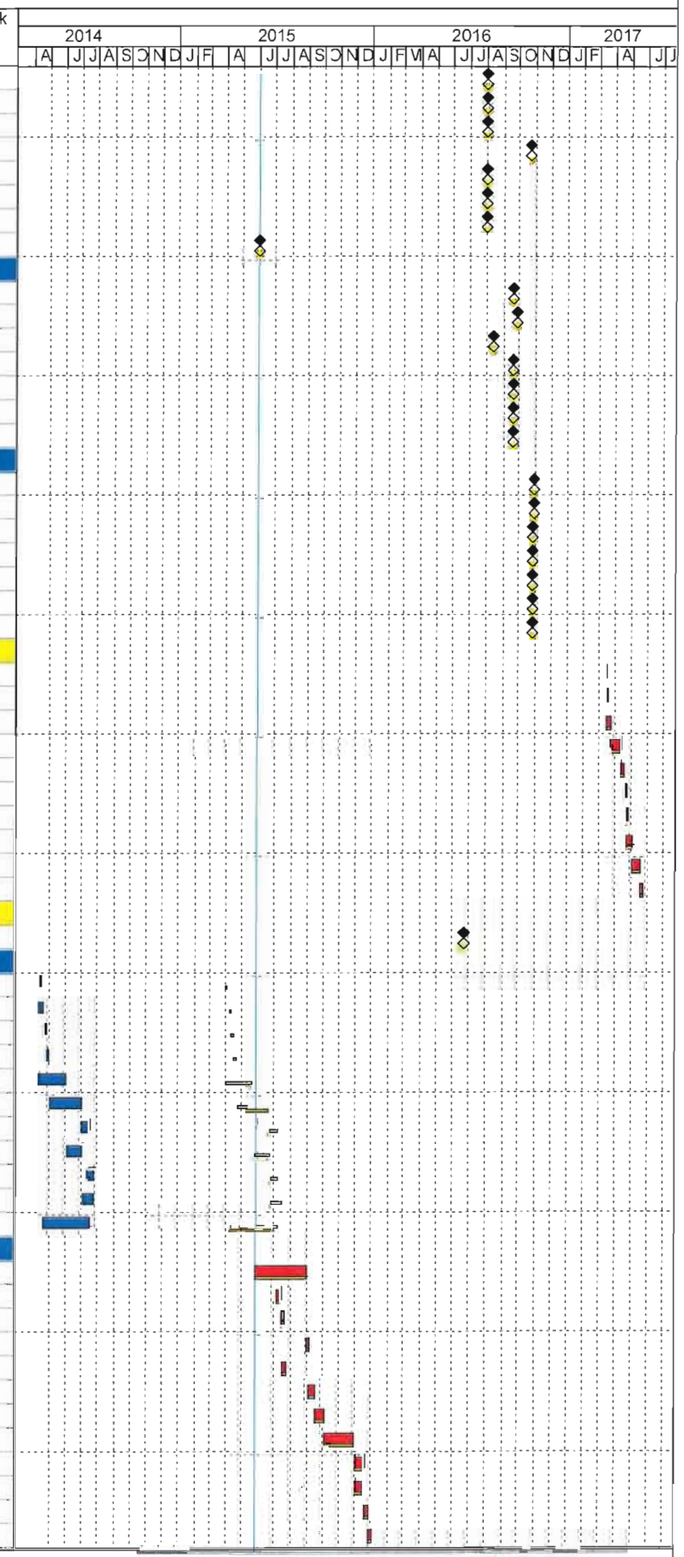
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| ABWF.D1_1.060 | 1.6- Structure as-built survey accepted | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.070 | 1.7- Structural & blockwork E&M openings formed & survey complete | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.080 | 1.8- Movement joints & stitch strips complete | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.090 | 1.9- Drainage system & discharge connections complete with temporary pumps operational | 0.0d | | 27-Jul-16 | | | |
| ABWF.D1_1.100 | 1.10- Escalator zones & pits complete; survey reference lines accepted | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.110 | 1.11- Earthing mat, earthing rods & earthing pits complete & test results accepted | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.120 | 1.12- Underground pipework complete including manholes, ductworks & drawpits | 0.0d | | 28-Jul-16 | | | |
| ABWF.D1_1.130 | 1.13- Civil & building provisions for designated & interfacing contractors complete | 0.0d | | 14-Apr-14 | | | |
| **ABWF Works - Degree 2** | | | | | | | |
| ABWF.D2_2.010 | 2.1- Permanent door frames installed with temporary doors and locks | 0.0d | | 15-Sep-16 | | | |
| ABWF.D2_2.020 | 2.2- Floor finishes & wall tilling in plant rooms for Designated Contractors complete | 0.0d | | 23-Sep-16 | | | |
| ABWF.D2_2.030 | 2.3- Glazing & Balustrade support installed | 0.0d | | 11-Aug-16 | | | |
| ABWF.D2_2.040 | 2.4- Metal staircases, cat-ladders & catwalks complete | 0.0d | | 15-Sep-16 | | | |
| ABWF.D2_2.050 | 2.5- External louvers installed | 0.0d | | 15-Sep-16 | | | |
| ABWF.D2_2.060 | 2.6- Framework for final finishes installed | 0.0d | | 15-Sep-16 | | | |
| ABWF.D2_2.070 | 2.7- Water tightness testing to water tanks passed | 0.0d | | 15-Sep-16 | | | |
| **ABWF Works - Degree 3** | | | | | | | |
| ABWF.D3_3.010 | 3.1- All finishes complete including permanent doors, ironmongery | 0.0d | | 27-Oct-16 | | | |
| ABWF.D3_3.020 | 3.2- Balustrade installed | 0.0d | | 27-Oct-16 | | | |
| ABWF.D3_3.030 | 3.3- Signage hangers & supports installed | 0.0d | | 24-Oct-16 | | | |
| ABWF.D3_3.040 | 3.4- Roller shutters, fire shutters & smoke barriers installed | 0.0d | | 24-Oct-16 | | | |
| ABWF.D3_3.050 | 3.5- Acoustic treatment applied | 0.0d | | 24-Oct-16 | | | |
| ABWF.D3_3.060 | 3.6- Louvres & grilles installed | 0.0d | | 24-Oct-16 | | | |
| ABWF.D3_3.070 | 3.7- All openings & Penetrations sealed | 0.0d | | 24-Oct-16 | | | |
| **Southorn Playground Reprovision works** | | | | | | | |
| RW_0010 | LCSD handover Northern Basket Ball Court 1 | 1.0d | 17-Dec-16 | 17-Dec-16 | | | |
| RW_0020 | Fence off the site | 2.0d | 19-Dec-16 | 20-Dec-16 | | | |
| RW_0030 | Expose the surface | 6.0d | 21-Dec-16 | 29-Dec-16 | | | |
| RW_0040 | Resurfacing works | 14.0d | 30-Dec-16 | 16-Jan-17 | | | |
| RW_0050 | Hand over to LCSD, additional remedial if require | 5.0d | 17-Jan-17 | 21-Jan-17 | | | |
| RW_0060 | LCSD handover Southern Basket Ball Court 2 | 1.0d | 23-Jan-17 | 23-Jan-17 | | | |
| RW_0070 | Fence off the site | 2.0d | 24-Jan-17 | 25-Jan-17 | | | |
| RW_0080 | Expose the surface | 6.0d | 26-Jan-17 | 04-Feb-17 | | | |
| RW_0090 | Resurfacing works | 13.0d | 06-Feb-17 | 20-Feb-17 | | | |
| RW_0100 | Hand over to LCSD, additional remedial if require | 5.0d | 21-Feb-17 | 25-Feb-17 | | | |
| **Cost Centre B: Part A Works, Civil and Structural Works for the New Subway** | | | | | | | |
| B.RC_Comp | RC Structure completed for the new subway | 0.0d | | 30-Apr-16 | | | |
| **Site Preliminary Works** | | | | | | | |
| SPW_0010 | LCSD handover SBC & Play's Area | 3.0d | 14-Apr-14 | 16-Apr-14 | 14-Apr-14 | 16-Apr-14 | |
| SPW_0020 | Fence off the Site area for SBC & Play's Area | 3.0d | 17-Apr-14 | 23-Apr-14 | 17-Apr-14 | 23-Apr-14 | |
| SPW_0030 | Employ security guard & security booth delivery | 3.0d | 24-Apr-14 | 26-Apr-14 | 24-Apr-14 | 26-Apr-14 | |
| SPW_0040 | Removal of existing furniture for SBC & Play's Area as require | 6.0d | 28-Apr-14 | 05-May-14 | 28-Apr-14 | 05-May-14 | |
| SPW_0050 | Trial trenches and expose existing UU service in SBC & Play's area | 40.0d | 14-Apr-14 | 05-Jun-14 | 14-Apr-14 | 05-Jun-14 | |
| SPW_0060 | Setting up site office & misc. | 50.0d | 07-May-14 | 05-Jul-14 | 07-May-14 | 05-Jul-14 | |
| SPW_0070 | Form site access for vehicle | 12.0d | 07-Jul-14 | 19-Jul-14 | 07-Jul-14 | 19-Jul-14 | |
| SPW_0080 | Diversion of existing utilities & misc. works if require for SBC & Play's Area | 24.0d | 09-Jun-14 | 07-Jul-14 | 09-Jun-14 | 07-Jul-14 | |
| SPW_0090 | Erect hoarding for SBC | 12.0d | 08-Jul-14 | 21-Jul-14 | 16-Jul-14 | 29-Jul-14 | |
| SPW_0100 | Ground/ Site Investigation in SBC & Play's Area | 18.0d | 08-Jul-14 | 28-Jul-14 | 08-Jul-14 | 28-Jul-14 | |
| SPW_0110 | Transplant and tree removal | 72.0d | 24-Apr-14 | 21-Jul-14 | 24-Apr-14 | 21-Jul-14 | |
| **Northern Basket Ball Court** | | | | | | | |
| NBC_0010 | Liaison with relevance parties for TTM | 80.0d | 02-Apr-15 | 13-Jul-15 | | | |
| NBC_0020 | LCSD handover Northern Basket Ball Court for LTS construction works | 6.0d | 29-Jun-15 | 06-Jul-15 | | | |
| NBC_0030 | Preparation works for NBC site access | 4.0d | 07-Jul-15 | 10-Jul-15 | | | |
| NBC_0040 | Implementation of TTM | 3.0d | 14-Jul-15 | 16-Jul-15 | | | |
| NBC_0050 | Relocation of metal fence access door for public | 6.0d | 11-Jul-15 | 17-Jul-15 | | | |
| NBC_0060 | Hoarding installation, installation of site entry on Hennessy Road | 12.0d | 18-Jul-15 | 31-Jul-15 | | | |
| NBC_0070 | Expose UU & trial trench for sheet piles works | 12.0d | 01-Aug-15 | 14-Aug-15 | | | |
| NBC_0080 | Phase 3 ELS- Sheet Piles Installation [104 no. x 24m] | 48.0d | 15-Aug-15 | 12-Oct-15 | | | |
| NBC_0090 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 15.0d | 13-Oct-15 | 30-Oct-15 | | | |
| NBC_0100 | Phase 3 ELS- Pumping Test preparation works | 12.0d | 13-Oct-15 | 27-Oct-15 | | | |
| NBC_0110 | Phase 3 ELS- Pumping Test | 6.0d | 31-Oct-15 | 06-Nov-15 | | | |
| NBC_0120 | Phase 3 ELS- Pumping Test Report Preparation and submission to BD | 6.0d | 07-Nov-15 | 13-Nov-15 | | | |




Actual Level of Effort
Primary Baseline
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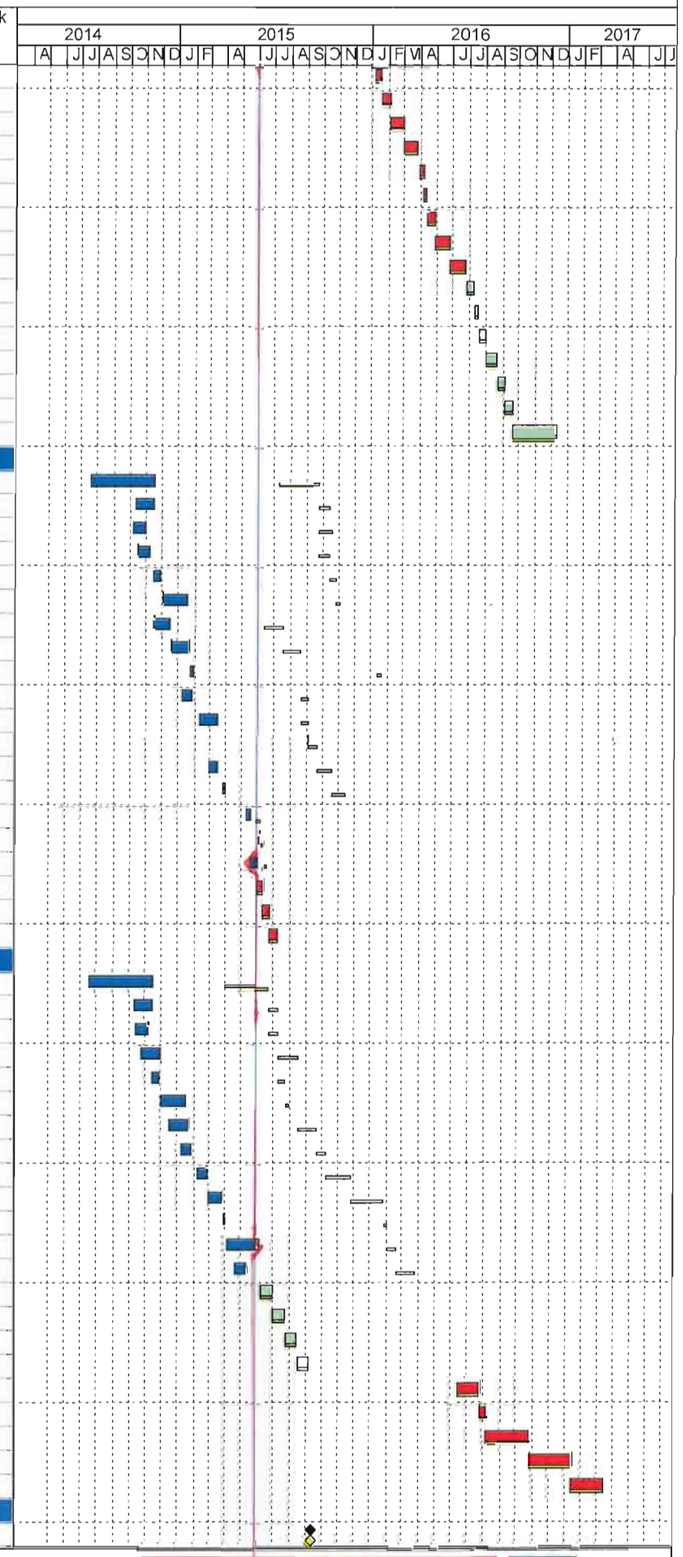
Critical Remaining Work
◇ Baseline Milestone
◆ Milestone

**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**
***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| NBC_0130 | Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [500m^3] | 9.0d | 14-Nov-15 | 24-Nov-15 | | | |
| NBC_0140 | Bulk excavation & layer 2 strut & preloading [500m^3] | 15.0d | 25-Nov-15 | 11-Dec-15 | | | |
| NBC_0150 | Bulk excavation & layer 3 strut & preloading [500m^3] | 18.0d | 12-Dec-15 | 05-Jan-16 | | | |
| NBC_0160 | Bulk excavation & layer 4 strut & preloading [500m^3] | 21.0d | 06-Jan-16 | 29-Jan-16 | | | |
| NBC_0170 | Plate load test | 6.0d | 30-Jan-16 | 05-Feb-16 | | | |
| NBC_0180 | Plate load test- Preparation of report & submission to BD | 6.0d | 06-Feb-16 | 16-Feb-16 | | | |
| NBC_0190 | Base Slab- Waterproofing & RC construction [Concrete 490m^3] & [Re-Bar 29.5 T] | 15.0d | 17-Feb-16 | 04-Mar-16 | | | |
| NBC_0200 | Wall- Waterproofing & RC construction [Concrete 300m^3] & [Re-Bar 54 T] | 21.0d | 05-Mar-16 | 01-Apr-16 | | | |
| NBC_0210 | Top Slab- Waterproofing & RC construction [Concrete 180m^3] & [Re-Bar 42.7 T] | 24.0d | 02-Apr-16 | 30-Apr-16 | | | |
| NBC_0220 | Construction of flood light footing [2 nos.] | 12.0d | 03-May-16 | 17-May-16 | | | |
| NBC_0230 | Reinstatement and installation of flood light [2nos.] | 6.0d | 18-May-16 | 24-May-16 | | | |
| NBC_0240 | Backfilling for Northern Basketball Court | 12.0d | 25-May-16 | 07-Jun-16 | | | |
| NBC_0250 | Reinstate hard paving of Northern Basketball Court | 18.0d | 08-Jun-16 | 29-Jun-16 | | | |
| NBC_0260 | Reinstate surface coating of Northern Basketball Court | 12.0d | 30-Jun-16 | 14-Jul-16 | | | |
| NBC_0270 | Hand over to LCSD, additional remedial if require | 12.0d | 15-Jul-16 | 28-Jul-16 | | | |
| NBC_0280 | Reinstate road surface on Hennessy Road | 70.0d | 29-Jul-16 | 21-Oct-16 | | | |
| **Southern Basket Ball Court** | | | | | | | |
| SBC_0010 | Phase 1 ELS- Sheet Piles Installation [184n. x 24m] | 65.0d | 22-Jul-14 | 08-Oct-14 | 22-Jul-14 | 15-Nov-14 | |
| SBC_0020 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 15.0d | 09-Oct-14 | 25-Oct-14 | 15-Oct-14 | 15-Nov-14 | |
| SBC_0030 | Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [800m^3] | 21.0d | 09-Oct-14 | 01-Nov-14 | 09-Oct-14 | 01-Nov-14 | |
| SBC_0040 | Phase 1 ELS- Pumping Test preparation works | 15.0d | 09-Oct-14 | 25-Oct-14 | 16-Oct-14 | 08-Nov-14 | |
| SBC_0050 | Phase 1 ELS- Pumping Test | 11.0d | 27-Oct-14 | 07-Nov-14 | 17-Nov-14 | 28-Nov-14 | |
| SBC_0060 | Phase 1 ELS- Pumping Test Report Preparation and submission to BD | 6.0d | 08-Nov-14 | 14-Nov-14 | 04-Dec-14 | 19-Jan-15 | |
| SBC_0070 | Bulk excavation & layer 2 strut & preloading [800m^3] | 28.0d | 15-Nov-14 | 17-Dec-14 | 15-Nov-14 | 17-Dec-14 | |
| SBC_0080 | Bulk excavation & layer 3 strut & preloading [800m^3] | 30.0d | 18-Dec-14 | 24-Jan-15 | 18-Dec-14 | 24-Jan-15 | |
| SBC_0090 | Plate load test | 6.0d | 26-Jan-15 | 31-Jan-15 | 26-Jan-15 | 31-Jan-15 | |
| SBC_0100 | Temporary Traffic Deck construction | 12.0d | 26-Jan-15 | 07-Feb-15 | 10-Jan-15 | 28-Jan-15 | |
| SBC_0110 | Plate load test- Preparation of report & submission to BD | 12.0d | 02-Feb-15 | 14-Feb-15 | 12-Feb-15 | 16-Mar-15 | |
| SBC_0120 | Base Slab- Waterproofing & RC construction [Concrete 420m^3] & [Re-Bar 25.3 T] | 15.0d | 16-Feb-15 | 07-Mar-15 | 04-Sep-15 | 04-Sep-15 | |
| SBC_0130 | Wall- Waterproofing & RC construction [Concrete 280m^3] & [Re-Bar 50.4 T] | 21.0d | 09-Mar-15 | 01-Apr-15 | 02-Mar-15 | 17-Mar-15 | |
| SBC_0140 | Top Slab- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 50 T] | 22.0d | 02-Apr-15 | 02-May-15 | 28-Mar-15 | 02-Apr-15 | |
| SBC_0150 | Construction of flood light footing (2 nos.) | 7.0d | 04-May-15 | 11-May-15 | 14-May-15 | 21-May-15 | |
| SBC_0160 | Reinstatement and installation of flood light (2nos.) | 3.0d | 12-May-15 | 14-May-15 | 05-Jun-15 | 05-Jun-15 | |
| SBC_0170 | Backfilling for Southern Basketball Court | 6.0d | 15-May-15 | 21-May-15 | 21-May-15 | | |
| SBC_0180 | Reinstate hard paving of Southern Basketball Court | 9.0d | 22-May-15 | 02-Jun-15 | | | |
| SBC_0190 | Reinstate surface coating of Southern Basketball Court | 9.0d | 03-Jun-15 | 12-Jun-15 | | | |
| SBC_0200 | Hand over to LCSD, additional remedial if require | 12.0d | 13-Jun-15 | 27-Jun-15 | | | |
| **Children's Play Area** | | | | | | | |
| CPA_0010 | Phase 1 ELS- Sheet Piles Installation [123 No. x 24m] | 65.0d | 22-Jul-14 | 08-Oct-14 | 22-Jul-14 | 15-Nov-14 | |
| CPA_0020 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 15.0d | 09-Oct-14 | 25-Oct-14 | 15-Oct-14 | 15-Nov-14 | |
| CPA_0030 | Phase 1 ELS- Pumping Test preparation works | 15.0d | 09-Oct-14 | 25-Oct-14 | 16-Oct-14 | 08-Nov-14 | |
| CPA_0040 | Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [680m^3] | 32.0d | 27-Oct-14 | 02-Dec-14 | 27-Oct-14 | 02-Dec-14 | |
| CPA_0050 | Phase 1 ELS- Pumping Test | 11.0d | 27-Oct-14 | 07-Nov-14 | 17-Nov-14 | 28-Nov-14 | |
| CPA_0060 | Phase 1 ELS- Pumping Test Report Preparation and submission to BD | 6.0d | 08-Nov-14 | 14-Nov-14 | 04-Dec-14 | 19-Jan-15 | |
| CPA_0070 | Bulk excavation & layer 2 strut & preloading to -1.3 mPD [680m^3] | 30.0d | 18-Dec-14 | 24-Jan-15 | 18-Dec-14 | 24-Jan-15 | |
| CPA_0080 | Play's Area Temporary Traffic Deck construction | 12.0d | 26-Jan-15 | 07-Feb-15 | 10-Jan-15 | 28-Jan-15 | |
| CPA_0090 | Bulk excavation & layer 3 strut & preloading [680m^3] | 40.0d | 09-Feb-15 | 30-Mar-15 | 09-Feb-15 | 28-Feb-15 | |
| CPA_0100 | Bulk excavation & layer 4 strut & preloading [680m^3] | 50.0d | 31-Mar-15 | 03-Jun-15 | 01-Mar-15 | 27-Mar-15 | |
| CPA_0110 | Plate load test | 6.0d | 04-Jun-15 | 10-Jun-15 | 30-Mar-15 | 02-Apr-15 | |
| CPA_0120 | Plate load test- Preparation of report & submission to BD | 12.0d | 11-Jun-15 | 25-Jun-15 | 08-Apr-15 | | |
| CPA_0130 | Base Slab- Waterproofing & RC construction [Concrete 395m^3] & [Re-Bar 23.8 T] | 30.0d | 26-Jun-15 | 31-Jul-15 | 23-Apr-15 | 13-May-15 | |
| CPA_0140 | Wall- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 37.8 T] | 18.0d | 01-Aug-15 | 21-Aug-15 | | | |
| CPA_0150 | Top Slab- Waterproofing & RC construction [Concrete 185m^3] & [Re-Bar 43.8 T] | 20.0d | 22-Aug-15 | 14-Sep-15 | | | |
| CPA_0160 | Ventilation Shaft Below Ground- Waterproofing & RC construction [Concrete 35m^3] & [Re-Bar 6.3 T] | 20.0d | 15-Sep-15 | 09-Oct-15 | | | |
| CPA_0170 | Ventilation Shaft 1.2m Above Ground- Waterproofing & RC construction [Concrete 25m^3] & [Re-Bar 4.5 T] | 18.0d | 10-Oct-15 | 31-Oct-15 | | | |
| CPA_0180 | Ventilation Shaft - Waterproofing & RC construction reach +7.40 & +9.50mPD [Concrete 50m^3] & [Re-Bar 9 T] | 30.0d | 21-Mar-16 | 28-Apr-16 | | | |
| CPA_0190 | Site cleaning for Play Area reinstatement & Landscape works | 12.0d | 29-Apr-16 | 13-May-16 | | | |
| CPA_0200 | Reinstatement works for Plays Area | 66.0d | 16-May-16 | 02-Aug-16 | | | |
| CPA_0210 | Landscape works | 66.0d | 03-Aug-16 | 21-Oct-16 | | | |
| CPA_0220 | Hand over to LCSD, additional remedial if require | 48.0d | 22-Oct-16 | 16-Dec-16 | | | |
| **Johnston Road** | | | | | | | |
| JnR_0010 | All Sheet Piles on JnR & 1st layer mini piles below Tram track completed | 0.0d | | 09-Sep-15 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

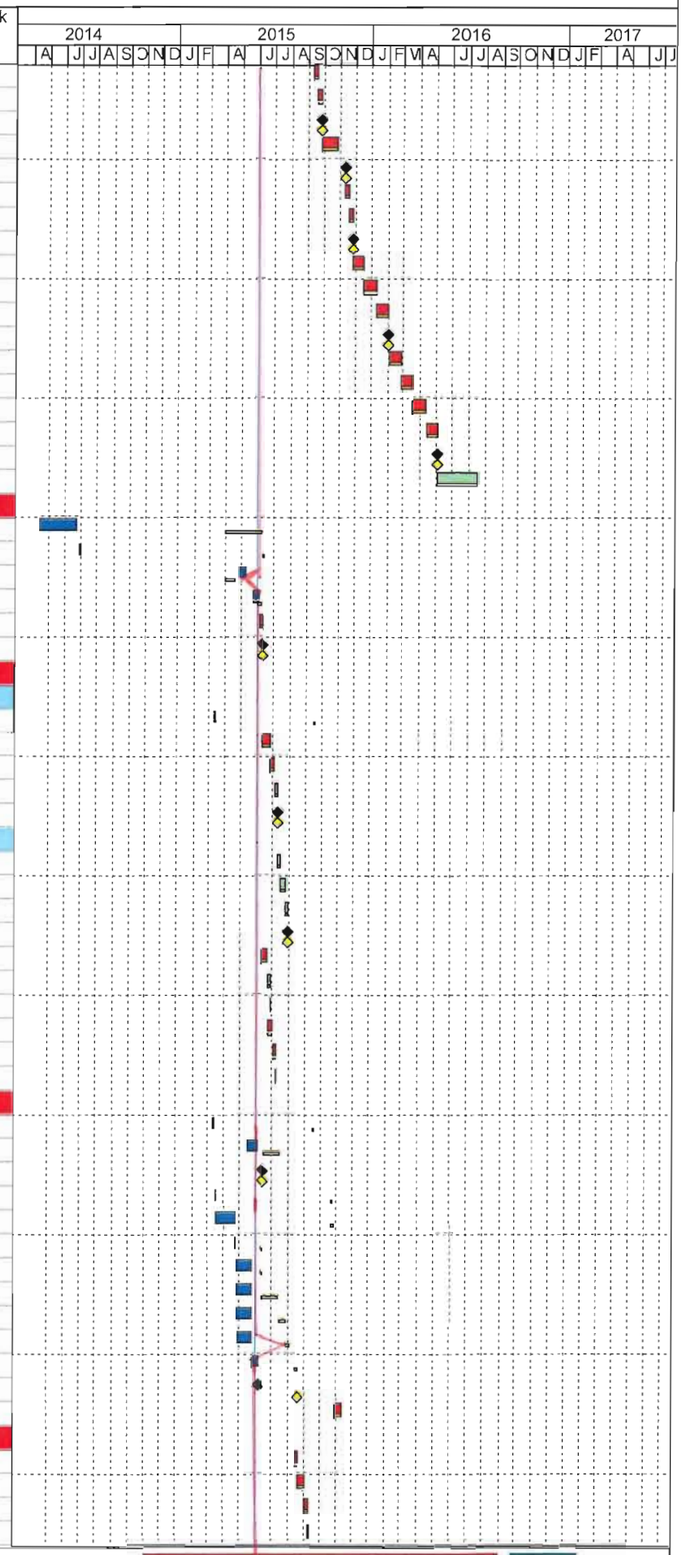
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| JnR_0020 | Phase 2 ELS- Pumping Test 1 for 1st layer | 6.0d | 10-Sep-15 | 16-Sep-15 | | | |
| JnR_0030 | Phase 2 ELS- Pumping Test Report for 1st layer Preparation and submission | 6.0d | 17-Sep-15 | 23-Sep-15 | | | |
| JnR_0040 | Phase 2 ELS- 1st layer Pumping Test completed & satisfied | 0.0d | | 23-Sep-15 | | | |
| JnR_0050 | Bulk excavation & layer 1 strut & preloading [570m^3] | 24.0d | 24-Sep-15 | 24-Oct-15 | | | |
| JnR_0060 | All grouting and sheet piles achieved to tot level in Johnston Road | 0.0d | | 07-Nov-15 | | | |
| JnR_0070 | Phase 2 ELS- Pumping Test 2 for whole ELS | 6.0d | 09-Nov-15 | 14-Nov-15 | | | |
| JnR_0080 | Phase 2 ELS- Pumping Test Report for whole ELS Preparation and submission | 6.0d | 16-Nov-15 | 21-Nov-15 | | | |
| JnR_0090 | Phase 2 ELS- Pumping test completed & satisfied | 0.0d | | 21-Nov-15 | | | |
| JnR_0100 | Bulk excavation & layer 2 strut & preloading [570m^3] | 18.0d | 23-Nov-15 | 12-Dec-15 | | | |
| JnR_0110 | Bulk excavation & layer 3 strut & preloading [570m^3] | 18.0d | 14-Dec-15 | 06-Jan-16 | | | |
| JnR_0120 | Bulk excavation & layer 4 strut & preloading [570m^3] | 21.0d | 07-Jan-16 | 30-Jan-16 | | | |
| JnR_0130 | Bulk excavation to formation level on JnR | 0.0d | | 30-Jan-16 | | | |
| JnR_0140 | Sump pit- Waterproofing & RC construction [Concrete 250m^3] & [Re-Bar 15 T] | 18.0d | 01-Feb-16 | 24-Feb-16 | | | |
| JnR_0150 | Base Slab- Waterproofing & RC construction [Concrete 265m^3] & [Re-Bar 16 T] | 17.0d | 25-Feb-16 | 15-Mar-16 | | | |
| JnR_0160 | Wall- Waterproofing & RC construction [Concrete 70m^3] & [Re-Bar 12.6 T] | 18.0d | 16-Mar-16 | 09-Apr-16 | | | |
| JnR_0170 | Top Slab- Waterproofing & RC construction [Concrete 125m^3] & [Re-Bar 29.6 T] | 18.0d | 11-Apr-16 | 30-Apr-16 | | | |
| JnR_0180 | RC structure completed on JnR | 0.0d | | 30-Apr-16 | | | |
| JnR_0190 | Removal of temporary traffic decking ,backfill & road reinstatement on JNR | 60.0d | 03-May-16 | 14-Jul-16 | | | |
| **Johnston Road North Footpath (TTM Stage 1, 2, 2A & 2B)** | | | | | | | |
| JnR.NFP_0010 | Liaison, review & acceptance for TTM Stage 1 | 54.0d | 14-Apr-14 | 21-Jun-14 | 14-Apr-14 | 21-Jun-14 | |
| JnR.NFP_0020 | Implementation of TTM Stage 1 | 3.0d | 28-Jun-14 | 02-Jul-14 | 28-Jun-14 | 02-Jul-14 | |
| JnR.NFP_0030 | Phase 2 ELS- Sheet Piles Installation [30no. x 24m] | 12.0d | 26-Jan-15 | 07-Feb-15 | 28-Apr-15 | 09-May-15 | |
| JnR.NFP_0040 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 6.0d | 09-Feb-15 | 14-Feb-15 | 23-May-15 | | |
| JnR.NFP_0050 | Installation of temporary traffic decking | 6.0d | 16-Feb-15 | 25-Feb-15 | | | |
| JnR.NFP_0060 | Sheet piles & Traffic decking completed on North Footpath for TTM Stage 3 | 0.0d | | 25-Feb-15 | | | |
| **Johnston Road Eastbound carriageway** | | | | | | | |
| **Johnston Road Eastbound carriageway North Side (TTM Stage 3)** | | | | | | | |
| JnR.EBC.NS_0010 | Implementation of TTM 3 | 3.0d | 30-Mar-15 | 01-Apr-15 | 13-Mar-15 | 14-Mar-15 | |
| JnR.EBC.NS_0020 | Phase 2 ELS- Sheet Piles Installation [25no. x 24m] | 12.0d | 02-Apr-15 | 20-Apr-15 | | | |
| JnR.EBC.NS_0030 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 6.0d | 21-Apr-15 | 27-Apr-15 | | | |
| JnR.EBC.NS_0040 | Installation of temporary traffic decking | 6.0d | 28-Apr-15 | 05-May-15 | | | |
| JnR.EBC.NS_0050 | Sheet Piles & Traffic decking completed on Eastbound Carriageway North Side for TTM Stage 4 | 0.0d | | 05-May-15 | | | |
| **Johnston Road Eastbound carriageway South Side (TTM Stage 4 & 5)** | | | | | | | |
| JnR.EBC.SS_0010 | Implementation of TTM 4 | 3.0d | 09-Jul-15 | 11-Jul-15 | | | |
| JnR.EBC.SS_0020 | Phase 2 ELS- Sheet Piles Installation [33no. x 24m] | 9.0d | 13-Jul-15 | 22-Jul-15 | | | |
| JnR.EBC.SS_0030 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 6.0d | 23-Jul-15 | 29-Jul-15 | | | |
| JnR.EBC.SS_0040 | Sheet pile completed on Eastbound Carriageway South Side | 0.0d | | 29-Jul-15 | | | |
| JnR.EBC.SS_0050 | Coring for minipile No. 1 to reach -56mPD [60m] | 8.0d | 02-Apr-15 | 15-Apr-15 | | | |
| JnR.EBC.SS_0060 | Installation of Re-Bar for minipile No.1 [4x 60m T50, 3.7Ton] | 5.0d | 16-Apr-15 | 21-Apr-15 | | | |
| JnR.EBC.SS_0070 | Groutiong for minipile No.1 | 1.0d | 22-Apr-15 | 22-Apr-15 | | | |
| JnR.EBC.SS_0080 | Coring for minipile No. 2 to reach -56mPD [60m] | 8.0d | 16-Apr-15 | 24-Apr-15 | | | |
| JnR.EBC.SS_0090 | Installation of Re-Bar for minipile No.2 [4x 60m T50, 3.7Ton] | 5.0d | 25-Apr-15 | 30-Apr-15 | | | |
| JnR.EBC.SS_0100 | Groutiong for minipile No.2 | 1.0d | 02-May-15 | 02-May-15 | | | |
| **Johnston Road Tram Tracks (TTM Stage 3)** | | | | | | | |
| JnR.TT_0010 | Implementation of TTM 3 | 3.0d | 30-Mar-15 | 01-Apr-15 | 13-Mar-15 | 14-Mar-15 | |
| JnR.TT_0030 | 1st layer grouting below tram track (NTH) to -6mPD 28no. 800mm C/C [NTH] | 24.0d | 02-Apr-15 | 05-May-15 | 15-May-15 | 04-Jun-15 | |
| JnR.TT_0040 | 1st layer of mini piles below tram tracks completed | 0.0d | | 05-May-15 | | | |
| JnR.TT_0050 | Expose concrete surface by Tramsway Sub-Con | 3.0d | 06-May-15 | 08-May-15 | 16-Mar-15 | 18-Mar-15 | |
| JnR.TT_0060 | Installation of Steel Beam | 4.0d | 06-May-15 | 09-May-15 | 18-Mar-15 | 24-Apr-15 | |
| JnR.TT_0070 | Leveling of steel Beam by Tramsway Sub-Con (NTH) | 4.0d | 06-May-15 | 09-May-15 | 24-Apr-15 | 24-Apr-15 | |
| JnR.TT_0080 | Installation of temporary steel decking on tram track | 4.0d | 06-May-15 | 09-May-15 | 25-Apr-15 | 23-May-15 | |
| JnR.TT_0090 | Expose concrete/ fill below tram track [60m^3] | 24.0d | 11-May-15 | 08-Jun-15 | 25-Apr-15 | 23-May-15 | |
| JnR.TT_0100 | Installation of Re-bars [Re-Bars 7.6T] | 12.0d | 09-Jun-15 | 23-Jun-15 | 27-Apr-15 | 23-May-15 | |
| JnR.TT_0110 | Concreting for concrete decking below tram track [Concrete 60m^3] | 6.0d | 24-Jun-15 | 30-Jun-15 | 28-Apr-15 | 23-May-15 | |
| JnR.TT_0120 | Reinstate the tram track surface | 6.0d | 02-Jul-15 | 08-Jul-15 | 25-May-15 | 06-Jun-15 | |
| JnR.TT_0130 | Tram track concrete decking & reinstatement works completed ready for Implementation of TTM Stage 4 | 0.0d | | 08-Jul-15 | | 06-Jun-15 | |
| JnR.TT_0140 | 2nd layer grouting and pipe piles below tram track to -17mPD (16m) 50no. x 324mm dia. 450mm C/C (2 machine) | 12.0d | 26-Oct-15 | 07-Nov-15 | | | |
| **Johnston Road Westbound carriageway (TTM Stage 5)** | | | | | | | |
| JnR.WBC_0010 | Implementation of TTM Stage 5 | 3.0d | 13-Aug-15 | 15-Aug-15 | | | |
| JnR.WBC_0020 | Trial Trench | 12.0d | 17-Aug-15 | 29-Aug-15 | | | |
| JnR.WBC_0030 | Phase 2 ELS- Sheet Piles Installation [20no. x 24m] | 6.0d | 31-Aug-15 | 05-Sep-15 | | | |
| JnR.WBC_0040 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 3.0d | 07-Sep-15 | 09-Sep-15 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

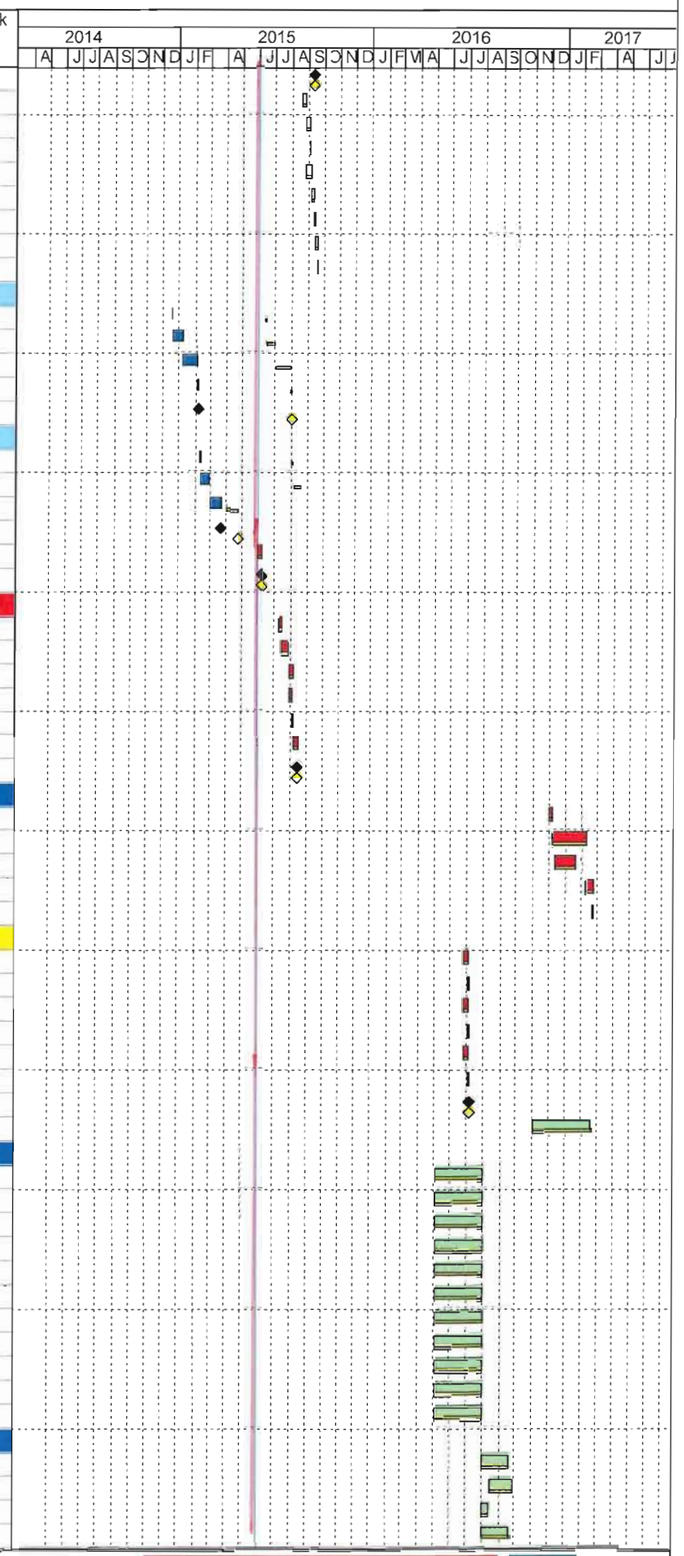
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| JnR.WBC_0050 | Sheet piles completed on Westbound carriageway | 0.0d | | 09-Sep-15 | | | |
| JnR.WBC_0060 | Coring for minipile No. 3 to reach -56mPD [60m] | 8.0d | 17-Aug-15 | 25-Aug-15 | | | |
| JnR.WBC_0070 | Installation of Re-Bar for minipile No.3 [4x 60m T50, 3.7Ton] | 5.0d | 26-Aug-15 | 31-Aug-15 | | | |
| JnR.WBC_0080 | Groutiong for minipile No.3 | 1.0d | 01-Sep-15 | 01-Sep-15 | | | |
| JnR.WBC_0090 | Coring for minipile No. 4 to reach -56mPD [60m] | 8.0d | 26-Aug-15 | 03-Sep-15 | | | |
| JnR.WBC_0100 | Installation of Re-Bar for minipile No.4 [4x 60m T50, 3.7Ton] | 5.0d | 04-Sep-15 | 09-Sep-15 | | | |
| JnR.WBC_0110 | Grouting for minipile No.4 | 1.0d | 10-Sep-15 | 10-Sep-15 | | | |
| JnR.WBC_0120 | Re-Bar Installation for minipile location | 4.0d | 11-Sep-15 | 15-Sep-15 | | | |
| JnR.WBC_0130 | Cast Concrete minipile location | 2.0d | 16-Sep-15 | 17-Sep-15 | | | |
| **Johnston Road Westbound carriageway East Side (TTM Stage 2A)** | | | | | | | |
| JnR.WBC.ES_0010 | Implementation of TTM Stage 2A | 3.0d | 18-Dec-14 | 20-Dec-14 | 18-Dec-14 | 20-Dec-14 | |
| JnR.WBC.ES_0020 | Expose UU | 12.0d | 22-Dec-14 | 07-Jan-15 | 22-Dec-14 | 07-Jan-15 | |
| JnR.WBC.ES_0030 | UU diversion on JnR Westbound Carriageway East Side | 24.0d | 08-Jan-15 | 04-Feb-15 | 08-Jan-15 | 04-Feb-15 | |
| JnR.WBC.ES_0040 | Installation of temporary traffic decking | 3.0d | 05-Feb-15 | 07-Feb-15 | 05-Feb-15 | 07-Feb-15 | |
| JnR.WBC.ES_0050 | Traffic decking completed on Westbound Carriageway East Side for TTM Stage 2B | 0.0d | | 07-Feb-15 | | 07-Feb-15 | |
| **Johnston Road Westbound carriageway West Side (TTM Stage 2B)** | | | | | | | |
| JnR.WBC.WS_0010 | Implementation of TTM Stage 2B | 3.0d | 09-Feb-15 | 11-Feb-15 | 09-Feb-15 | 11-Feb-15 | |
| JnR.WBC.WS_0020 | Expose UU | 12.0d | 12-Feb-15 | 28-Feb-15 | 12-Feb-15 | 28-Feb-15 | |
| JnR.WBC.WS_0030 | UU diversion on JnR Westbound Carriageway West Side | 18.0d | 02-Mar-15 | 21-Mar-15 | 02-Mar-15 | 21-Mar-15 | |
| JnR.WBC.WS_0040 | UU diversion on JnR Westbound Carriageway Completed | 0.0d | | 21-Mar-15 | | 21-Mar-15 | |
| JnR.WBC.WS_0050 | Installation of temporary traffic decking | 6.0d | 23-Mar-15 | 28-Mar-15 | | | |
| JnR.WBC.WS_0060 | Traffic decking completed on Westbound Carriageway West Side for TTM Stage 3 | 0.0d | | 28-Mar-15 | | | |
| **Johnston Road South Footpath (TTM 4)** | | | | | | | |
| JnR.SFP_0010 | Implementation of TTM 4 | 3.0d | 09-Jul-15 | 11-Jul-15 | | | |
| JnR.SFP_0020 | Expose UU | 12.0d | 13-Jul-15 | 25-Jul-15 | | | |
| JnR.SFP_0030 | UU diversion | 9.0d | 27-Jul-15 | 05-Aug-15 | | | |
| JnR.SFP_0040 | Phase 2 ELS- Sheet Piles Installation [15no. x 24m] | 6.0d | 27-Jul-15 | 01-Aug-15 | | | |
| JnR.SFP_0050 | Curtain Grouting and remedial works for sheet piles not reaching to design toe level | 3.0d | 03-Aug-15 | 05-Aug-15 | | | |
| JnR.SFP_0060 | Installation of Temporary Traffic decking | 6.0d | 06-Aug-15 | 12-Aug-15 | | | |
| JnR.SFP_0070 | Sheet Piles & Traffic decking completed on South Footpath for TTM Stage 5 | 0.0d | | 12-Aug-15 | | | |
| **H15 Break Through Works** | | | | | | | |
| H15_0010 | Installation protection measurement for break through | 3.0d | 13-May-16 | 17-May-16 | | | |
| H15_0020 | Breaking out to H15 - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m x 1m blocks | 48.0d | 18-May-16 | 14-Jul-16 | | | |
| H15_0030 | Breaking out to H15 - Installation of temporary steel proping | 30.0d | 24-May-16 | 28-Jun-16 | | | |
| H15_0040 | Breaking out to H15 - Construct the portal frame | 12.0d | 15-Jul-16 | 28-Jul-16 | | | |
| H15_0050 | Demolish the propping steel members | 2.0d | 29-Jul-16 | 30-Jul-16 | | | |
| **Cost Centre B: Part A Works, ABWF Works for the New Subway** | | | | | | | |
| ABWF_0010 | Preparation works for Fire Shutter on GL-L | 6.0d | 03-May-16 | 09-May-16 | | | |
| ABWF_0020 | Installation of Fire Shutter on GL-L | 3.0d | 10-May-16 | 12-May-16 | | | |
| ABWF_0030 | Preparation works for Security Shutter on GL-L | 6.0d | 03-May-16 | 09-May-16 | | | |
| ABWF_0040 | Installation of Security Shutter on GL-L | 3.0d | 10-May-16 | 12-May-16 | | | |
| ABWF_0050 | Preparation works for Flood Gate on GL-L | 6.0d | 03-May-16 | 09-May-16 | | | |
| ABWF_0060 | Installation for Flood Gate on GL-L | 3.0d | 10-May-16 | 12-May-16 | | | |
| ABWF_0070 | Completion of Flood Gate, Fire Shutter & Security Shutter on GL-L | 0.0d | | 12-May-16 | | | |
| ABWF_0080 | Remaining ABWF, finishing & Site cleaning works | 90.0d | 28-Oct-16 | 16-Feb-17 | | | |
| **ABWF Works - Degree 1** | | | | | | | |
| ABWF.D1_0010 | Site Cleaning & dry the internal of Structure & building | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0020 | Installation of blockwalls & partition wall except on plant access route | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0030 | Apply Plastering, undercoat, painting, floor screeding including plinths and upstands | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0040 | Forming equipment delivery routes and access openings for DC or Interface Contractors | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0050 | Install Cast-in items, subframe; Form niches, recesses & box outs; Install cable troughs, ducts & risers | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0060 | Preparation, submission and approval of Structure as-built survey | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0070 | Form Structural & blockwork E&M openings & preparation of survey | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0080 | Installation of movement joints & stitch strips | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0090 | Form escalator zones & pits complete; survey reference lines for acceptance | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0100 | Installation of Earthing mat, earthing rods & earthing pits, test & acceptance | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| ABWF.D1_0110 | Installation of underground pipe work including manholes, ductworks & drawpits | 72.0d | 03-May-16 | 28-Jul-16 | | | |
| **ABWF Works - Degree 2** | | | | | | | |
| ABWF.D2_0010 | Permanent door frames installed with temporary doors & locks | 42.0d | 29-Jul-16 | 15-Sep-16 | | | |
| ABWF.D2_0020 | Installation of Floor finishes & wall tilling in plant rooms for Designated Contractors | 36.0d | 12-Aug-16 | 23-Sep-16 | | | |
| ABWF.D2_0030 | Install Glazing & Balustrade support | 12.0d | 29-Jul-16 | 11-Aug-16 | | | |
| ABWF.D2_0040 | Install Metal staircases, cat-ladders & catwalks | 42.0d | 29-Jul-16 | 15-Sep-16 | | | |




Actual Level of Effort
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Actual Work
Remaining Work
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Milestone

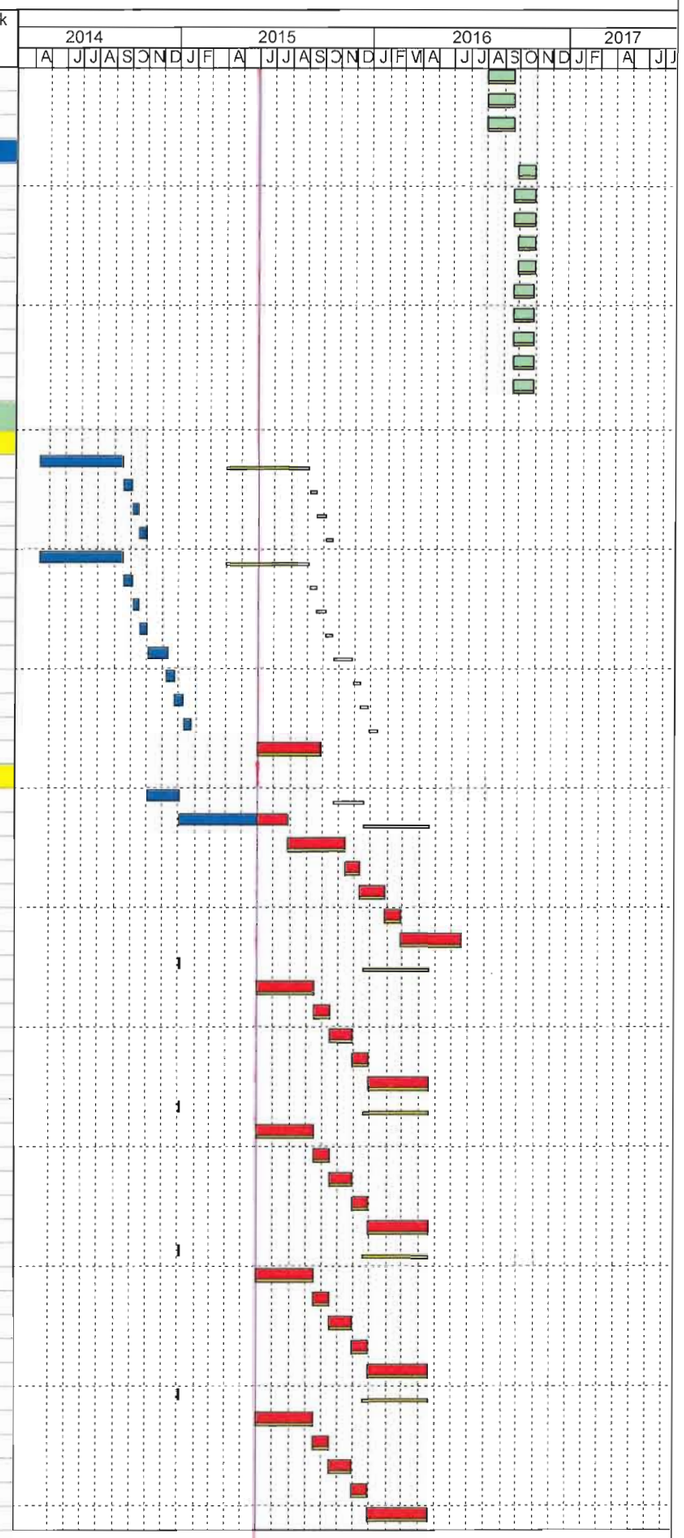
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| ABWF.D2_0050 | Install External louvers | 42.0d | 29-Jul-16 | 15-Sep-16 | | | |
| ABWF.D2_0060 | Install Framework for final finishes | 42.0d | 29-Jul-16 | 15-Sep-16 | | | |
| ABWF.D2_0070 | Water tightness testing to water tanks & acceptance | 42.0d | 29-Jul-16 | 15-Sep-16 | | | |
| **ABWF Works - Degree 3** | | | | | | | |
| ABWF.D3_0010 | Inatall & apply all remaining finishes including permanent doors, ironmongery | 27.0d | 24-Sep-16 | 27-Oct-16 | | | |
| ABWF.D3_0011 | Installation of VE Panel [591m^2] | 33.0d | 17-Sep-16 | 27-Oct-16 | | | |
| ABWF.D3_0012 | Installation of Ceiling Panel [565 m^2] | 33.0d | 17-Sep-16 | 27-Oct-16 | | | |
| ABWF.D3_0013 | Installation of floor finishing [565 m^2] | 27.0d | 24-Sep-16 | 27-Oct-16 | | | |
| ABWF.D3_0020 | Install Balustrade | 27.0d | 24-Sep-16 | 27-Oct-16 | | | |
| ABWF.D3_0030 | Install Signage hangers & supports | 30.0d | 17-Sep-16 | 24-Oct-16 | | | |
| ABWF.D3_0040 | Install smoke barriers | 30.0d | 17-Sep-16 | 24-Oct-16 | | | |
| ABWF.D3_0050 | Apply Acoustic treatment | 30.0d | 17-Sep-16 | 24-Oct-16 | | | |
| ABWF.D3_0060 | Install Louvres & grilles | 30.0d | 17-Sep-16 | 24-Oct-16 | | | |
| ABWF.D3_0070 | Seal All openings & Penetrations | 30.0d | 17-Sep-16 | 24-Oct-16 | | | |
| **C: Building Services** | | | | | | | |
| **Design, Shop Drawings, Materials & Equipments Submission and Approval** | | | | | | | |
| BS.DS_0010 | BS Works- Preparation and submission for detailed design of BS works | 128.0d | 14-Apr-14 | 18-Sep-14 | 14-Apr-14 | 18-Sep-14 | |
| BS.DS_0020 | BS Works- Review and approval for detailed design of BS works | 12.0d | 19-Sep-14 | 04-Oct-14 | 19-Sep-14 | 04-Oct-14 | |
| BS.DS_0030 | BS Works- Preparation and re-submission for detailed design of BS works (If require) | 12.0d | 06-Oct-14 | 18-Oct-14 | 06-Oct-14 | 18-Oct-14 | |
| BS.DS_0040 | BS Works- Review and approval for detailed design of BS works (If require) | 12.0d | 20-Oct-14 | 01-Nov-14 | 20-Oct-14 | 01-Nov-14 | |
| BS.DS_0050 | BS Works- Contractor prepare & submit the propose suppliers & model types of major BS equipment & materials | 128.0d | 14-Apr-14 | 18-Sep-14 | 14-Apr-14 | 18-Sep-14 | |
| BS.DS_0060 | BS Works- Review & approval the propose suppliers & model types of major BS equipment & materials | 12.0d | 19-Sep-14 | 04-Oct-14 | 19-Sep-14 | 04-Oct-14 | |
| BS.DS_0070 | BS Works- Contractor prepare & re-submit propose suppliers & model types of major BS equipment & materials (If requie) | 12.0d | 06-Oct-14 | 18-Oct-14 | 06-Oct-14 | 18-Oct-14 | |
| BS.DS_0080 | BS Works- Review the propose suppliers & model types of major BS equipment & materials (If requie) | 12.0d | 20-Oct-14 | 01-Nov-14 | 20-Oct-14 | 01-Nov-14 | |
| BS.DS_0090 | BS Works- Preparation and submission of BS shop drawings | 32.0d | 03-Nov-14 | 09-Dec-14 | 03-Nov-14 | 09-Dec-14 | |
| BS.DS_0100 | BS Works- Review and approval of BS shop drawings | 12.0d | 10-Dec-14 | 23-Dec-14 | 10-Dec-14 | 23-Dec-14 | |
| BS.DS_0110 | BS Works- Preparation and re-submission of BS shop drawings (If require) | 12.0d | 24-Dec-14 | 09-Jan-15 | 24-Dec-14 | 09-Jan-15 | |
| BS.DS_0120 | BS Works- Review and approval of BS shop drawings (If require) | 12.0d | 10-Jan-15 | 23-Jan-15 | 10-Jan-15 | 23-Jan-15 | |
| BS.DS_0130 | Exchange of Design Information with Designated and Interfacing Contractors | 100.0d | 24-Jan-15 | 30-May-15 | | | |
| **Procurement and Delivery of Materials and Equipments** | | | | | | | |
| BS.PD_0010 | All Major building service equipments & materials - Manufacture & fabrication - Procurement | 50.0d | 03-Nov-14 | 02-Jan-15 | 03-Nov-14 | 02-Jan-15 | |
| BS.PD_0020 | Others Major building service equipments & materials - Place order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | | |
| BS.PD_0030 | Others Major building service equipments & materials - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0040 | Others Major building service equipments & materials - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0050 | Others Major building service equipments & materials - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0060 | Others Major building service equipments & materials - Factory acceptance (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0070 | Others Major building service equipments & materials - Delivery to site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |
| BS.PD_0080 | Air Handling Unit - Place Order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | 05-Jan-15 | |
| BS.PD_0090 | Air Handling Unit - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0100 | Air Handling Unit - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0110 | Air Handling Unit - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0120 | Air Handling Unit - Factory acceptance testing (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0130 | Air Handling Unit - Delivery to site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |
| BS.PD_0140 | In-line Centrifugal Fan - Place Order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | 05-Jan-15 | |
| BS.PD_0150 | In-line Centrifugal Fan - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0160 | In-line Centrifugal Fan - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0170 | In-line Centrifugal Fan - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0180 | In-line Centrifugal Fan - Factory acceptance testing (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0190 | In-line Centrifugal Fan - Delivery to Site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |
| BS.PD_0200 | Smoke Extraction Fan - Place Order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | 05-Jan-15 | |
| BS.PD_0210 | Smoke Extraction Fan - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0220 | Smoke Extraction Fan - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0230 | Smoke Extraction Fan - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0240 | Smoke Extraction Fan - Factory acceptance testing (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0250 | Smoke Extraction Fan - Delivery to site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |
| BS.PD_0260 | Fan Coil Unit - Place order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | 05-Jan-15 | |
| BS.PD_0270 | Fan Coil Unit - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0280 | Fan Coil Unit - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0290 | Fan Coil Unit - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0300 | Fan Coil Unit - Factory acceptance testing (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0310 | Fan Coil Unit - Delivery to site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
◇ Baseline Milestone
◆ Milestone

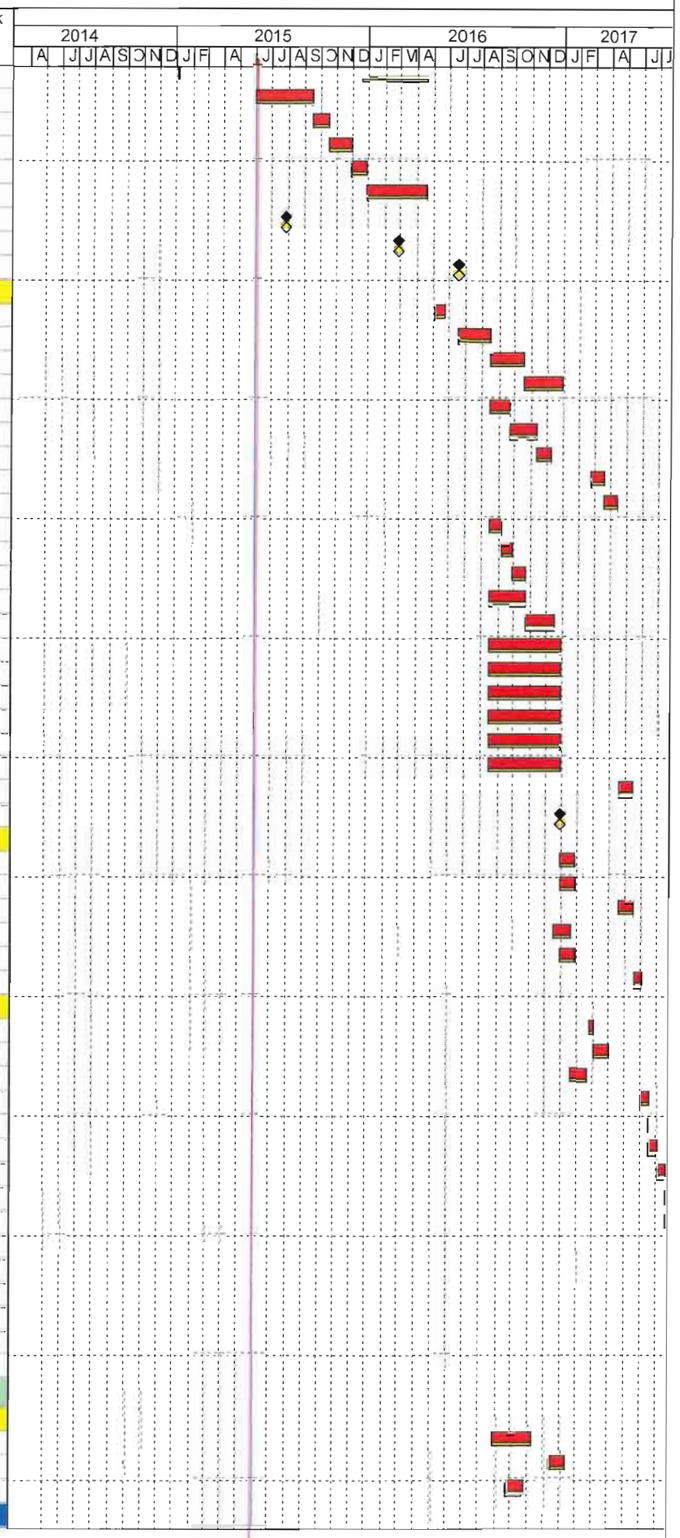
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**

***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| BS.PD_0320 | Motorized Smoke & Fire damper - Place order | 95.0d | 03-Jan-15 | 02-May-15 | 03-Jan-15 | 05-Jan-15 | |
| BS.PD_0330 | Motorized Smoke & Fire damper - Manufacture & fabrication | 90.0d | 04-May-15 | 19-Aug-15 | | | |
| BS.PD_0340 | Motorized Smoke & Fire damper - Factory acceptance testing | 24.0d | 20-Aug-15 | 16-Sep-15 | | | |
| BS.PD_0350 | Motorized Smoke & Fire damper - Remedial works (If require) | 36.0d | 17-Sep-15 | 31-Oct-15 | | | |
| BS.PD_0360 | Motorized Smoke & Fire damper - Factory acceptance testing (If require) | 24.0d | 02-Nov-15 | 28-Nov-15 | | | |
| BS.PD_0370 | Motorized Smoke & Fire damper - Delivery to site/ ECS Room | 90.0d | 30-Nov-15 | 19-Mar-16 | | | |
| BS.PD_0380 | All Major equipment BS equipment & materials - Completed placing orders | 0.0d | | 02-May-15 | | | |
| BS.PD_0390 | All Major equipment BS equipment & materials - Completed all factory acceptance testing | 0.0d | | 28-Nov-15 | | | |
| BS.PD_0400 | All Major equipment BS equipment & materials - Completed delivery to ECS room | 0.0d | | 19-Mar-16 | | | |
| **Installation of Building Services** | | | | | | | |
| BS.I_0009 | Installation of trucking, cable for the whole subway linking between H15 and WAC station | 17.0d | 03-May-16 | 23-May-16 | | | |
| BS.I_0010 | Electrical - Within Stn, Distribution equip. 16 nr, cable tray & trunk 420m, lighting fitting 81nr, earthing tape 276m | 49.0d | 21-Mar-16 | 23-May-16 | | | |
| BS.I_0020 | Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr, connection(1) | 50.0d | 24-May-16 | 22-Jul-16 | | | |
| BS.I_0030 | Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr, connection(2) | 60.0d | 23-Jul-16 | 03-Oct-16 | | | |
| BS.I_0040 | ECS - Within WAC Stn, Grille 6 nr, air duct 115m2, damper 7 nr. | 30.0d | 24-May-16 | 28-Jun-16 | | | |
| BS.I_0050 | ECS - Subway, Pipe/insul.75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, damper 36nr, control 4nr, etc. (1st) | 42.0d | 29-Jun-16 | 17-Aug-16 | | | |
| BS.I_0060 | ECS - Subway, Pipe/insul.75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, damper 36nr, control 4nr, etc. (2nd) | 24.0d | 18-Aug-16 | 14-Sep-16 | | | |
| BS.I_0070 | FS Works - Within H15, Pipe 59m, dectector 7 nr, hose reel 1 nr | 21.0d | 01-Aug-16 | 24-Aug-16 | | | |
| BS.I_0080 | FS Works - Subway, Pipe 155m, valve 2 nr, detectors 38 nr, hose reel 1 nr, fire extinguisher 4 nr, connection, etc. | 21.0d | 25-Aug-16 | 19-Sep-16 | | | |
| BS.I_0090 | Drainage System - Waste - Existing WSC Stn, 35 m pipe, 2 valve, 4 pit, 1 switch/ control panel, 1 power supply system | 18.0d | 24-May-16 | 14-Jun-16 | | | |
| BS.I_0100 | Drainage System - Waste - Subway, Pipe DI/CI 257+18m, 7 joint, 6 OTC | 18.0d | 15-Jun-16 | 06-Jul-16 | | | |
| BS.I_0110 | Drainage System - Rainwater Discharge, CI pipe, 8+18m above/below ground, 2 manholes | 18.0d | 07-Jul-16 | 27-Jul-16 | | | |
| BS.I_0120 | Cleansing Water System - Within WAC Station, 137m copper pipe, 3 gate valve, 2 stopcock, 2 water meter | 54.0d | 24-May-16 | 27-Jul-16 | | | |
| BS.I_0130 | Cleansing Water System - Subway, 87m copper pipe, 1 gate valve, 1 joint | 48.0d | 28-Jul-16 | 22-Sep-16 | | | |
| BS.I_0140 | Installation of Air Handling Unit | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0150 | Installation of In-line Centrifugal Fan | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0160 | Installation of Smoke Extraction Fan | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0170 | Installation of Fan Coil Unit | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0180 | Installation of Motorized Smoke & Fire damper | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0190 | Installation & integration of control system | 110.0d | 24-May-16 | 03-Oct-16 | | | |
| BS.I_0200 | Remaining BS Works | 21.0d | 04-Oct-16 | 28-Oct-16 | | | |
| INF.SAMSp | Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'16) | 0.0d | | 03-Oct-16 | | | |
| **Testing and Commissioning** | | | | | | | |
| BS.TC_0010 | T&C ECS - Tests on Ventilation Fans, Air Balancing, Equipment & System, Control, Noise & Sound, etc. | 24.0d | 04-Oct-16 | 01-Nov-16 | | | |
| BS.TC_0020 | T&C - SAT of HV Sw Boards/ TX, LV Sw Boards & MCC, Lighting Control, etc. | 24.0d | 04-Oct-16 | 01-Nov-16 | | | |
| BS.TC_0030 | T&C Fire Services - Performance Test/ FH & HR System/ Auto Fire Alam System | 24.0d | 04-Oct-16 | 01-Nov-16 | | | |
| BS.TC_0040 | T&C Plumbing and Drainage - P&D Pumps, Control System | 24.0d | 23-Sep-16 | 22-Oct-16 | | | |
| BS.TC_0050 | T&C ELV System - Contol Systems | 24.0d | 04-Oct-16 | 01-Nov-16 | | | |
| FSI | FSI - Integrated Test | 11.0d | 02-Nov-16 | 14-Nov-16 | | | |
| **Statutory Inspection and Approval** | | | | | | | |
| BS.SIA_0010 | Submit BA14 for completion of breakthrough | 6.0d | 01-Aug-16 | 06-Aug-16 | | | |
| BS.SIA_0020 | BD's acknowledgementletter obtained | 24.0d | 08-Aug-16 | 03-Sep-16 | | | |
| BS.SIA_0030 | DSD/ WSD Inspection and Connection | 24.0d | 24-Oct-16 | 19-Nov-16 | | | |
| BS.SIA_0040 | Connection for electricity | 12.0d | 15-Nov-16 | 28-Nov-16 | | | |
| BS.SIA_0050 | Submit Form 1 and Form 2 | 1.0d | 29-Nov-16 | 29-Nov-16 | | | |
| BS.SIA_0060 | FS Inpection / Re-inspection | 12.0d | 30-Nov-16 | 13-Dec-16 | | | |
| BS.SIA_0070 | FS Defect Rectification and Approval | 12.0d | 15-Dec-16 | 30-Dec-16 | | | |
| BS.SIA_0080 | Form 3 Obtained | 1.0d | 31-Dec-16 | 31-Dec-16 | | | |
| BS.SIA_0090 | BD Inpection/ Re-inspection | 6.0d | 03-Jan-17 | 09-Jan-17 | | | |
| BS.SIA_0100 | EMSD-RB Pre-Inspection by MTRC Ops Team | 1.0d | 10-Jan-17 | 10-Jan-17 | | | |
| BS.SIA_0110 | Remedial Works | 24.0d | 11-Jan-17 | 10-Feb-17 | | | |
| BS.SIA_0120 | EMSD-RB Formal Inspection | 1.0d | 11-Feb-17 | 11-Feb-17 | | | |
| BS.SIA_0130 | Remedial Works & Re-Inspection (If Require) | 6.0d | 13-Feb-17 | 18-Feb-17 | | | |
| BS.SIA_0140 | EMSD Letter of "No Objection" Obtained/ Ready to Open | 6.0d | 20-Feb-17 | 25-Feb-17 | | | |
| BS.SIA_Comp | Complete & pass all statutory, joint Inspection & handover to Operation Team for the BS of new Subway- Programmed | 0.0d | | 25-Feb-17 | | | |
| **D: WAC Modification Works (Part B Works)** | | | | | | | |
| **WAC Station Modification Works** | | | | | | | |
| WMW_0010 | Install New Telephone Booth and associated works (NTH) | 60.0d | 12-Oct-15 | 21-Dec-15 | | | |
| WMW_0020 | Relocate 4 Advertising Panels (NTH) | 21.0d | 29-Jan-16 | 25-Feb-16 | | | |
| WMW_0030 | Finishing, Remedial works & site cleaning | 24.0d | 01-Aug-16 | 27-Aug-16 | | | |
| **AFC Audit Room** | | | | | | | |



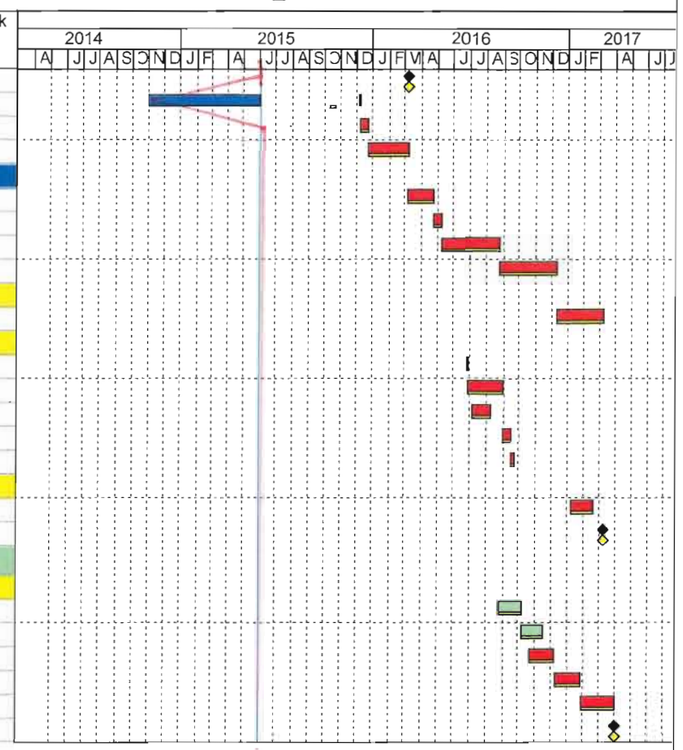

Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
Baseline Milestone
Milestone

**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**
***Preliminary Master Program (Rev.C)***

Progress vs Program

Kaden 基利

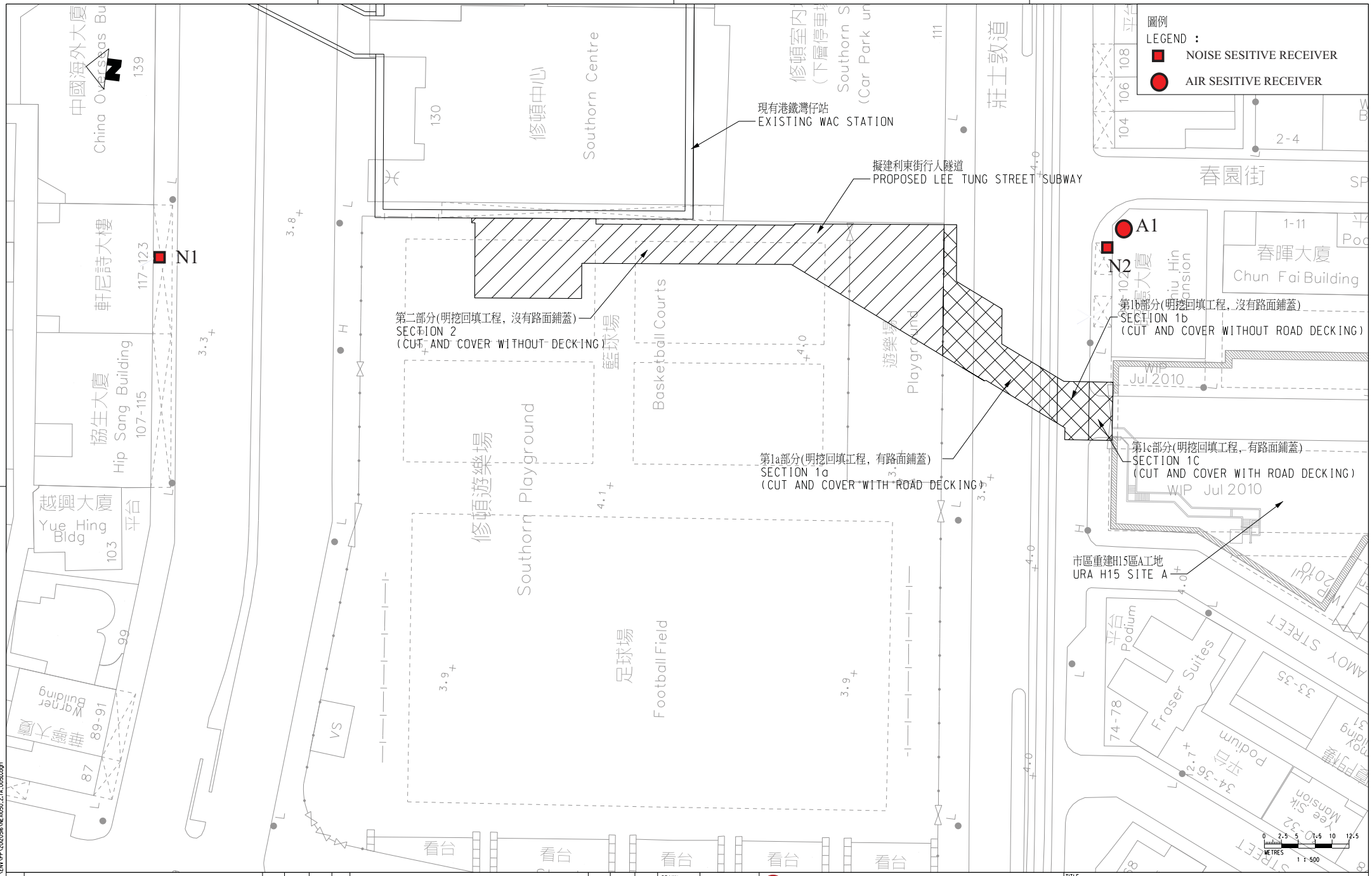
| Activity ID | Activity Name | Original Duration | BL Project Start | BL Project Finish | Actual Start | Actual Finish | Remark |
|---|---|---|---|---|---|---|---|
| INF.AFCp | Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Level (3-May'15) | 0.0d | | 25-Apr-15 | | | |
| WMW.AFC_0010 | Preparation works for works in WAC station | 10.0d | 13-Jan-15 | 23-Jan-15 | 01-Nov-14 | | |
| WMW.AFC_0020 | Internal Hoarding in WAC station (NTH) | 12.0d | 24-Jan-15 | 06-Feb-15 | | | |
| WMW.AFC_0030 | Construct new AFC/Audit Room next to Entrance B1, B2, ABWF & BS Works (NTH) | 60.0d | 07-Feb-15 | 25-Apr-15 | | | |
| **Existing AFC Aduit Room, Maxim's & Circle K Kiosks** | | | | | | | |
| WMW.K_0010 | Liaison with MTR/ relevance parties for modification works of existing Kiosks & Audit Room | 36.0d | 27-Apr-15 | 09-Jun-15 | | | |
| WMW.K_0020 | Internal Hoarding in WAC station (NTH) | 12.0d | 10-Jun-15 | 24-Jun-15 | | | |
| WMW.K_0030 | Modification Works to existing AFC/Audit, Store & Kiosk 3 & 5 (NTH) | 90.0d | 25-Jun-15 | 10-Oct-15 | | | |
| WMW.K_0040 | Modification to existing Kiosk 2 (NTH) | 90.0d | 12-Oct-15 | 28-Jan-16 | | | |
| **ABWF Works & Misc Works** | | | | | | | |
| WMW.ABWF_0010 | ABWF - Plaster & titling 29 m2, baffling ceiling 10 m2, metal cladding 9 m2 | 70.0d | 29-Jan-16 | 27-Apr-16 | | | |
| **Breaking Out WAC Station** | | | | | | | |
| WMW.BO_0010 | Installation protection measurement for break through | 2.0d | 03-May-16 | 04-May-16 | | | |
| WMW.BO_0020 | Breaking out WAC Station - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m x 1m blocks | 54.0d | 05-May-16 | 09-Jul-16 | | | |
| WMW.BO_0030 | Breaking out WAC Station - Installation of temporary steel proping | 30.0d | 11-May-16 | 16-Jun-16 | | | |
| WMW.BO_0040 | Breaking out WAC Station - Construct the portal frame | 12.0d | 11-Jul-16 | 23-Jul-16 | | | |
| WMW.BO_0050 | Demolish the propping steel members | 6.0d | 25-Jul-16 | 30-Jul-16 | | | |
| **Testing and Commissioning** | | | | | | | |
| WMW.C_0010 | Testing and Commissioning | 30.0d | 26-Feb-16 | 05-Apr-16 | | | |
| WMW.K_Comp | Specified Part 2B - Complete all works at the 2 new Shop Kiosks and hand over to the Employer - Programmed | 0.0d | | 27-Apr-16 | | | |
| **E. WAC Station Imporvement Works (Part C Works)** | | | | | | | |
| **Improvement Works to WAC Station** | | | | | | | |
| WIW_0010 | Modify, provide & install new glass barrier to suit new AFC gates (NTH) | 34.0d | 12-Oct-15 | 20-Nov-15 | | | |
| WIW_0020 | Provide and install additional AFC gates (NTH) | 34.0d | 21-Nov-15 | 02-Jan-16 | | | |
| WIW_0030 | Provide builder works for TIMS relocation (NTH) | 40.0d | 29-Aug-16 | 17-Oct-16 | | | |
| WIW_0040 | T&C by Designated Contractor for TIMS (NTH) | 40.0d | 18-Oct-16 | 02-Dec-16 | | | |
| WIW_0050 | Make Good builder works for TIMS (NTH) | 53.0d | 03-Dec-16 | 09-Feb-17 | | | |
| WIW_Comp | E3- All works in milestone E completed - Programmed | 0.0d | | 09-Feb-17 | | | |




Actual Level of Effort
Primary Baseline
Actual Work
Remaining Work
Critical Remaining Work
◇ Baseline Milestone
◆ Milestone

# Appendix C

# Monitoring Locations




| REV | DESCRIPTION | BY | DATE | APPROVED |
|---|---|---|---|---|
| D | GENERAL REVISION | | | |
| C | GENERAL REVISION | | | |
| B | GENERAL REVISION | | | |
| A | PROJECT PROFILE | | | |

DRAWN
DESIGNED
CHECKED
APPROVED
DATE



MTR

WAC STATION LEE TUNG STREET SUBWAY

ORIGINATOR

Mott MacDonald
20/F Two Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
w www.mottmac.com.hk

CADD REF.

TITLE
CONSULTANCY AGREEMENT NO. NEX/1050
DETAILED DESIGN FOR LEE TUNG STREET SUBWAY
LOCATION OF NOISE AND AIR SESITIVE RECEIVER

SCALE 1:500 (A3)
DRAWING NO.
REV.

PLOT DRV: C:\Program Data\Bentley\MicroStation V8i (SELECTseries1 WorkSpace\System\plotcfg\WTR_PDF_BW_COL_3000PI.plt
MODELNAME: Default PRINTED BY: ho57494 20/06/2012 12:08:41
FILENAME: J:\282435\REPORT\ENV\PPI\2020596\ME\X050_2.7A_0050.dgn

# Appendix D

# Calibration Certificate of Monitoring Equipment

# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chiu Hin Mansion
Location ID : A1

Date of Calibration: 13-Oct-15
Next Calibration Date: 13-Dec-15
Technician: Mr. Ip Ka Hing

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1018.7 | Corrected Pressure (mm Hg) | 764.025 |
| Temperature (ºC) | 25.1 | Temperature (K) | 298 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10265 |
| Model-> | 5025A | Qstd Intercept -> | -0.00335 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.6 | 6.6 | 13.2 | 1.734 | 50 | 50.12 | Slope = 35.4940 |
| 13 | 5.2 | 5.2 | 10.4 | 1.539 | 44 | 44.10 | Intercept = -10.8966 |
| 10 | 3.8 | 3.8 | 7.6 | 1.316 | 36 | 36.08 | Corr. coeff. = 0.9994 |
| 7 | 2.6 | 2.6 | 5.2 | 1.089 | 28 | 28.06 | |
| 5 | 1.5 | 1.5 | 3 | 0.827 | 18 | 18.04 | |

***Calculations :***

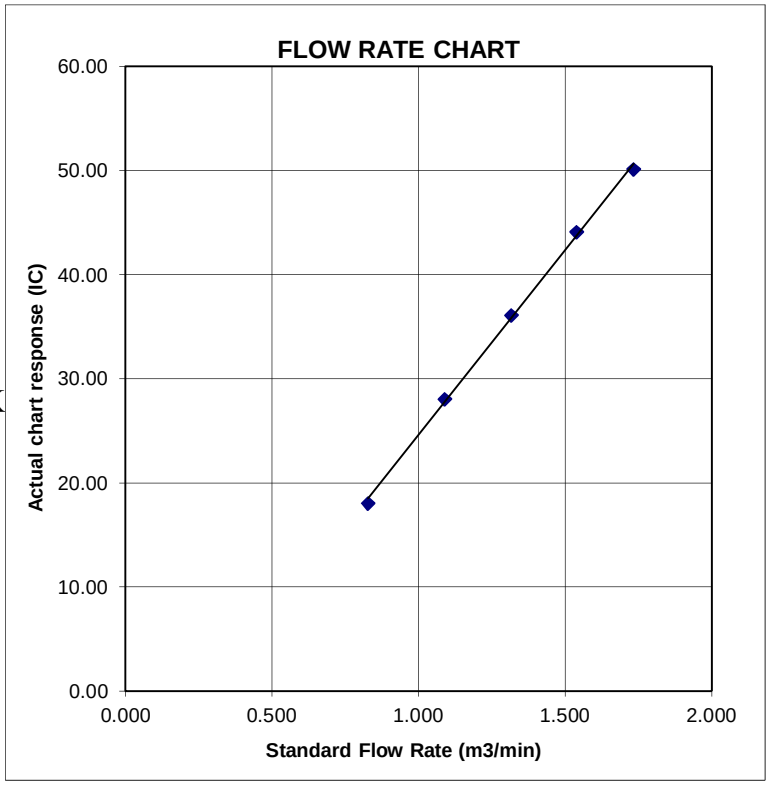
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K
Pstd = actual pressure during calibration ( mm Hg

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



# TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Chiu Hin Mansion
Location ID : A1

Date of Calibration: 15-Dec-15
Next Calibration Date: 15-Feb-16
Technician: Mr. Ip Ka Hing

## CONDITIONS

| | | | |
|---|---|---|---|
| Sea Level Pressure (hPa) | 1019 | Corrected Pressure (mm Hg) | 764.25 |
| Temperature (ºC) | 18.4 | Temperature (K) | 291 |

## CALIBRATION ORIFICE

| | | | |
|---|---|---|---|
| Make-> | TISCH | Qstd Slope -> | 2.10265 |
| Model-> | 5025A | Qstd Intercept -> | -0.00335 |
| Serial # -> | 1941 | | |

## CALIBRATION

| Plate No. | H20 (L) (in) | H2O (R) (in) | H20 (in) | Qstd (m3/min) | I (chart) | IC corrected | LINEAR REGRESSION |
|---|---|---|---|---|---|---|---|
| 18 | 6.6 | 6.6 | 13.2 | 1.754 | 51 | 52.30 | Slope = 31.7060 |
| 13 | 5.3 | 5.3 | 10.6 | 1.572 | 46 | 47.17 | Intercept = -2.8440 |
| 10 | 4.1 | 4.1 | 8.2 | 1.383 | 41 | 42.05 | Corr. coeff. = 0.9979 |
| 7 | 3 | 3 | 6 | 1.183 | 33 | 33.84 | |
| 5 | 1.6 | 1.6 | 3.2 | 0.864 | 24 | 24.61 | |

***Calculations :***

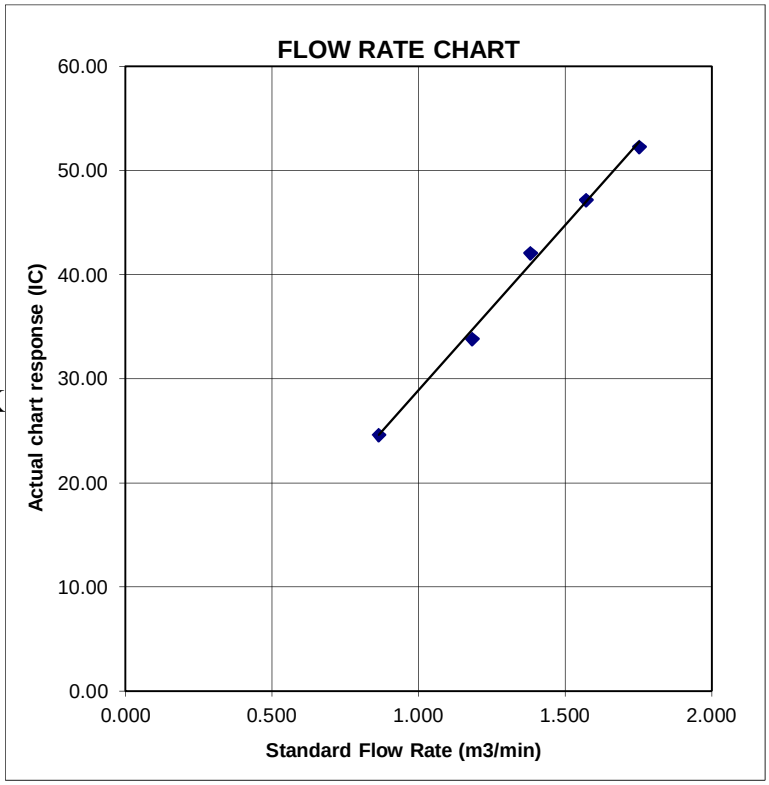
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate
IC = corrected chart respones
I = actual chart response
m = calibrator Qstd slope
b = calibrator Qstd intercept
Ta = actual temperature during calibration ( deg K
Pstd = actual pressure during calibration ( mm Hg

***For subsequent calculation of sampler flow:***

1/m(( I )[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope
b = sampler intercept
I = chart response
Tav = daily average temperature
Pav = daily average pressure



TISCH Environmental

TISCH ENVIRONMENTAL, INC.
145 SOUTH MIAMI AVE
VILLAGE OF CLEVES, OH
45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX

# ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 24, 2015 Rootsmeter S/N 0438320 Ta (K) - 292
Operator Tisch Orifice I.D. - 1941 Pa (mm) - 756.92

| PLATE OR Run # | VOLUME START (m3) | VOLUME STOP (m3) | DIFF VOLUME (m3) | DIFF TIME (min) | METER DIFF Hg (mm) | ORFICE DIFF H2O (in.) |
|---|---|---|---|---|---|---|
| 1 | NA | NA | 1.00 | 1.4880 | 3.2 | 2.00 |
| 2 | NA | NA | 1.00 | 1.0510 | 6.4 | 4.00 |
| 3 | NA | NA | 1.00 | 0.9360 | 7.9 | 5.00 |
| 4 | NA | NA | 1.00 | 0.8920 | 8.8 | 5.50 |
| 5 | NA | NA | 1.00 | 0.7360 | 12.7 | 8.00 |

## DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | | Va | (x axis) Qa | (y axis) |
|---|---|---|---|---|---|---|
| 1.0121 | 0.6802 | 1.4258 | | 0.9958 | 0.6692 | 0.8784 |
| 1.0078 | 0.9589 | 2.0163 | | 0.9916 | 0.9434 | 1.2422 |
| 1.0057 | 1.0745 | 2.2543 | | 0.9895 | 1.0571 | 1.3888 |
| 1.0046 | 1.1262 | 2.3644 | | 0.9884 | 1.1080 | 1.4566 |
| 0.9993 | 1.3578 | 2.8515 | | 0.9832 | 1.3358 | 1.7568 |
| Qstd slope (m) = | | 2.10265 | | Qa slope (m) = | | 1.31664 |
| intercept (b) = | | -0.00335 | | intercept (b) = | | -0.00206 |
| coefficient (r) = | | 0.99999 | | coefficient (r) = | | 0.99999 |
| y axis = SQRT[H2O(Pa/760)(298/Ta)] | | | | y axis = SQRT[H2O(Ta/Pa)] | | |

## CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

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

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

# Certificate of Calibration
# 校正證書

Certificate No. : C151969
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC15-0720 ) Date of Receipt / 收件日期 : 24 March 2015

| | | |
|---|---|---|
| Description / 儀器名稱 | : | Integrating Sound Level Meter (EQ006) |
| Manufacturer / 製造商 | : | Brüel & Kjær |
| Model No. / 型號 | : | 2238 |
| Serial No. / 編號 | : | 2285762 |
| Supplied By / 委託者 | : | Action-United Environmental Services and Consulting<br>Unit A, 20/F., Gold King Industrial Building,<br>35-41 Tai Lin Pai Road, Kwai Chung, N.T. |

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration check

**DATE OF TEST / 測試日期** : 11 April 2015

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 14 April 2015



Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Certificate of Calibration
# 校正證書

Certificate No. : C151969
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration using laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL280 | 40 MHz Arbitrary Waveform Generator | C150014 |
| CL281 | Multifunction Acoustic Calibrator | DC130171 |

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.3 |

6.1.1.2 After Self-calibration

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 | ± 0.7 |

6.1.2 Linearity

| UUT Setting | | | | Applied Value | | UUT Reading (dB) |
|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 (Ref.) |
| | | | | 104.00 | | 104.0 |
| | | | | 114.00 | | 114.0 |

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.



Sun Creation Engineering Limited - Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 - 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Certificate of Calibration
# 校正證書

Certificate No. : C151969
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. (kHz) | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 1 | 94.1 | Ref. |
| | $L_{ASP}$ | | S | | | 94.1 | ± 0.1 |
| | $L_{AIP}$ | | I | | | 94.1 | ± 0.1 |

6.2.2 Tone Burst Signal (2 kHz)

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Burst Duration | | |
| 30 - 110 | $L_{AFP}$ | A | F | 106.0 | Continuous | 106.0 | Ref. |
| | $L_{AFMax}$ | | | | 200 ms | 104.9 | -1.0 ± 1.0 |
| | $L_{ASP}$ | | S | | Continuous | 106.0 | Ref. |
| | $L_{ASMax}$ | | | | 500 ms | 101.9 | -4.1 ± 1.0 |

6.3 Frequency Weighting

6.3.1 A-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 130 | $L_{AFP}$ | A | F | 94.00 | 31.5 Hz | 55.1 | -39.4 ± 1.5 |
| | | | | | 63 Hz | 68.0 | -26.2 ± 1.5 |
| | | | | | 125 Hz | 77.9 | -16.1 ± 1.0 |
| | | | | | 250 Hz | 85.4 | -8.6 ± 1.0 |
| | | | | | 500 Hz | 90.8 | -3.2 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 95.3 | +1.2 ± 1.0 |
| | | | | | 4 kHz | 95.1 | +1.0 ± 1.0 |
| | | | | | 8 kHz | 93.0 | -1.1 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 89.9 | -4.3 (+3.0 ; -6.0) |

# Certificate of Calibration
# 校正證書

Certificate No. : C151969
證書編號

6.3.2 C-Weighting

| UUT Setting | | | | Applied Value | | UUT Reading (dB) | IEC 60651 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Time Weighting | Level (dB) | Freq. | | |
| 50 - 130 | $L_{CFP}$ | C | F | 94.00 | 31.5 Hz | 91.4 | -3.0 ± 1.5 |
| | | | | | 63 Hz | 93.4 | -0.8 ± 1.5 |
| | | | | | 125 Hz | 93.9 | -0.2 ± 1.0 |
| | | | | | 250 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 500 Hz | 94.1 | 0.0 ± 1.0 |
| | | | | | 1 kHz | 94.1 | Ref. |
| | | | | | 2 kHz | 93.9 | -0.2 ± 1.0 |
| | | | | | 4 kHz | 93.3 | -0.8 ± 1.0 |
| | | | | | 8 kHz | 91.1 | -3.0 (+1.5 ; -3.0) |
| | | | | | 12.5 kHz | 88.0 | -6.2 (+3.0 ; -6.0) |

6.4 Time Averaging

| UUT Setting | | | | Applied Value | | | | | UUT Reading (dB) | IEC 60804 Type 1 Spec. (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (dB) | Parameter | Frequency Weighting | Integrating Time | Frequency (kHz) | Burst Duration (ms) | Burst Duty Factor | Burst Level (dB) | Equivalent Level (dB) | | |
| 30 - 110 | $L_{Aeq}$ | A | 10 sec. | 4 | 1 | 1/10 | 110.0 | 100 | 100.0 | ± 0.5 |
| | | | | | | $1/10^2$ | | 90 | 90.1 | ± 0.5 |
| | | | 60 sec. | | | $1/10^3$ | | 80 | 79.4 | ± 1.0 |
| | | | 5 min. | | | $1/10^4$ | | 70 | 69.2 | ± 1.0 |

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812705

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :

| | | |
|---|---|---|
| 94 dB | : 31.5 Hz - 125 Hz | : ± 0.35 dB |
| | 250 Hz - 500 Hz | : ± 0.30 dB |
| | 1 kHz | : ± 0.20 dB |
| | 2 kHz - 4 kHz | : ± 0.35 dB |
| | 8 kHz | : ± 0.45 dB |
| | 12.5 kHz | : ± 0.70 dB |
| 104 dB : 1 kHz | | : ± 0.10 dB (Ref. 94 dB) |
| 114 dB : 1 kHz | | : ± 0.10 dB (Ref. 94 dB) |
| Burst equivalent level | | : ± 0.2 dB (Ref. 110 dB continuous sound level) |

- The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

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

# Certificate of Calibration
# 校正證書

Certificate No. : C151967
證書編號

**ITEM TESTED / 送檢項目** ( Job No. / 序引編號 : IC15-0720 ) Date of Receipt / 收件日期 : 24 March 2015

Description / 儀器名稱 : Sound Level Calibrator (EQ084)
Manufacturer / 製造商 : Cesva
Model No. / 型號 : CB-5
Serial No. / 編號 : 030023
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

**TEST CONDITIONS / 測試條件**

Temperature / 溫度 : (23 ± 2)°C Relative Humidity / 相對濕度 : (55 ± 20)%
Line Voltage / 電壓 : ---

**TEST SPECIFICATIONS / 測試規範**

Calibration

**DATE OF TEST / 測試日期** : 11 April 2015

**TEST RESULTS / 測試結果**

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification. (after adjustment)
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :
- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試 : K C Lee, Project Engineer

Certified By 核證 : K M Wu, Engineer

Date of Issue 簽發日期 : 14 April 2015



Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Certificate of Calibration
# 校正證書

Certificate No. : C151967
證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

| Equipment ID | Description | Certificate No. |
|---|---|---|
| CL130 | Universal Counter | C143868 |
| CL281 | Multifunction Acoustic Calibrator | DC130171 |
| TST150A | Measuring Amplifier | C141558 |

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

5.1.1 Before Adjustment

| UUT Nominal Value | Measured Value (dB) | Mfr's Spec. (dB) | Uncertainty of Measured Value (dB) |
|---|---|---|---|
| 94 dB, 1 kHz | * 94.4 | ± 0.3 | ± 0.2 |
| 104 dB, 1 kHz | * 104.4 | | ± 0.3 |

Out of Mfr's Spec.

5.1.2 After Adjustment

| UUT Nominal Value | Measured Value (dB) | Mfr's Spec. (dB) | Uncertainty of Measured Value (dB) |
|---|---|---|---|
| 94 dB, 1 kHz | 94.0 | ± 0.3 | ± 0.2 |
| 104 dB, 1 kHz | 104.0 | | ± 0.3 |

5.2 Frequency Accuracy

5.2.1 Before Adjustment

| UUT Nominal Value (kHz) | Measured Value (kHz) | Mfr's Spec. | Uncertainty of Measured Value (Hz) |
|---|---|---|---|
| 1 | 1.002 | 1 kHz ± 1.5 % | ± 1 |

5.2.2 After Adjustment

| UUT Nominal Value (kHz) | Measured Value (kHz) | Mfr's Spec. | Uncertainty of Measured Value (Hz) |
|---|---|---|---|
| 1 | 1.001 | 1 kHz ± 1.5 % | ± 1 |

# Certificate of Calibration
# 校正證書

Certificate No. : C151967
證書編號

Remark : The uncertainties are for a confidence probability of not less than 95 %.

Note :
The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

# Appendix E

# HOKLAS-Accreditation Certificate of the Testing Laboratory

Hong Kong Accreditation Service
香港認可處

# Certificate of Accreditation
# 認可證書

*This is to certify that*
*特此證明*

## ALS TECHNICHEM (HK) PTY LIMITED

**11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong**
香港新界葵涌永業街1-3號忠信針織中心11樓

*has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a*
*為香港認可處執行機關根據認可諮詢委員會建議而接受的*

## HOKLAS Accredited Laboratory
## 「香港實驗所認可計劃」認可實驗所

*This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of*
*此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定測試或校正工作*

## Environmental Testing
## 環境測試

*This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.*
*本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。*
*This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).*
*這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作（見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報）。*

*The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive*
*香港認可處根據認可處執行機關的權限在此蓋上通用印章*

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

*This certificate is issued subject to the terms and conditions laid down by HKAS*
*本證書按照香港認可處訂立的條款及條件發出*

L 000552

# Appendix F

# Event and Action Plan

## Event and Action Plan for Construction Noise

| Event | Action | | | |
|---|---|---|---|---|
| | ET | IEC | ER | 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 mitigation effectiveness. | 1. Review the analyzed result submitted by ET.<br>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly.<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of exceedance<br>2. Notify Contractor<br>3. Require Contractor to propose remedial measures for the analyzed noise problem<br>4. Ensure remedial measures are properly implemented. | 1. Submit noise mitigation proposals to IEC<br>2. Implement noise mitigation proposals |
| Limit Level | 1. Notify IEC, ER, EPD and Contractor, and follow other actions<br>2. Identify source<br>3. Repeat measurement to confirm findings<br>4. Increase monitoring frequency<br>5. Check Contractor's working procedures to determine possible mitigation to be implemented<br>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances<br>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD, ER informed of the results<br>8. If exceedance stops, cease additional monitoring | 1. Discuss amongst ER, ET and Contractor on the potential remedial actions<br>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly<br>3. Supervise the implementation of remedial measures | 1. Confirm receipt of notification of exceedances<br>2. Notify Contractor<br>3. Require Contractor to propose remedial measures<br>4. Ensure remedial measures are properly implemented<br>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. | 1. Take immediate action to avoid further exceedance<br>2. Submit proposals for remedial actions to IEC within 3 working days of notifications<br>3. Implement the agreed proposals<br>4. Revise and resubmit proposals if problem still not under control<br>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated |

## Event and Action Plan for Air Quality

| Event | Action | | | |
|---|---|---|---|---|
| | ET | IEC | ER | Contractor |
| **Action Level** | | | | |
| Exceedance for one sample | 1. Identify source;<br>2. If valid, inform IEC and ER;<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 |
| Exceedance for two or more consecutive samples | 1. Identify source;<br>2. Inform IEC and EPD;<br>3. Repeat measurements to<br>1. confirm findings;<br>4. Increase monitoring frequency to daily;<br>5. Discuss with IEC and Contractor on remedial action required;<br>6. If exceedance continues, arrange meeting with IEC and ER;<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 ER on the effectiveness of the proposed remedial measures;<br>5. Supervisor implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. Ensure remedial Measure properly implemented. | 1. Submit proposals for remedial action to IEC within 3 working days of notification;<br>2. Implement the agreed proposals;<br>3. Amend proposal if appropriate. |
| **Limit Level** | | | | |
| Exceedance for one sample | 1. Identify source;<br>2. Inform ER 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 and keep IEC, EPD and ER informed of the results. | 1. Check monitoring data submitted by ET;<br>2. Check Contractor's working method;<br>3. Discuss with ET and the Contractor on possible remedial measures;<br>4. Advise the ER 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 properly implemented. | 1. Take 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. Amend proposal if appropriate. |
| Exceedance for two or more consecutive samples | 1. Notify IEC, ER, Contractor and EPD;<br>2. Identify sources;<br>3. Repeat measurement to confirm findings;<br>4. Increase monitoring frequency to daily;<br>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;<br>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;<br>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;<br>8. If exceedance stops cease additional monitoring. | 1. Discuss amongst ER, ET and Contractor on the potential remedial actions;<br>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly.<br>3. Supervise the implementation of remedial measures. | 1. Confirm receipt of notification of failure in writing;<br>2. Notify Contractor;<br>3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented;<br>4. Ensure remedial measures properly implemented;<br>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated | 1. Take 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 the ER until the exceedance is abated. |

# Appendix G

# Monitoring Schedule

## Monitoring Schedule in the Reporting Period – December 2015

| DATE | | AIR QUALITY | NOISE |
|---|---|---|---|
| | | 24-HOUR TSP | $L_{EQ}$ 30MIN |
| TUE | 1-DEC-15 | | ✓ |
| WED | 2-DEC-15 | ✓ | |
| THU | 3-DEC-15 | | |
| FRI | 4-DEC-15 | | |
| SAT | 5-DEC-15 | | |
| SUN | 6-DEC-15 | | |
| MON | 7-DEC-15 | | |
| TUE | 8-DEC-15 | ✓ | ✓ |
| WED | 9-DEC-15 | | |
| THU | 10-DEC-15 | | |
| FRI | 11-DEC-15 | | |
| SAT | 12-DEC-15 | | |
| SUN | 13-DEC-15 | | |
| MON | 14-DEC-15 | ✓ | |
| TUE | 15-DEC-15 | | ✓ |
| WED | 16-DEC-15 | | |
| THU | 17-DEC-15 | | |
| FRI | 18-DEC-15 | | |
| SAT | 19-DEC-15 | ✓ | |
| SUN | 20-DEC-15 | | |
| MON | 21-DEC-15 | | |
| TUE | 22-DEC-15 | | ✓ |
| WED | 23-DEC-15 | | |
| THU | 24-DEC-15 | ✓ | |
| FRI | 25-DEC-15 | | |
| SAT | 26-DEC-15 | | |
| SUN | 27-DEC-15 | | |
| MON | 28-DEC-15 | | |
| TUE | 29-DEC-15 | | ✓ |
| WED | 30-DEC-15 | ✓ | |
| THU | 31-DEC-15 | | |

| | |
|---|---|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

**Air Quality Monitoring Location**

A1 - balcony at 1/F of Chiu Hin Mansion

**Construction Noise Monitoring Location:**

N1 - 2/F floor of Hennessey Building

N2 - balcony at 1/F of Chiu Hin Mansion

## Monitoring Schedule for the Coming Month – January 2016

| DATE | | AIR QUALITY | NOISE |
|---|---|---|---|
| | | 24-HOUR TSP | $L_{EQ}$ 30MIN |
| FRI | 1-JAN-16 | | |
| SAT | 2-JAN-16 | | |
| SUN | 3-JAN-16 | | |
| MON | 4-JAN-16 | | |
| TUE | 5-JAN-16 | ✓ | ✓ |
| WED | 6-JAN-16 | | |
| THU | 7-JAN-16 | | |
| FRI | 8-JAN-16 | | |
| SAT | 9-JAN-16 | | |
| SUN | 10-JAN-16 | | |
| MON | 11-JAN-16 | ✓ | |
| TUE | 12-JAN-16 | | ✓ |
| WED | 13-JAN-16 | | |
| THU | 14-JAN-16 | | |
| FRI | 15-JAN-16 | | |
| SAT | 16-JAN-16 | ✓ | |
| SUN | 17-JAN-16 | | |
| MON | 18-JAN-16 | | |
| TUE | 19-JAN-16 | | ✓ |
| WED | 20-JAN-16 | | |
| THU | 21-JAN-16 | | |
| FRI | 22-JAN-16 | ✓ | |
| SAT | 23-JAN-16 | | |
| SUN | 24-JAN-16 | | |
| MON | 25-JAN-16 | | |
| TUE | 26-JAN-16 | | ✓ |
| WED | 27-JAN-16 | | |
| THU | 28-JAN-16 | ✓ | |
| FRI | 29-JAN-16 | | |
| SAT | 30-JAN-16 | | |
| SUN | 31-JAN-16 | | |

| | |
|---|---|
| ✓ | Monitoring Day |
| | Sunday or Public Holiday |

**Air Quality Monitoring Location**

A1 - balcony at 1/F of Chiu Hin Mansion

**Construction Noise Monitoring Location:**

N1 - 2/F floor of Hennessey Building

N2 - balcony at 1/F of Chiu Hin Mansion

# Appendix H

# Database of Monitoring Results

## Result of 24-hour TSP Monitoring

**Location: A1 (balcony at 1/F of Chiu Hin Mansion)**

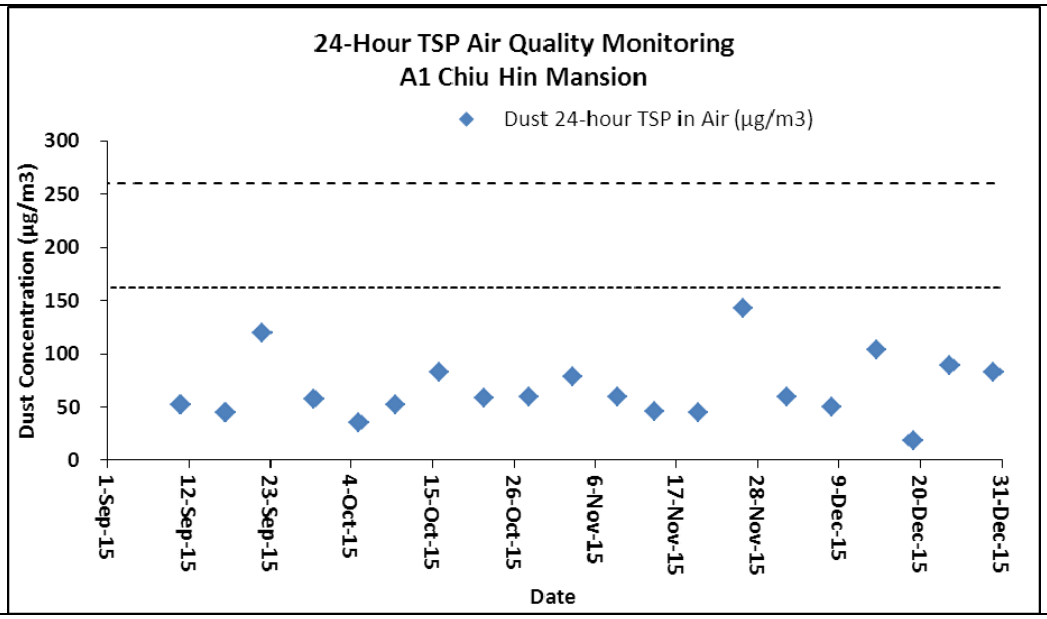
| Date | Sample Number | Elapsed Time | | | Chart Reading | | | Ave. Temp. (℃) | Standard | | | Filter Weight (g) | | Weight Dust Collected (g) | Dust 24-hour TSP in Air (μg/m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Initial | Final | Actual (min) | Min | Max | Ave | | Ave. Press. (hPa) | Flow Rate ($m^3$/min) | Air Volume (std $m^3$) | Initial | Final | | |
| 2-Dec-15 | 28757 | 17196.47 | 17220.25 | 1426.80 | 36 | 40 | 38.0 | 19.3 | 1020.1 | 1.39 | 1986 | 2.8094 | 2.9273 | 0.1179 | 60 |
| 8-Dec-15 | 28806 | 17220.25 | 17244.26 | 1440.60 | 39 | 40 | 39.5 | 18.8 | 1020.3 | 1.44 | 2068 | 2.9089 | 3.0123 | 0.1034 | 50 |
| 14-Dec-15 | 28667 | 17244.26 | 17268.17 | 1434.60 | 38 | 40 | 39.0 | 18.7 | 1020 | 1.42 | 2039 | 2.8620 | 3.0725 | 0.2105 | 103 # |
| 19-Dec-15 | 28800 | 17268.17 | 17291.88 | 1422.60 | 40 | 41 | 40.5 | 17.5 | 1021.1 | 1.39 | 1975 | 2.7503 | 2.7855 | 0.0352 | 18 |
| 24-Dec-15 | 28817 | 17291.88 | 17315.90 | 1441.20 | 39 | 40 | 39.5 | 17.1 | 1020.6 | 1.36 | 1956 | 2.8895 | 3.0628 | 0.1733 | 89 |
| 30-Dec-15 | 28858 | 17315.90 | 17339.91 | 1440.60 | 40 | 41 | 40.5 | 16.8 | 1026.4 | 1.39 | 2007 | 2.8085 | 2.9755 | 0.1670 | 83 |

*# While the calibration was carried out on 15 December 2015, there was no significant change of the HVS as checked on that day, hence the monitoring on 14 December 2015 should not have suffered any equipment accuracy.*

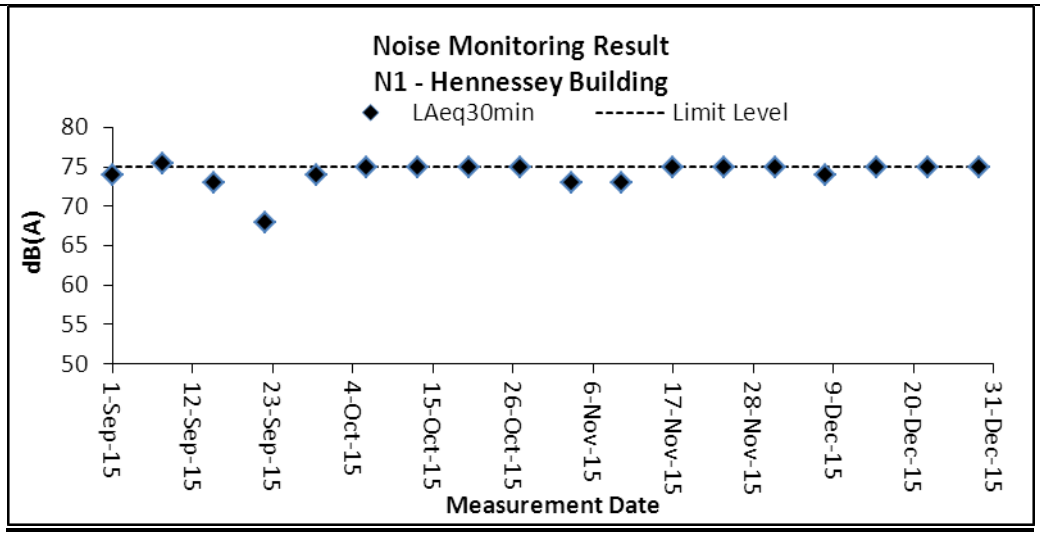
# Appendix I

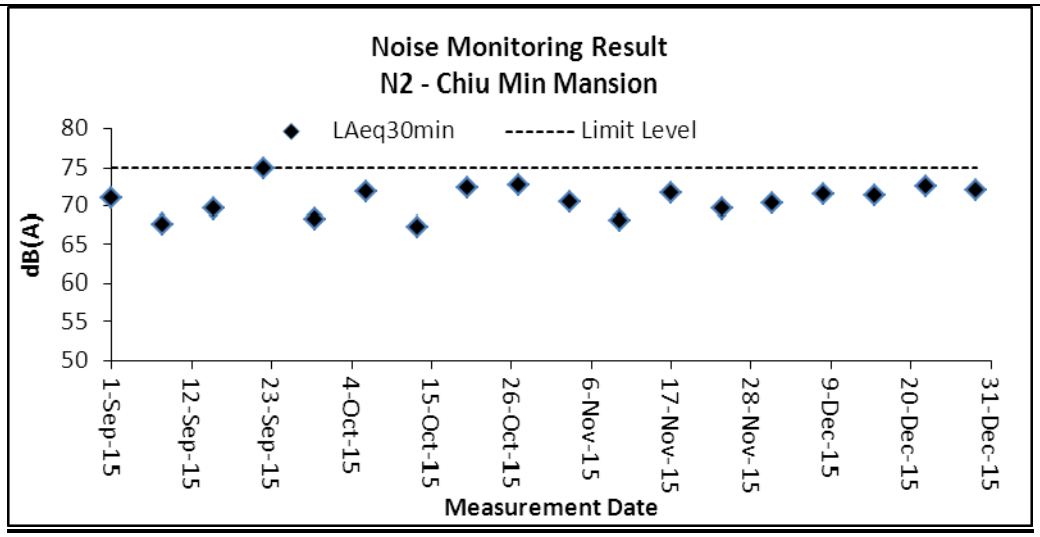
# Graphical Plots

## Air Quality




## Construction Noise



# Appendix J

# Meteorological Information

| Meteorological Data downloaded from HKO in the Reporting Period | | | | | | | |
|---|---|---|---|---|---|---|---|
| Date | | Weather | Total Rainfall (mm) | Kings Park Station | | | |
| | | | | Mean Air Temp. (°C) | Wind Speed (km/h) | Mean Relative Humidity (%) | Wind Direction |
| 1-Dec-15 | Tue | Mainly cloudy. Bright periods in the afternoon. Moderate to fresh northeasterly winds,. | 0 | 22.8 | 7.5 | 77.5 | E/SE |
| 2-Dec-15 | Wed | Mainly cloudy. Bright periods in the afternoon. Moderate to fresh northeasterly winds,. | Trace | 23.8 | 7 | 75.5 | E/SE |
| 3-Dec-15 | Thu | Mainly cloudy. Bright periods in the afternoon. Moderate to fresh northeasterly winds,. | Trace | 20.1 | 9.4 | 78.2 | N/NE |
| 4-Dec-15 | Fri | Mainly cloudy. Bright periods in the afternoon. Moderate to fresh northeasterly winds,. | Trace | 19.2 | 9.8 | 73.2 | E/SE |
| 5-Dec-15 | Sat | Mainly cloudy. Bright periods in the afternoon. Moderate to fresh northeasterly winds,. | 15.7 | 17.3 | 10.1 | 71 | N/NE |
| 6-Dec-15 | Sun | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | 1 | 16 | 7.4 | 68.5 | N/NE |
| 7-Dec-15 | Mon | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | 0 | 17 | 5.6 | 68.5 | NE |
| 8-Dec-15 | Tue | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | 0.7 | 17.4 | 7 | 77.5 | N/NE |
| 9-Dec-15 | Wed | Mainly fine apart from relatively low visibility in some areas at first. Moderate north to northeasterly winds | 44.6 | 17.4 | 9.4 | 88.5 | E/NE |
| 10-Dec-15 | Thu | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | Trace | 19.3 | 6.3 | 84.5 | W |
| 11-Dec-15 | Fri | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | 0 | 20.3 | 8.2 | 73.2 | N/NE |
| 12-Dec-15 | Sat | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | 0 | 19.6 | 8.5 | 79 | E/SE |
| 13-Dec-15 | Sun | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | Trace | 20.1 | 9.8 | 85.5 | E/SE |
| 14-Dec-15 | Mon | Cloudy with a few rain patches. Moderate northeasterly winds, fresh at times | Trace | 20.1 | 7 | 81.5 | E/SE |
| 15-Dec-15 | Tue | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | Trace | 17.7 | 8 | 67.5 | N/NE |
| 16-Dec-15 | Wed | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | 0 | 14.9 | 13.4 | 47.7 | N/NE |
| 17-Dec-15 | Thu | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | 0 | 13.1 | 14 | 30.7 | N/NE |
| 18-Dec-15 | Fri | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | 0 | 13.8 | 8.5 | 38.5 | N/NE |
| 19-Dec-15 | Sat | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | 0 | 16.3 | 6.7 | 45.7 | E/SE |
| 20-Dec-15 | Sun | It will be fine. Very dry in the afternoon. Moderate northeasterly winds, fresh at times offshore. | 0.7 | 17.2 | 5.4 | 79.2 | E/SE |
| 21-Dec-15 | Mon | Mainly cloudy. One or two light rain patches with relatively low visibility in some areas at first. Moderate easterly winds, fresh overnight. | Trace | 19.2 | 10 | 79 | E/SE |
| 22-Dec-15 | Tue | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | 0.6 | 19.3 | 11.8 | 87.5 | E/SE |
| 23-Dec-15 | Wed | Mainly cloudy with coastal fog. One or two light rain patches in the morning and at night. | Trace | 20.8 | 7 | 88.5 | E/SE |
| 24-Dec-15 | Thu | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | Trace | 23.2 | 6.5 | 88.2 | E/SE |
| 25-Dec-15 | Fri | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | 0.2 | 18 | 0.3 | 76 | N/NE |
| 26-Dec-15 | Sat | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | 0 | 17.9 | 10 | 81 | N/NE |
| 27-Dec-15 | Sun | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | 0.4 | 17.4 | 7.6 | 79 | N/NE |
| 28-Dec-15 | Mon | Mainly cloudy. Moderate northeasterly winds, fresh at times later. | Trace | 17.2 | 8 | 71 | N/NE |
| 29-Dec-15 | Tue | Sunny periods. Cloudy tonight. Moderate to fresh east to northeasterly winds. | Trace | 17.1 | 11.2 | 73 | E/SE |
| 30-Dec-15 | Wed | Mainly fine. Dry in the afternoon. Cloudy periods tonight. Moderate northeasterly winds, fresh tonight. | 0.4 | 16.9 | 5.5 | 75.5 | N/NE |
| 31-Dec-15 | Thu | Mainly fine. Dry in the afternoon. Cloudy periods tonight. Moderate northeasterly winds, fresh tonight. | Trace | 18 | 6.5 | 41.2 | E/NE |

# Appendix K

# Monthly Summary Waste Flow Table

## Wan Chai Station Lee Tung Street Subway- C6593-13C

## Monthly Summary Waste Flow Table for 2015

| Name of Employer: MTR Corporation Limited | | | | | | | | | | | Contract No.: C65931-13C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Month | Actual Quantities of Inert C&D Materials Generated Monthly | | | | | | | | | | Actual Quantities of Non-Inert C&D Wastes Generated Monthly | | | | |
| | Total Quantity Generated | Broken Concrete | Building Debris | Mixed Rock & Soil | Bentonite | Rubbish | Slurry | Rock | Soil | Reused in this Project | Metals | Paper/ cardboard packaging | Plastics | Chemical Waste | Others, e.g. general refuse |
| | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in $m^3$) | (in m3/ Litre) | (in $m^3$) |
| Jan | 1.69784 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.69784 | 0 | 0 | 0 | 0 | 0 | 0.0009 |
| Feb | 1.14848 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.14848 | 0 | 0 | 0 | 0 | 0 | 0.0001 |
| Mar | 1.65921 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.65921 | 0 | 0 | 0 | 0 | 0 | 0.0009 |
| Apr | 0.07772 | 0.06172 | 0 | 0 | 0 | 0 | 0 | 0 | 0.016 | 0 | 0 | 0 | 0 | 0 | 0.04404 |
| May | 0.15078 | 0.13574 | 0 | 0 | 0 | 0 | 0 | 0 | 0.01504 | 0 | 0 | 0 | 0 | 0 | 0.01186 |
| Jun | 0.13793 | 0.01113 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1268 | 0 | 0 | 0 | 0 | 0 | 0.01913 |
| Jul | 0.09909 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.09909 | 0 | 0 | 0 | 0 | 0 | 0.01298 |
| Aug | 0.06101 | 0.01301 | 0 | 0 | 0.048 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00731 |
| Sep | 0.1235 | 0.04577 | 0 | 0 | 0.06148 | 0 | 0 | 0 | 0.01625 | 0 | 0 | 0 | 0 | 0 | 0.00343 |
| Oct | 0.00235 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00235 | 0 | 0 | 0 | 0 | 0 | 0.01165 |
| Nov | 1.29848 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.29848 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dec | 0.63413 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.63413 | 0 | 0 | 0 | 0 | 0 | 0.0209 |
| Total | 7.09052 | 0.26737 | 0 | 0 | 0.10948 | 0 | 0 | 0 | 6.71367 | 0 | 0 | 0 | 0 | 0 | 0.1332 |

# Appendix L

# Implementation Schedule for Environmental Mitigation Measures (ISEMM)

| Project Profile Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concerns to address | Implementation Parties | Location of the measure | When to implement the measure | Relevant requirements or standards for the measure to achieve |
|---|---|---|---|---|---|---|
| **NOISE IMPACT** | | | | | | |
| S.5.1.1 | **Use of quieter plant** | To minimize construction noise emissions | Contractor | Work site | Construction Stage | ProPECC PN2/93 and Noise Control Ordinance |
| S.5.1.1 | **Use of noise enclosure and movable barrier**<br>• movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME;<br>• noise enclosure can achieve 15dB(A) reduction for PME;<br>• noise enclosure is proposed to be built after open excavation in order to minimize the noise impact due to further excavation work and construction of subway. The enclosure should either be provided with acoustic door for access purpose which should be kept closed during the construction works or should be designed with no direct line of sight from the open side to the NSRs;<br>• A typical design barrier with a steel frame of vertical / cantilever type would be adopted and located close to the noise generating part of PME;<br>• Barrier material of surface mass in excess of 7kg/$m^2$ shall be required to achieve the maximum screening effect (and minimum 10kg/$m^2$ for noise enclosure);<br>• The length of barrier should generally be at least five times greater than its height and the minimum height of a barrier should be such that no part of the noise source will be visible from the noise sensitive receiver being protected. | To minimize construction noise emissions | Contractor | Work site | Construction Stage | ProPECC PN2/93, Noise Control Ordinance and EIAO Guidance Note NO. 9/2010 |
| S.5.1.1 | **General Construction Noise Control Measures**<br>• The Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD shall be adopted;<br>• The statutory and non-statutory requirements and guidelines shall be complied with;<br>• Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work; | To minimize construction noise emissions | Contractor | Work site | Construction Stage | ProPECC PN2/93 and Noise Control Ordinance |

| Project Profile Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concerns to address | Implementation Parties | Location of the measure | When to implement the measure | Relevant requirements or standards for the measure to achieve |
|---|---|---|---|---|---|---|
| | • Working methods to minimize the noise impact on the surrounding NSRs shall be formulated and executed, and the implementation of these methods shall be monitored by experienced personnel with suitable training;<br>• Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;<br>• Unused equipment shall be turned off;<br>• PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;<br>• All plant and equipment shall be maintained regularly; and<br>• Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable. | | | | | |
| **AIR QUALITY IMPACT** | | | | | | |
| S.5.1.2 | **<u>Construction Dust Control Measures</u>**<br>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;<br>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;<br>• Covering of stockpile of excavated dusty materials, if any, with impervious sheeting or spraying with water to maintain the entire surface wet;<br>• Provision of vehicle washing facilities at the entry and exit points of site;<br>• Tarpaulin covering of any dusty materials being transported to and from site by vehicle;<br>• Positioning of construction plant at maximum practicable distance from air sensitive receivers; and<br>• Due to the small size of the works sites and lack of space for stockpiling, excavated materials should be hauled off-site almost immediately. However, in the event of any stockpiled excavated materials, they should be covered with tarpaulin and be removed offsite as soon as practicable to avoid any dust nuisance arising | To minimize the dust impacts arising from the construction works | Contractor | Work site | Construction Stage | Air Pollution Control (Construction Dust) Regulation |

| Project Profile Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concerns to address | Implementation Parties | Location of the measure | When to implement the measure | Relevant requirements or standards for the measure to achieve |
|---|---|---|---|---|---|---|
| **WATER QUALITY IMPACT** | | | | | | |
| S.5.1.3 | **Construction Water Quality Impact Measures**<br>• Collection of wastewater into a sedimentation tank for treatment before discharge into the public drainage system;<br>• Provision of silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater prior to discharge to the public stormwater system. The silt traps and oil interceptors should be cleaned and maintained regularly;<br>• Installation of wheel washing facilities to minimize muddy runoff;<br>• Regular maintenance and inspection of drainage systems and erosion control and silt removal facilities;<br>• Management and monitoring of sewage treatment facilities (if any);<br>• Any foul effluent should not be discharged into any public sewer and stormwater drain, unless an effluent discharge permit is obtained under the WPCO by the Contractor;<br>• Coverage of stockpiles of C&D materials (if any) during rainstorms; and<br>• Site toilet facilities, if needed, should be chemical toilets or should have the sewage discharge directed to a foul sewer. | To reduce water quality impact induced by the construction work | Contractor | Work site | Construction Stage | ProPECC PN1/94; Water Pollution Control Ordinance |
| **WASTE MANAGEMENT** | | | | | | |
| S.5.1.4 | **Construction Waste Management Measures**<br>• Scrap metals or abandoned equipment should be recycled if possible;<br>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;<br>• The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill. Independent audits of the Contractor and resident site staff will be undertaken to ensure that the correct procedures are being followed;<br>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes; and | To adopt waste management measures in the way of avoiding, minimizing, reusing and recycling so as to reduce waste generation | Contractor | Work site | Construction Stage | Waste Disposal Ordinance (Cap. 354); Waste Disposal (Chemical Waste) (General) Regulation; DEVB TCW No. 6/2010; ETWB TCW No. 19/2005. |

| Project Profile Ref. | Recommended Mitigation Measures | Objectives of the Recommended Measures & Main Concerns to address | Implementation Parties | Location of the measure | When to implement the measure | Relevant requirements or standards for the measure to achieve |
|---|---|---|---|---|---|---|
| | • All general refuse should be segregated and stored in enclosed bins or compaction units and waste separation facilities for paper, aluminum cans, plastic bottles etc. should be provided to facilitate reuse or recycling of materials and their proper disposal. | | | | | |
| **LANDSCAPE AND VISUAL IMPACT** | | | | | | |
| S.5.1.5 | **Landscape and Visual Measures**<br>• Clear demarcation of works area to prevent damages to existing trees in close proximity;<br>• Protection of all trees planned to be retained onsite;<br>• Preserving all affected trees by transplanting where practical. Tree transplanting application and tree removal application shall be submitted for approval in accordance with ETWB TCW 3/2006; and<br>• Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colors. | To reduce landscape and visual impact by construction works. | Contractor | Work Site and nearby playground | Construction Stage | EIAO; ETWB TCW No. 3/2006. |