



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

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

**7<sup>TH</sup> QUARTERLY ENVIRONMENTAL MONITORING  
AND AUDIT (EM&A) SUMMARY REPORT –  
MARCH 2016 TO MAY 2016**

**PREPARED FOR  
KADEN CONSTRUCTION LIMITED**

**Quality Index**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Approved By</b>
18 August 2016	TCS00704/14/600/R0106v2	 Martin Li Assistant Environmental Consultant	 T.W. Tam Environmental Team Leader

<b>Version</b>	<b>Date</b>	<b>Description</b>
1	15 August 2016	First Submission
2	18 August 2016	Amended against IEC's comment

Your Ref:  
Our Ref: 40032976/454505

**By Email and Post**

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Attn.: Mr. Kenneth Chow / Environmental Engineer II

31 August 2016

Dear Sirs

**Consultancy Agreement A130-13  
Independent Environmental Checker for CRS and LTS  
LTS - Verification for Seventh Quarterly Environmental Monitoring and Audit (EM&A)  
Report (March 2016 to May 2016) (Report No.: TCS00704/14/600/R0106v2)**

We refer to the 7<sup>th</sup> Quarterly EM&A Report (March 2016 to May 2016) received under cover of the email from the Environmental Team, AUES, dated on 17 August 2016.

Further to our comments provided on 17 August 2016 and subsequent revision of the Report by AUES on 18 August 2016, we have no further comment and have verified the captioned report (Report No.: TCS00704/14/600/R0106v2).

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

Yours faithfully  
**AECOM Consulting Services Ltd**



Y. W. Fung  
Independent Environmental Checker

LLMC/wwsc

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

## EXECUTIVE SUMMARY

ES01 This is the 7<sup>th</sup> Quarterly EM&A Summary Report for 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/A (hereinafter referred as “the EP-444/2012/A” or “the EP”), covering the period from **1 March 2016 to 31 May 2016** (hereinafter “Reporting Period”).

### ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES02 Environmental monitoring activities under the EM&A programme in the Reporting Period are summarized in the following table.

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Reporting Period	
		Number of Monitoring Locations to undertake	Total Occasions
Air Quality	24-hour TSP	1	16
Construction Noise	L <sub>eq(30min)</sub> Daytime	2	28
Site Inspection / Audit	Weekly inspection with ET, the Contractor and RE	--	13
	Monthly joint inspection with ET, the Contractor, RE and IEC	--	3

### BREACHES OF ACTION/LIMIT LEVELS

ES03 In this Reporting Period, monitoring results demonstrated that no exceedance of environmental quality criteria recorded in air quality and construction noise. The summary of breach of environmental performance is shown below.

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 <sub>eq(30min)</sub> 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 CHANGES

ES06 No reporting changes were made in the Reporting Period.

### FUTURE KEY ISSUES

ES07 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.

ES08 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.

ES09 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) of 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:
- (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 take about 36 months. In order to effectively implement the environmental protection measures as stipulated in the Particular Specification (PS) of Project, 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. The construction of the Project was commenced on 28 August 2014.
- 1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by KCL as the independent environmental team (ET) to implement the relevant EM&A programme of the Project.
- 1.05 This is the 7<sup>th</sup> Quarterly EM&A Summary Report presenting the monitoring results and inspection findings in the Reporting Period from **1 March 2016** to **31 May 2016**.

### REPORT STRUCTURE

- 1.06 This Report is structured into the following sections:-

<b>Section 1</b>	<i>Introduction</i>
<b>Section 2</b>	<i>Project Organization</i>
<b>Section 3</b>	<i>Summary of Impact monitoring Requirements</i>
<b>Section 4</b>	<i>Air Quality Monitoring Results</i>
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<b>Section 10</b>	<i>Conclusions and Recommendations</i>

## 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 according with the EP stipulation, the required documents submission status to EPD for retention as listed below:

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

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

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 Approved on 14/05/2014
3	Water Pollution Control Ordinance - Discharge License	License no.: WT00019539-2014 Approved on 16/07/2014 Valid to: 31/07/2019
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no.: 7019837 Approved on 30/04/2014



Item	Description	License/Permit Status
5	Construction Noise Permit under Noise Control Ordinance	GW-RS0923-15 obtained on 11 Sep 2015 Valid from 11 Sep 2015 to 10 March 2016
		GW-RS0970-15 obtained on 14 Sep 2015 Valid from 14 Sep 2015 to 12 March 2016
		GW-RS0164-16 obtained on 11 Mar 2016 Valid from 11 Mar 2016 to 10 Sep 2016
		GW-RS0165-16 obtained on 14 Mar 2016 Valid from 14 Mar 2016 to 13 Sep 2016

### CONSTRUCTION PROGRESS

2.11 In the Reporting Period, construction activities conducted are listed below. Moreover, the master construction program is enclosed in [Appendix C](#).

#### March 2016

- Construction of mini piles and excavation for primary RC beam of tram deck at Eastbound
- Sheet piling and grouting at Westbound footpath
- Side wall concreting for North Basketball Court
- Block Walls for AFC Audit Room

#### April 2016

- Construction of main beam for mini piles at Eastbound
- Mini piles and Construction of main beam for mini piles at Westbound footpath
- RC structure for new subway for North Basketball Court
- ABWF for external finishing at WAC Station

#### May 2016

- Construction of main beam and traffic deck, reinstatement of site area at Eastbound
- Construction of main beam for mini piles and bulk excavation at Westbound footpath
- Modification of steel decking platform at Children Playground
- ABWF for external finishing at WAC Station

### 3 SUMMARY ENVIRONMENTAL IMPACT MONITORING REQUIREMENTS

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	<ul style="list-style-type: none"> <li>• 24-hour Total Suspended Particulate (hereinafter ‘24-hour TSP’)</li> <li>• 1-hour TSP monitoring (*)</li> </ul>
Construction Noise	<ul style="list-style-type: none"> <li>• A-weighted equivalent continuous sound pressure level (30min) (hereinafter ‘L<sub>eq(30min)</sub>’ during the normal working hours)</li> </ul>

**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 attached to the Project Profile (Register No. PP-472/2012), construction noise and air quality monitoring location is 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 *Table 3-2* and illustrated in *Appendix D*.

**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 are stipulated in the EMAP and presented as follows.

##### Air Quality

3.06 Frequency of impact air quality monitoring is as follows:

- 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 depended 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*. A direct reading dust meter is used to measure 1-hour TSP air quality in case of non-compliance with air quality criteria of the 24-Hour TSP measurement.
- 3.10 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory. All equipment to be used for air quality monitoring is listed in **Table 3-3**.

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

Equipment	Model
<b>24-hour TSP</b>	
High Volume Air Sampler	TISCH High Volume Air Sampler, HVS Model TE-5170
Calibration Kit	TISCH Model TE-5028A
<b>1- hour TSP</b>	
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 also 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, however, the owners rejected to provide premises for wind data monitoring equipment installation.
- 3.13 In this situation, the ET proposed alternative methods to obtain representative wind data. Meteorological information as extracted from “the Hong Kong Observatory King’s Park Station” is alternative method to obtain representative wind data. For King’s Park Station, it also can provide the humidity, rainfall, and air pressure and temperature etc. meteorological information. In Hong Kong of a lot development projects, weather information extracted from Hong Kong Observatory is common alternative method if weather station installation not allowed.
- 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 m/s. 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 or Rion NL-14
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 listed in Table 3-3, is a Tisch Environmental, Inc. Model TE-5170 TSP high volume air sampling system, which complied with EPA 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.
- 3.19 24-hour TSP is collected by the ET on filters of HVS and quantified by a local HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd (ALS), upon receipt of the samples. The ET keeps 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.

**Noise**

- 3.20 Sound level meter listed in **Table 3-4** comply 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), which was used for baseline noise monitoring.
- 3.21 The noise measurement is performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level (Leq). Leq(30min) in six consecutive Leq(5 min) 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 ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	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 E](#).

**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 AIR QUALITY MONITORING RESULTS

4.01 In the Reporting Period, **16** occasions of 24-hours TSP monitoring was carried out at the proposed location A1.

##### 24-HOUR TSP AIR QUALITY MONITORING RESULTS

4.02 The monitoring results are summarized in *Table 4-1*. The relevant graphical plots are shown in *Appendix F*.

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

Date	A1 - Balcony at 1/F of Chiu Hin Mansion		
	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
1-Mar-16	77	162	260
7-Mar-16	103		
12-Mar-16	76		
18-Mar-16	100		
24-Mar-16	162		
30-Mar-16	51		
5-Apr-16	51		
11-Apr-16	50		
16-Apr-16	78		
22-Apr-16	85		
28-Apr-16	65		
4-May-16	51		
10-May-16	57		
16-May-16	56		
21-May-16	90		
27-May-16	18		
Average (Range)	72 (18 - 162)		

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

4.04 In the Reporting Period, dust concentration of the minimum was measured on **27 May 2016** and maximum was measured on **24 March 2016**. Moreover, Average value in the Reporting Period is  $72 \mu\text{g}/\text{m}^3$ .

4.05 The summary of meteorological information during the Reporting Period is presented in *Appendix G*.

## 5 CONSTRUCTION NOISE MONITORING RESULTS

5.01 In the Reporting Period, total **28** occasion of construction noise measurement was 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 (+3 dB(A)) is added according to acoustical principles and EPD guidelines.

### NOISE MONITORING RESULTS

5.02 The noise measurement results at N1 and N2 are listed in *Table 5-1*. The relevant graphical plots are shown in *Appendix F*.

**Table 5-1 Summary of Noise Monitoring Results**

Measurement Date	L <sub>eq30min</sub> (dB(A))	
	N1 2/F floor of Hennessey Building	N2 Balcony at 1/F of Chiu Hin Mansion
1-Mar-16	73	67
8-Mar-16	72	72
15-Mar-16	66	73
22-Mar-16	70	73
30-Mar-16	74	69
5-Apr-16	65	73
12-Apr-16	73	69
19-Apr-16	70	73
26-Apr-16	75	74
3-May-16	74	71
10-May-16	74	69
17-May-16	70	73
24-May-16	71	73
31-May-16	69	74
<b>Limit Level of Construction Noise</b>	<b>75 dB(A)</b>	

4.01 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 G*.



## 6 WASTE MANAGEMENT

### GENERAL WASTE MANAGEMENT

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

### RECORDS OF WASTE QUANTITIES

6.02 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.

6.03 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 6-1* and *6-2* and the Summary of Waste Flow Table is shown in *Appendix H*.

**Table 6-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity			Disposal Location
	Mar 16	Apr 16	May 16	
Total C&D Materials (Inert) (m <sup>3</sup> )	0.03685	0.03399	0.09171	-
Reused in this Contract (Inert) (m <sup>3</sup> )	0	0	0	-
Reused in other Projects (Inert) (m <sup>3</sup> )	0	0	0	-
Disposal as Public Fill (Inert) (m <sup>3</sup> )	0.03685	0.03399	0.09171	TKO 137

**Table 6-2 Summary of Quantities of Non-Inert C&D Wastes**

Type of Waste	Quantity			Disposal Location
	Mar 16	Apr 16	May 16	
Recycled Metal (m <sup>3</sup> )	0	0	0	-
Recycled Paper / Cardboard Packing (m <sup>3</sup> )	0	0	0	-
Recycled Plastic (m <sup>3</sup> )	0	0	0	-
Chemical Wastes (m <sup>3</sup> /L)	0	0	0	-
General Refuses (m <sup>3</sup> )	0.001	0.001	0.001	SENT Landfill

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

**7 SITE INSPECTION**

7.01 According to the EMAP, weekly site inspection undertaken by the RE, ET and the Contractor to confirm the environmental performance. In the reporting Period, total of thirteen (13) occasions of weekly site inspection were undertaken.

**FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH**

7.02 During March 2016, **five (5)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **2, 11, 16, 23 and 30 March 2016** and the IEC was joined the site inspection on **16 March 2016**. No non-compliance was noted. However, four (4) observations and three (3) reminders were recorded by the ET.

7.03 During April 2016, **four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **8, 13, 20 and 27 April 2016** and the IEC was joined the site inspection on **20 April 2016**. No non-compliance was noted. However, two (2) observations and four (4) reminders were recorded by the ET

7.04 During May 2016, **four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **4, 13, 18 and 25 May 2016** and the IEC was joined the site inspection on **18 May 2016**. No non-compliance was noted. However, five (5) observations were recorded by the ET.

7.05 The detailed findings / deficiencies and follow-up in the Reporting Period listed in **Table 7-1**.

**Table 7-1 Site Observations**

<b>Date</b>	<b>Findings / Deficiencies</b>	<b>Follow-Up Status</b>
2 March 2016	<ul style="list-style-type: none"> <li>No adverse environmental issue was observed.</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>
11 March 2016	<ul style="list-style-type: none"> <li>The contractor was advised to improve the roadside shelter for grout mixing to avoid dust impact to the public.</li> <li>Free standing chemical without drip tray was observed. The Contractor should provide drip tray for chemical on site to prevent land contamination.</li> </ul>	<ul style="list-style-type: none"> <li>The grout mixer was removed from site.</li> <li>All free standing chemical cans without drip tray were removed from site.</li> </ul>
16 March 2016	<ul style="list-style-type: none"> <li>The contractor was advised to carry out maintenance work for the AquaSed to ensure the chemical process can be function properly.</li> </ul>	<ul style="list-style-type: none"> <li>To be followed up.</li> </ul>
23 March 2016	<ul style="list-style-type: none"> <li>The contractor was advised to keep the construction material clean at the public road outside the site boundary.</li> <li>The contractor was reminded to dispose the general refuse regularly.</li> </ul>	<ul style="list-style-type: none"> <li>The construction materials at the public road outside the site boundary was removed.</li> <li>Not required for reminder.</li> </ul>
30 March 2016	<ul style="list-style-type: none"> <li>The contractor was reminded to cover the roadside hoarding entirely.</li> <li>The contractor was reminded to dispose general refuse regularly.</li> </ul>	<ul style="list-style-type: none"> <li>Not required for reminder.</li> <li>Not required for reminder.</li> </ul>

Date	Findings / Deficiencies	Follow-Up Status
8 April 2016	<ul style="list-style-type: none"> <li>No adverse environmental issue was observed.</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>
13 April 2016	<ul style="list-style-type: none"> <li>The contractor should provide proper tree protection zone for retained trees.</li> <li>The contractor was reminded to cover construction storage area with tarpaulin sheets.</li> </ul>	<ul style="list-style-type: none"> <li>Proper tree protection zone was provided for retained trees.</li> <li>Not required for reminder.</li> </ul>
20 April 2016	<ul style="list-style-type: none"> <li>The contractor was advised to clear the mud trails on the entry/exit area.</li> <li>The contractor was reminded to dispose construction waste regularly.</li> </ul>	<ul style="list-style-type: none"> <li>The mud trails on the entry/exit area were removed.</li> <li>Not required for reminder.</li> </ul>
27 April 2016	<ul style="list-style-type: none"> <li>The contractor was reminded to update the EP at the entrance.</li> <li>The contractor was reminded to provide shoes washing tank at site office near Johnston road.</li> </ul>	<ul style="list-style-type: none"> <li>Not required for reminder.</li> <li>Not required for reminder.</li> </ul>
4 May 2016	<ul style="list-style-type: none"> <li>The Contractor was advised to dispose construction waste and general waste regularly.</li> </ul>	<ul style="list-style-type: none"> <li>Construction waste was disposed regularly.</li> </ul>
13 May 2016	<ul style="list-style-type: none"> <li>The Contractor was should provide better cover for the grout mixer to reduce dust impact.</li> <li>The Contractor should block the gaps of water barriers at area H14 to ensure no construction material is outside the construction area.</li> </ul>	<ul style="list-style-type: none"> <li>Item was followed on 18 May 2016.</li> <li>Water barriers was covered properly.</li> </ul>
18 May 2016	<ul style="list-style-type: none"> <li>The Contractor was should provide better cover for the grout mixer to reduce dust impact.</li> <li>The contractor was advised to dispose empty cement bags regularly.</li> </ul>	<ul style="list-style-type: none"> <li>The grout mixer was removed from site.</li> <li>The empty cement bags was disposed.</li> </ul>
25 May 2016	<ul style="list-style-type: none"> <li>The contractor was advised to provide proper tree protection zone for retained trees.</li> </ul>	<ul style="list-style-type: none"> <li>To be follow-up in next reporting period.</li> </ul>

7.06 No site inspection was undertaken by external parties i.e. EPD in the Reporting Period.

## 8 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

### ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.01 In the Reporting Period, no environmental complaint, summons and prosecution are received by either the EPD or MTRCL or the Main Contractor. The statistical summary table of environmental complaint is presented in *Tables 8-1, 8-2 and 8-3*.

**Table 8-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
1– 31 Mar 2016	0	0	NA	NA	NA	NA
1– 30 Apr 2016	0	0	NA	NA	NA	NA
1– 31 May 2016	0	0	NA	NA	NA	NA

**Table 8-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
1– 31 Mar 2016	0	0	NA	NA	NA	NA
1– 30 Apr 2016	0	0	NA	NA	NA	NA
1– 31 May 2016	0	0	NA	NA	NA	NA

**Table 8-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
1– 31 Mar 2016	0	0	NA	NA	NA	NA
1– 30 Apr 2016	0	0	NA	NA	NA	NA
1– 31 May 2016	0	0	NA	NA	NA	NA

**9 IMPLEMENTATION STATUS OF MITIGATION MEASURES**

9.01 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 I*.

**MITIGATION MEASURES UNDERTAKE IN THE REPORTING PERIOD**

9.02 In the Reporting Period, the environmental mitigation measures implemented by the Contractor are listed in *Table 9-1*.

**Table 9-1 Summary of Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Air Quality	<ul style="list-style-type: none"> <li>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>• Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet;</li> <li>• Public areas around the site entrance/exit had been kept clean and free from dust; and</li> <li>• Tarpaulin covering of any dusty materials on a vehicle leaving the site.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Good site practices to limit noise emissions at the sources;</li> <li>• Use of quiet plant and working methods;</li> <li>• Use of site hoarding or other mass materials as noise barrier to screen the working site;</li> <li>• Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs; and</li> <li>• Limiting as use one construction plant within worksite, where practicable.</li> </ul>
Water Quality	<ul style="list-style-type: none"> <li>• Wastewater were appropriately treated by treatment facilities;</li> <li>• Drainage channels were provided to convey run-off into the treatment facilities; and</li> <li>• Drainage systems were regularly and adequately maintained.</li> </ul>
Waste and Chemical Management	<ul style="list-style-type: none"> <li>• 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;</li> <li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li> <li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designed public filling facility and/or landfill; and</li> <li>• Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li> </ul>
Landscape and Visual	<ul style="list-style-type: none"> <li>• Clear demarcation of works area to prevent damages to existing trees in close proximity;</li> <li>• Protection of all trees planned to be retained onsite;</li> <li>• 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</li> <li>• Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colours.</li> </ul>
General	<ul style="list-style-type: none"> <li>• The site was generally kept tidy and clean.</li> </ul>

9.03 In addition, mosquito control measures to prevent mosquito breeding on site are conducted in the Reporting Period.

## **10 CONCLUSIONS AND RECOMMENDATIONS**

10.01 This is the 7<sup>th</sup> Quarterly EM&A Summary Report presenting the monitoring results and inspection findings in the Reporting Period from **1 March 2016** to **31 May 2016**.

### **CONCLUSION**

10.02 In the Reporting Period, **16** occasions of 24-hours TSP monitoring was conducted at the proposed Monitoring Location A1. The monitoring results are all below the Action/ Limit Level. No Notifications of Exceedances (NOEs) or the associated corrective actions were therefore issued.

10.03 In the Reporting Period, a total of **28** occasions of noise measurement was conducted at N1 and N2 and no noise measurement result is higher than 75dB(A) was recorded. Furthermore, no noise complaint (which is an Action Level exceedance) was received.

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

10.05 A total of thirteen (13) occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor in the Reporting Period. Moreover, the IEC attended the site inspections on **16 March 2016**, **20 April 2016** and **18 May 2016**. In the Reporting Period, no non-compliance was noted and total 11 observations were recorded by the ET. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was considered as satisfactory in this reporting period.

10.06 In the Reporting Period, no joint site inspection was attended by external parties i.e. EPD.

### **RECOMMENDATIONS**

10.07 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.

10.08 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.

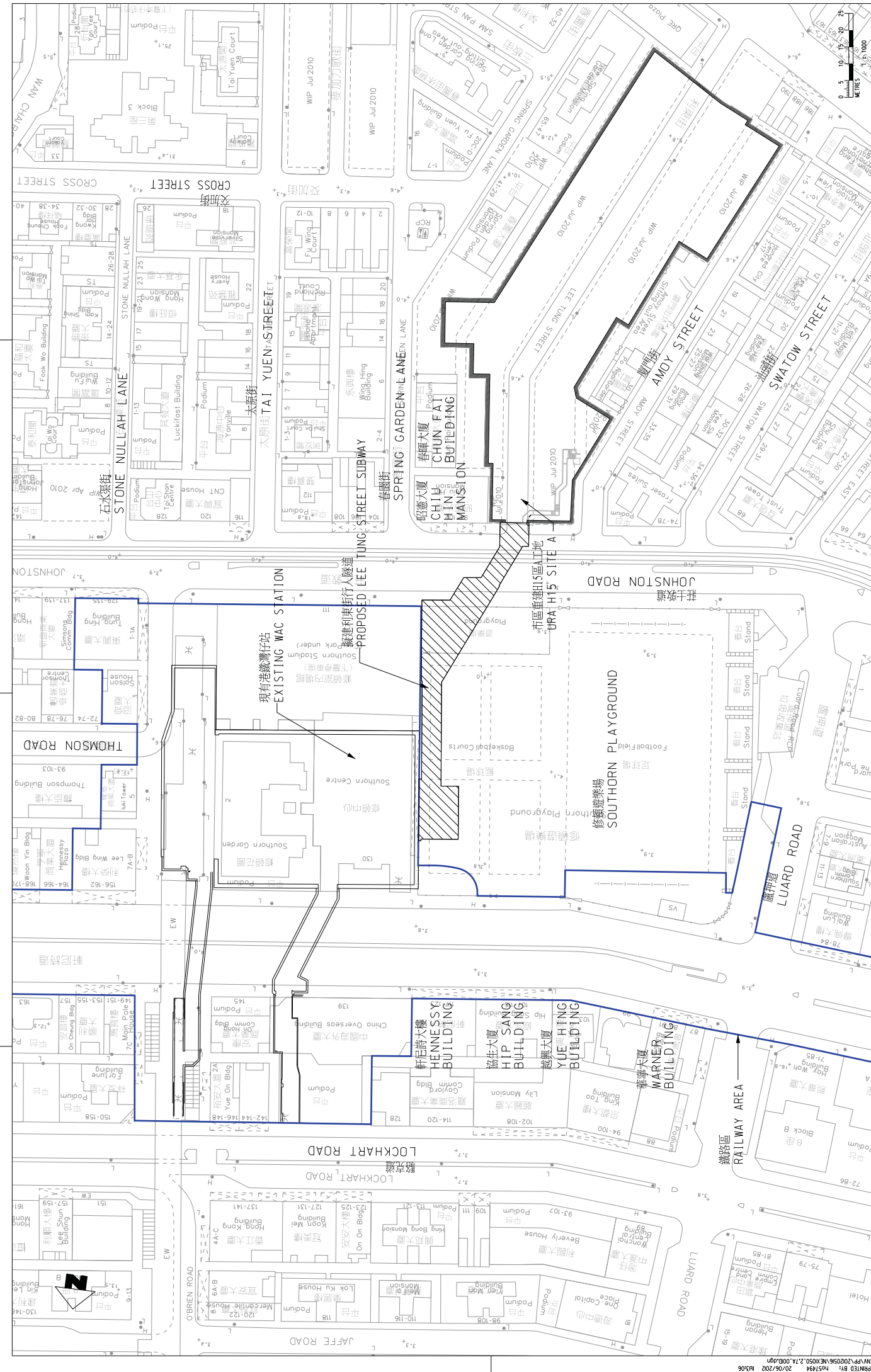
10.09 The Contractor should also prevent muddy water and other water pollutants via site surface water runoff get into public areas. Any discharge water should be strictly complied with wastewater discharge license requirement. As a reminder, water quality mitigation measures should be properly implemented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

10.10 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**





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

**MTR**  
 WAC STATION LEE TUNG STREET SUBWAY  
 ORIGINATOR  
 Mott MacDonald  
 SCALE: 1:1,000 (A3)  
 DRAWING NO. NEX1050/2.7A/001  
 REV. D

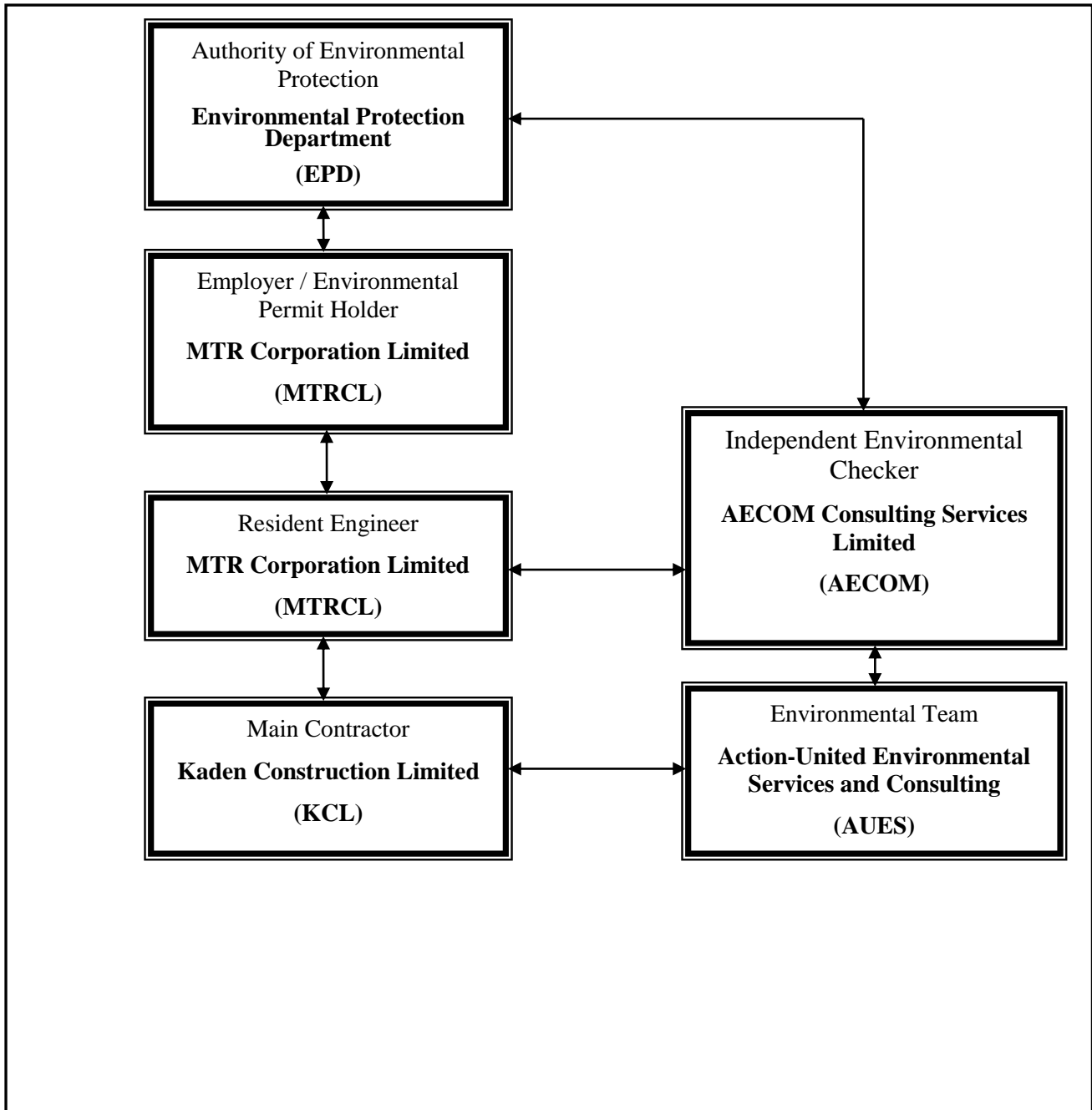
NO.	REVISION	DATE	BY	DESCRIPTION
A	PROJECT PROFILE			
B	GENERAL REVISION			
C	GENERAL REVISION			
D	GENERAL REVISION			

NO.	DATE	BY	DESCRIPTION
04MAY2011			APPROVED
12AUG11			CHECKED
18JUL11			DATE
04MAY2011			AFK
04MAY2011			AFK
04MAY2011			AFK

## **Appendix B**

### **Organization of the Project**



**Contact Details of Key Personnel for the Project**

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
MTRCL	Resident Engineer	Mr. Raymond Lee	3547 0002	3547 0090
AECOM	Independent Environmental Checker	Mr. Y. W. Fung	3922 9366	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 C**

### **Master Construction Programme**



MTR Contract C6593-13C  
Wan Chai Station Lee Tung Street Subway  
3 Months Rolling Programme

ID	Task Name	PMP ID	Centre	Duration	Start	Finish	% Complete	Planned Start Last Month	Planned Finish Last Month	Redressor
1	Stage 2 ELS (Phase 1 Pump test)			422 days	Mon 13/4/15	Fri 9/9/16	83%	Mon 13/4/15	Sat 27/8/16	
20	Mini-piles at Eastbound	JnR.EBC_SS_0050	B5	150 days	Mon 23/11/15	Sat 28/5/16	100%	Mon 23/11/15	Thu 19/5/16	
26	RC works for Main beam and cross beams for RC decking		B5	43 days	Sat 12/3/16	Fri 6/5/16	100%	Sat 12/3/16	Wed 4/5/16	32
27	Excavation for temporary traffic deck footing		B5	8.2 days	Thu 17/3/16	Mon 16/5/16	100%	Thu 17/3/16	Tue 10/5/16	26
28	Erect temporary traffic deck		B5	6 days	Sat 21/5/16	Fri 27/5/16	100%	Tue 10/5/16	Wed 18/5/16	27
29	Implementation of TTA to Eastbound Slow Lane		B5	1 day	Sat 28/5/16	Sat 28/5/16	100%	Sat 28/5/16	Thu 18/5/16	28
30	Preparation for Phase 1 Pump Test		B6	11 days	Mon 29/2/16	Fri 11/3/16	100%	Mon 29/2/16	Fri 11/3/16	
31	Pump Wells & Observation Wells at Eastbound Footpath	JnR_0020	B6	6 days	Mon 29/2/16	Sat 5/3/16	100%	Mon 29/2/16	Sat 5/3/16	
32	Pump Well & Observation Well at Eastbound	JnR_0020	B6	5 days	Mon 7/3/16	Fri 11/3/16	100%	Mon 7/3/16	Fri 11/3/16	31
33	Eastbound Footpath & Slow Lane		B6	47 days	Mon 30/5/16	Mon 25/7/16	20%	Thu 19/5/16	Tue 12/7/16	
34	Removal of temporary working platform at Stage 1	NA	B6	6 days	Sat 4/6/16	Mon 21/6/16	50%	Thu 19/5/16	Thu 26/5/16	29
35	Breaking temporary concrete carriageway at slow lane	NA	B6	6 days	Mon 30/5/16	Sat 4/6/16	100%	Thu 19/5/16	Mon 23/5/16	29
36	Excavation to existing UU formation	JnR_0050	B6	6 days	Mon 6/6/16	Mon 13/6/16	25%	Mon 30/5/16	Mon 30/5/16	35
37	Temp. UU supports	JnR_0050	B6	5 days	Tue 14/6/16	Sat 18/6/16	0%	Mon 30/5/16	Sat 4/6/16	36
38	Excavation to -1.0 mPD	JnR_0050	B6	30 days	Mon 20/6/16	Mon 25/7/16	0%	Mon 30/5/16	Tue 12/7/16	37
39	Tram Track RC Decking		B5	422 days	Mon 13/4/15	Fri 9/9/16	63%	Mon 13/4/15	Sat 27/8/16	
40	RC cross beams	JnR.TT_0110	B5	35 days	Mon 13/4/15	Sat 23/5/15	100%	Mon 13/4/15	Sat 23/5/15	
41	Coiling for grout curtain	JnR.TT_0030	B5	20 days	Wed 13/5/15	Fri 5/6/15	100%	Wed 13/5/15	Fri 5/6/15	
42	Reinstate of concrete surround to rails	JnR.TT_0120	B5	1 day	Sat 6/6/15	Sat 6/6/15	100%	Sat 6/6/15	Sat 6/6/15	40.41
43	Grouting for TAM pipes	JnR.TT_0030	B5	12 days	Tue 20/10/15	Tue 31/11/15	100%	Tue 20/10/15	Tue 31/11/15	
44	Excavation to +1.0 mPD underneath Trams Deck	JnR_0050	B7	6 days	Tue 28/7/16	Mon 18/8/16	0%	Tue 12/7/16	Tue 19/7/16	75.38
45	Pre-grouting for Soil Nail	JnR_0050	B7	8 days	Tue 2/8/16	Wed 10/8/16	0%	Tue 19/7/16	Thu 28/7/16	44
46	Shotcrete and Soil Nail at +1.0 mPD	JnR_0050	B7	8 days	Thu 11/8/16	Fri 19/8/16	0%	Thu 28/7/16	Sat 6/8/16	45
47	Installation of w/s at 1st layer strut S3	JnR_0050	B7	3 days	Sat 20/8/16	Tue 23/8/16	0%	Sat 6/8/16	Wed 10/8/16	46
48	Installation of soil nails	JnR_0050	B7	15 days	Wed 24/8/16	Fri 9/9/16	0%	Wed 10/8/16	Sat 27/8/16	47
61	Westbound Slowlane		B6	40 days	Mon 25/1/16	Mon 14/3/16	100%	Mon 25/1/16	Sat 13/3/16	
68	1st Phase Pumping Test	JnR_0020	B6	5 days	Tue 15/3/16	Sat 19/3/16	100%	Tue 15/3/16	Sat 19/3/16	43,32.67
69	Mini-piles at Westbound Slowlane		B6	39 days	Thu 24/3/16	Fri 13/5/16	59%	Thu 24/3/16	Fri 13/5/16	
70	Drilling for Mini-piles (1 no)	JnR.WBC_0090	B6	8 days	Thu 24/3/16	Wed 6/4/16	100%	Thu 24/3/16	Wed 6/4/16	68
71	Drilling for Mini-piles (2 no)	JnR.WBC_0090	B6	6 days	Thu 7/4/16	Wed 13/4/16	100%	Thu 7/4/16	Wed 13/4/16	70
72	Rebar and Grout Tubes installation for mini-piles	JnR.WBC_0100	B6	2 days	Thu 14/4/16	Fri 15/4/16	100%	Thu 14/4/16	Fri 15/4/16	71
73	Grouting for mini-piles	JnR.WBC_0110	B6	1 day	Sat 19/4/16	Sat 19/4/16	100%	Sat 19/4/16	Sat 19/4/16	72
74	Post-drill for Mini-piles	JnR.WBC_0110	B6	5 days	Mon 18/4/16	Fri 22/4/16	100%	Mon 18/4/16	Fri 22/4/16	73
75	RC works for Main beam and cross beams for RC decking	JnR.WBC_0130	B6	17 days	Sat 23/4/16	Fri 13/5/16	6%	Sat 23/4/16	Fri 13/5/16	74
76	Children Playground		B7	34 days	Wed 27/4/16	Tue 7/6/16	78%	Wed 27/4/16	Thu 2/6/16	
77	Trial soil nail		B7	19 days	Wed 27/4/16	Fri 20/5/16	100%	Wed 27/4/16	Mon 16/5/16	
78	Bulk Excavation to +1.0 mPD		B7	15 days	Sat 21/5/16	Tue 7/6/16	50%	Tue 17/5/16	Thu 2/6/16	77
79	Stage 3 ELS			66 days	Sat 9/1/16	Fri 14/4/16	100%	Sat 9/1/16	Fri 14/4/16	
80	RC Structures for Stage 3			66 days	Sat 9/1/16	Fri 14/4/16	100%	Sat 9/1/16	Fri 14/4/16	
89	Walls 1st pour			33 days	Mon 25/1/16	Sat 5/3/16	100%	Mon 25/1/16	Sat 5/3/16	
97	Walls 2nd pour and top slab			20 days	Mon 7/3/16	Fri 14/4/16	100%	Mon 7/3/16	Fri 14/4/16	
105	ABWF works inside subway			30 days	Tue 3/5/16	Tue 7/6/16	0%	Tue 3/5/16	Tue 7/6/16	
106	Floor screeding			30 days	Tue 3/5/16	Tue 7/6/16	0%	Tue 3/5/16	Tue 7/6/16	
107	Existing Wan Chai Station (Require work in NTH)			91 days	Mon 21/12/15	Fri 15/4/16	86%	Mon 21/12/15	Fri 15/4/16	
108	New Audit Room			91 days	Mon 21/12/15	Fri 15/4/16	86%	Mon 21/12/15	Fri 15/4/16	
113	Installation and divert E&M Service	WWW.AFC_0030	D1	39 days	Fri 26/2/16	Fri 15/4/16	100%	Fri 26/2/16	Fri 15/4/16	112
114	ABWF Works	WWW.AFC_0030	D1	28 days	Mon 22/2/16	Tue 22/3/16	80%	Mon 22/2/16	Tue 22/3/16	111
115	Removal of Hoarding	WWW.AFC_0030	D1	3 days	Wed 23/3/16	Tue 29/3/16	0%	Wed 23/3/16	Tue 29/3/16	114
116	Reinstatement Works	WWW.AFC_0030	D1	11 days	Wed 30/3/16	Tue 12/4/16	0%	Wed 30/3/16	Tue 12/4/16	115
117	Design			28 days	Sat 5/3/16	Mon 11/4/16	95%	Sat 5/3/16	Mon 11/4/16	
118	ELS Stage 2 - BDI/GEO comments on 5 Mar 16	NA	A1	28 days	Sat 5/3/16	Mon 11/4/16	95%	Sat 5/3/16	Mon 11/4/16	

Task Progress Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Task Progress Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Project Summary

Group By Summary

Deadline

Page 1



Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float	2017												2018											
									2017				2018				2019				2020				2017				2018			
<b>C6593-13C LTS MP Rev.C_BL_Report (May'16)</b>																																
<b>Key Dates</b>																																
<b>Comment and Completion</b>																																
KD.COMM	Commencement of the Works (14-Apr'14)	0	14-Apr-14	29-Mar-18*	14-Apr-14	25-Feb-17	-396	0																								
KD.COMP	Completion of the Whole of the Works. No Cal.Wk. 150 (28-Feb'17)	0																														
<b>Specified Parts of the Works</b>																																
KD.2A	2A - SBC Complete backfill, resurfacing, fencing, utilities, lighting and return to LCSD (28-Jun'15)	0	11-Aug-15	06-Jun-17*	27-Jun-15	27-Apr-16	-401	296																								
KD.2B	2B - Complete all works at the 2 new Shop Kiosks and hand over to the Employer (1-May'16)	0	09-Jun-16*	03-Jun-17*	27-Apr-15	31-Jul-16	-269	665																								
<b>Programme Data / Interface Key Dates</b>																																
INF.AFC	Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Level (27-Apr'15)	0	31-Mar-17*	-32	31-Jul-16	31-Jul-16	364																									
INF.H15	Interface Access for Contract H15, All Levels, No Cal.Wk. 120 (31-Jul'16)	0	09-Jun-17*	-102	10-Oct-16	10-Oct-16	294																									
INF.SAMS	Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'16)	0																														
<b>Site Area Possession and Return Dates</b>																																
<b>Site Area Possession Date</b>																																
WAP.W1	Works Area 6593.W1, Within 3 months from commencement of works (14-Jul'14)	0	14-Jul-14	08-Mar-17*	14-Jul-14	16-Dec-16	-82	0																								
WAP.W2	Works Area 6593.W2, Within 9 months from commencement of works (14-Jan'15)	0	31-May-16*	24-Oct-16*	07-Jul-15	21-Oct-16*	125	521																								
WAP.W3	Works Area 6593.W3, No later than 1 month after completion of reinstatement works at Works Area 65	0	02-Apr-17	19-May-17	10-Jan-17	26-Feb-17	-82	314																								
<b>Site Area Return Date</b>																																
WAR.W1	Works Area 6593.W1, Within 36 months from commencement of works (14-Apr'17)	0																														
WAR.W2	Works Area 6593.W2, Within 36 months from commencement of works (14-Apr'17)	0																														
WAR.W3	Works Area 6593.W3, Within 2 months after possession date of Works Area 6593.W3	0																														
<b>Milestone Schedule</b>																																
<b>Milestones A</b>																																
MS.A01	A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporary decking (3-Aug'14)	0	21-Oct-14	02-Aug-14	02-Aug-14	02-Aug-14																										
MS.A02	A2 Approval of Design of Mined Tunnel ESS: Hoarding phase/plan; TW under Tram Track; OP, SAP, PMP	0	01-Nov-14	01-Nov-14	01-Nov-14	01-Nov-14																										
MS.A03	A3 Satisfactory Implementation of Specified Plans (25-Jan'15)	0	24-Jan-15	24-Jan-15	24-Jan-15	24-Jan-15																										
MS.A04	A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15)	0	02-May-15	02-May-15	02-May-15	02-May-15																										
MS.A05	A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15)	0	30-Sep-15	30-Sep-15	30-Sep-15	30-Sep-15																										
MS.A06	A6 Satisfactory Implementation of PMS (1-Nov'15)	0	30-Jan-16	30-Jan-16	30-Jan-16	30-Jan-16																										
MS.A07	A7 Satisfactory Implementation of Specified Plans (31-Jan'16)	0	27-Apr-17	27-Apr-17	30-Apr-16	30-Apr-16	-60	336																								
MS.A08	A8 AIP for T&C of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)	0	30-Jul-16	30-Jul-16	30-Jul-16	30-Jul-16																										
MS.A09	A9 Satisfactory Implementation of Specified Plans (31-Jul'16)	0	26-Oct-17	26-Oct-17	29-Oct-16	29-Oct-16	-242	154																								
MS.A10	A10 AIP of Draft O&M manual and Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct)	0	22-Feb-18	22-Feb-18	22-Feb-17	22-Feb-17	-361	35																								
MS.A11	A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17)	0																														
<b>Milestones B</b>																																
MS.B01	B1 Excavate to +2.5 of Southern Basketball Court & Children's Play Area - Cofferdam construction comp	0	01-Nov-14	01-Nov-14	01-Nov-14	01-Nov-14																										
MS.B02	B2 SBC Excavation satisfactorily completed & Children's Play Area Excavation has reached -1.3mPD (2)	0	24-Jan-15	24-Jan-15	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 diversik	0	29-Apr-15	29-Apr-15	02-May-15	02-May-15																										
MS.B04	B4 SBC return, NBC Site entry formed, CPA RC base slab, JNR NFP & EBC Cofferdam & traffic decks c	0	11-Aug-15	11-Aug-15	31-Oct-15	31-Oct-15																										
MS.B05	B5 NBC cofferdam complete, CPA RC & vent shaft 1.2m above ground complete, Tram Tracks Excavati	0	05-Oct-16	05-Oct-16	30-Jan-16	30-Jan-16	145	541																								
MS.B06	B6 NBC Excavation to formation complete, JNR All Cartgeways & Footpaths & Tram Tracks Excavati	0	30-Dec-16	30-Dec-16	30-Apr-16	30-Apr-16	59	455																								
MS.B07	B7 NBC RC roof slab complete, JNR CW & FP & TT RC construction except temp opening, CPA RC con	0	31-Mar-17	31-Mar-17	30-Jul-16	30-Jul-16	-32	364																								
MS.B08	B8 ABWF Degree 1 achieved, NBC All reinstatement complete, Opening through H15 D-wall formed (31-	0	04-Jul-17	04-Jul-17	27-Oct-16	27-Oct-16	-127	289																								
MS.B09	B9 ABWF Degree 3 achieved, All road reinstatement in Johnston Road & Hennessy Road complete (30-	0	19-Oct-17	19-Oct-17	25-Feb-17	25-Feb-17	-234	162																								
MS.B10	B10 All works in Cost Centre B satisfactorily completed (26-Feb'17)	0																														
<b>Milestones C</b>																																
MS.C01	C1 AIP BS detail design, suppliers & model types of major BS equipment & materials (2-Nov'14)	0	01-Nov-14	01-Nov-14	01-Nov-14	01-Nov-14																										
MS.C02	C2 AIP BS shop drawings (25-Jan'15)	0	23-Jan-15	23-Jan-15	23-Jan-15	23-Jan-15																										
MS.C03	C3 Order all BS equipment and materials (3-May'15)	0	02-May-15	02-May-15	02-May-15	02-May-15																										
MS.C04	C4 Complete all factory acceptance testings (29-Nov'15)	0	28-Nov-15	28-Nov-15	28-Nov-15	28-Nov-15																										
MS.C05	C5 Complete all delivery to site for ECS plant room (31-Jul'16)	0	10-Jun-16	10-Jun-16	19-Mar-16	19-Mar-16	261	657																								
MS.C06	C6 Complete all installation, T&C for New Subway (4-Dec'16)	0	21-Jul-17	21-Jul-17	14-Nov-16	14-Nov-16	-144	252																								
MS.C07	C7 Complete and pass all statutory inspections, Operations Team (26-Feb'17)	0	29-Mar-18	29-Mar-18	25-Feb-17	25-Feb-17	-396	0																								
<b>Milestones D</b>																																
MS.D01	D1 New AFC Audit Room construction completed, including (3-May'15)	0	02-Jun-16	02-Jun-16	25-Apr-15	25-Apr-15	269	484																								
MS.D02	D2 Old AFC Audit Room and Maxims/ Circle K kiosks demolished (31-Jan'16)	0	08-Mar-17	08-Mar-17	28-Jan-16	28-Jan-16	-10	205																								
MS.D03	D3 Breakthrough into WAC (31-Jul'16)	0	29-Sep-17	29-Sep-17	30-Jul-16	30-Jul-16	-187	28																								
MS.D04	D4 All works in Cost Centre D satisfactorily completed (28-Aug'16)	0	29-Sep-17	29-Sep-17	27-Aug-16	27-Aug-16	-215	181																								
<b>Milestones E</b>																																
MS.E01	E1 - AFC gates and barrier relocation works completed (3-Jan'16)	0	10-Feb-17	10-Feb-17	02-Jan-16	02-Jan-16	16	412																								
MS.E02	E2 - All structural A&A works for TIM completed (30-Oct'16)	0	18-Nov-17	18-Nov-17	17-Oct-16	17-Oct-16	-265	131																								
MS.E03	E3 - All works in milestone E completed (26-Feb'17)	0	14-Mar-18	14-Mar-18	09-Feb-17	09-Feb-17	-381	15																								

**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**  
**Master Program (Rev.C)**  
 Progress vs Program (Updated Ending May'16)

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


◆ Milestone  
◆ Milestone  
◆ Milestone





Activity ID	Activity Name	Original Start Duration	Finish	BL Project Start	BL Project Finish	Total Float	Free Float	2014	2015	2016	2017	2018
<b>A: Preliminaries and General Items</b>												
<b>Cost Centre A: Milestone Schedules</b>												
A1_0010	A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporary Decking (3-Aug'14)	0	21-Oct-14 A	02-Aug-14								
A1_0020	Approval of Specified Plans (3-Aug'14)	0	01-Aug-14 A	01-Aug-14								
A1_0030	Approval of Independent Checking Engineer (3-Aug'14)	0	01-Aug-14 A	01-Aug-14								
A1_0040	Approval of the TTM Scheme by the Relevant Authorities (3-Aug'14)	0	27-Jun-14 A	01-Aug-14								
A1_0050	Approval for the design of ELS systems for cofferdams & temporary decking (3-Aug'14)	0	03-Mar-15 A	01-Aug-14								
A2_0010	A2 Approval Design of Mixed Tunnel, ESS, Hoarding, Phase/Plan, OP, SAP, PMP, H&SP, EMP (2-Nov'14)	0	16-Jan-15 A	01-Nov-14								
A2_0020	Approval of all designs of excavation support systems of the mined tunnel section (2-Nov'14)	0	28-Oct-14 A	01-Nov-14								
A2_0030	Approval of all method statements for Part B works (2-Nov'14)	0	30-Oct-14 A	01-Nov-14								
A2_0040	Engineer's confirmation of satisfactory implementation of Quality Plan (2-Nov'14)	0	01-Nov-14 A	01-Nov-14								
A2_0050	Engineer's confirmation of satisfactory implementation of System Assurance Plan (2-Nov'14)	0	01-Nov-14 A	01-Nov-14								
A2_0060	Engineer's confirmation of satisfactory implementation of Programming Management System (2-Nov'14)	0	01-Nov-14 A	01-Nov-14								
A2_0070	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (2-Nov'14)	0	01-Nov-14 A	01-Nov-14								
A2_0080	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (2-Nov'14)	0	01-Nov-14 A	01-Nov-14								
A3_0010	A3 Satisfactory Implementation of Specified Plans (25-Jan'15)	0	24-Jan-15 A	24-Jan-15								
A3_0020	Engineer's confirmation of satisfactory implementation of System Assurance Plan (25-Jan'15)	0	24-Jan-15 A	24-Jan-15								
A3_0030	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (25-Jan'15)	0	24-Jan-15 A	24-Jan-15								
A3_0040	Engineer's confirmation of satisfactory implementation of Quality Plan (25-Jan'15)	0	24-Jan-15 A	24-Jan-15								
A3_0050	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (25-Jan'15)	0	24-Jan-15 A	24-Jan-15								
A4_0010	A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15)	0	21-Apr-15 A	02-May-15								
A4_0020	Approval for method of excavation & support for mined tunnel section beneath tram tracks (3-May'15)	0	02-May-15 A	02-May-15								
A5_0010	A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15)	0	21-Jul-15 A	01-Aug-15								
A5_0020	Approval for method for demolition of WAC Diaphragm Wall (2-Aug'15)	0	30-Sep-15 A	01-Aug-15								
A6_0010	A6 Satisfactory Implementation of PMS (1-Nov'15)	0	30-Sep-15 A	31-Oct-15								
A7_0010	A7 Satisfactory Implementation of Specified Plans (31-Jan'16)	0	30-Jan-16 A	30-Jan-16								
A8_0010	A8 AIP for BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)	0	03-Mar-16 A	30-Apr-16								
A8_0020	Approval in principle of all procedures for Testing & Commissioning of all Building Services (1-May'16)	0	27-Apr-17	27-Apr-17								
A8_0030	Approval in principle of all acceptance procedures of all of the ABWF works (1-May'16)	0	27-Apr-17	27-Apr-17								
A9_0010	A9 Satisfactory Implementation of Specified Plans (31-Jul'16)	0	30-Jul-16	30-Jul-16								
A9_0020	Engineer's confirmation of satisfactory implementation of System Assurance Plan (31-Jul'16)	0	30-Jul-16	30-Jul-16								
A9_0030	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (31-Jul'16)	0	30-Jul-16	30-Jul-16								
A9_0040	Engineer's confirmation of satisfactory implementation of Quality Plan (31-Jul'16)	0	30-Jul-16	30-Jul-16								
A9_0050	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (31-Jul'16)	0	30-Jul-16	30-Jul-16								
A10_0010	A10 AIP Draft O&M manual & Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct'16)	0	29-Oct-16	29-Oct-16								
A10_0020	Approval in principle of draft Operating & Maintenance Manuals for the Whole Works (30-Oct'16)	0	26-Oct-17	27-Oct-16								
A10_0030	Approval in principle of draft As-built Drawings for the Whole Works (30-Oct'16)	0	26-Oct-17	27-Oct-16								
A11_0010	A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17)	0	22-Feb-18	22-Feb-17								
A11_0020	Approval of As-built drawings for Whole Works (26-Feb'17)	0	22-Feb-18	22-Feb-17								
<b>Cost Centre A: Preliminaries and General Items</b>												
<b>Design, ICE, TMLG Submission and Approval</b>												
D.I.T_0010	Design, ICE, TMLG Submission and Approval, ref. ITT 6.2	4	14-Apr-14 A	14-Apr-14								
D.I.T_0020	TTMS - Submission to Members of TMLG for Approval, ref. ITT 6.2	55	22-Apr-14 A	22-Apr-14								
<b>Design, ICE, BD Submission and Approval</b>												
D.I.T_0030	A1 - ELS & Temporary Decking - Design, ICE, Submission to BD for Approval	30	14-Apr-14 A	14-Apr-14								
D.I.T_0040	A1 - ELS & Temporary Decking - Review the submission	30	12-Aug-14 A	24-May-14								
D.I.T_0050	A1 - ELS & Temporary Decking - Preparation of re-submission (if Required)	14	17-Sep-14 A	30-Jun-14								
D.I.T_0060	A1 - ELS & Temporary Decking - BD Review, Re-submission if required, and Approval (if Required)	14	24-Sep-14 A	03-Mar-15 A								
D.I.T_0070	A1 - ELS - Verification based on 4 additional SI, AD-01 to AD-04, ICE	17	29-Jul-14 A	16-Aug-14 A								
D.I.T_0080	A1 - ELS - Verification based on 4 additional SI, AD-01 to AD-04, ICE, Submission & Approval	30	14-Apr-14 A	15-Sep-14 A								
D.I.T_0090	Independent Checking Engineer - Preparation & Submission for Approval	30	24-May-14 A	23-May-14 A								
D.I.T_0100	Independent Checking Engineer - Review the submission	14	30-Jun-14 A	16-Jul-14 A								
D.I.T_0110	Independent Checking Engineer - Preparation of re-submission (if Required)	14	30-Jun-14 A	16-Jul-14 A								

**Contract C6593-13C Wan Chai Station Lee Tung Street Subway**  
**Master Program (Rev.C)**  
 Progress vs Program (Updated Ending May'16)

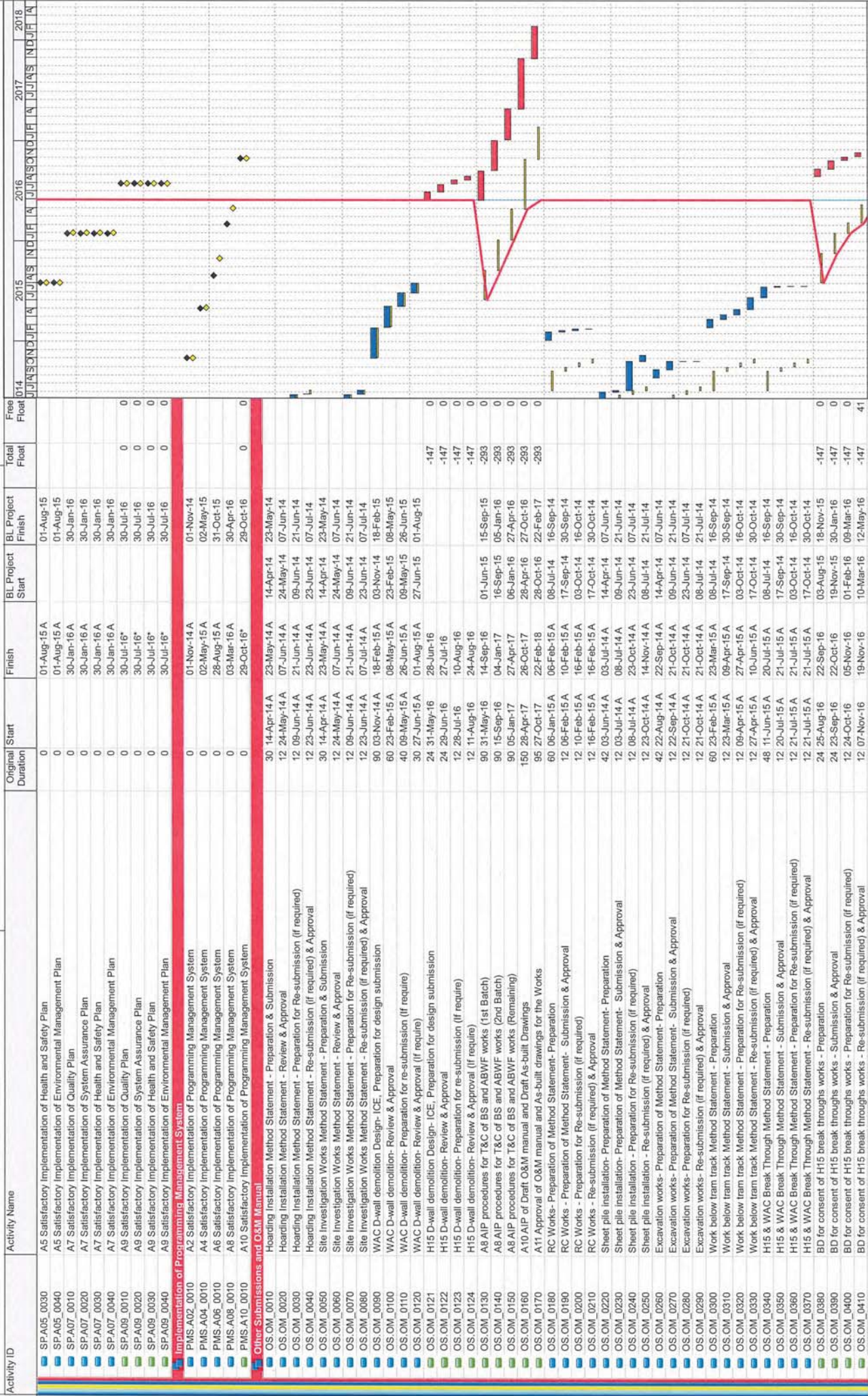


◆ Actual Level of Effort  
◆ Primary Baseline  
◆ Milestone  
◆ Actual Work  
◆ Remaining Work  
◆ Critical Remaining Work









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

Master Program (Rev.C)

Progress vs Program (Updated Ending May'16)





Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
OS_0M_0420	Submit and obtain AIP for Method Statement, EDOC Draft, Permanent Materials	60	31-Jul-15 A	10-Oct-15 A	31-Oct-14	12-Jan-15		
<b>Permit Applications</b>								
PA_0010	XP Excavation Permit Application and Permit	70	14-Apr-14 A	10-Jun-14 A	14-Apr-14	11-Jul-14		
PA_0020	TRA Tree Removal Application and Permit	6	14-Apr-14 A	15-Jul-14 A	14-Apr-14	23-Apr-14		
PA_0030	Liason with all utility service providers on divisions	42	14-Apr-14 A	14-Apr-14	14-Apr-14	07-Jun-14		
PA_0040	Baseline noise monitoring report - Preparation & submission to Engineer and EPD	30	23-Jun-14 A	28-Jun-14 A	14-Apr-14	23-May-14		
PA_0050	Baseline noise monitoring report - Review & Approval	30	30-Jun-14 A	09-Jul-14 A	24-May-14	28-Jun-14		
PA_0060	Baseline noise monitoring report - Preparation for Re-submission (If Require)	14	23-Jun-14 A	28-Jun-14 A	30-Jun-14	16-Jul-14		
PA_0070	Baseline noise monitoring report - Review and Approval (If Require)	14	30-Jun-14 A	09-Jul-14 A	17-Jul-14	01-Aug-14		
PA_0080	Baseline air monitoring report - Preparation & submission to Engineer and EPD	30	23-Jun-14 A	28-Jun-14 A	14-Apr-14	23-May-14		
PA_0090	Baseline air monitoring report - Review & Approval	30	30-Jun-14 A	09-Jul-14 A	24-May-14	28-Jun-14		
PA_0100	Baseline air monitoring report - Preparation for Re-submission (If Require)	14	10-Jul-14 A	10-Jul-14 A	30-Jun-14	16-Jul-14		
PA_0110	Baseline air monitoring report - Review and Approval (If Require)	14	10-Jun-14 A	11-Jul-14 A	17-Jul-14	01-Aug-14		
<b>Cost Centre B - Milestone Schedules</b>								
<b>B : Civil, Structural and ABWF Works for the New Subway (Part A Works)</b>								
<b>B1 Excavate to +2.5 of SBC &amp; Children's Play Area Cofferdam completed (2-Nov'14)</b>								
MSB01_01	Southern Basket Ball Court: excavate to +2.5mPD (2-Nov'14)	0		01-Nov-14 A		01-Nov-14		
MSB01_02	Children's Play Area - Cofferdam construction is completed (2-Nov'14)	0		25-Oct-14 A		25-Oct-14		
<b>B2 SBC Excavation complete &amp; Children's Play Area Excavation to -1.3mPD (25-Jan'15)</b>								
MSB02_01	Southern Basket Ball Court: Excavation is satisfactorily completed (25-Jan'15)	0		16-Jan-15 A		24-Jan-15		
MSB02_02	Children's Play Area: Excavation has reached -1.3mPD (25-Jan'15)	0		24-Jan-15 A		24-Jan-15		
<b>B3 SBC RC Roof, Jnr NFP &amp; EBC 37% Cofferdam, Jnr WBC IU div complete (3-May'15)</b>								
MSB03_01	Southern Basket Ball Court: Roof slab construction has been satisfactorily completed (3-May'15)	0		28-Apr-15 A		02-May-15		
MSB03_02	Johnston Road North Footpath and East-bound Carriageway: 67% of cofferdam installation complete (3-May'15)	0		09-May-15 A		27-Apr-15		
MSB03_03	Johnston Road West-bound Carriageway - All utility diversions, where required, satisfactorily completed (3-May'15)	0		21-Mar-15 A		21-Mar-15		
MSB03_04	10% completed of tram track support (3-May'15)	0		29-Apr-15 A		02-May-15		
<b>B4 SBC return, NBC Site entry, CPA base, Jnr NFP &amp; EBC Cofferdam, &amp; decks complete (2-Aug'15)</b>								
MSB04_01	Southern Basket Ball Court: Playing surface has been returned to LCSO for use (2-Aug'15)	0		11-Aug-15 A		27-Jun-15		
MSB04_02	Northern Basket Ball Court: Site entry onto Hennessy Road has been formed (2-Aug'15)	0		15-Aug-15 A		31-Jul-15		
MSB04_03	Children's Play Area: RC construction of the base slab, except at trucking out point, complete (2-Aug'15)	0		17-Jul-15 A		31-Jul-15		
MSB04_04	Jnr N-Footpath & E-Bound Carriageway: Cofferdam construction complete & all temp traffic decks installed (2-Aug'15)	0		31-May-16		29-Jul-15		
<b>B5 NBC Cofferdam, CPA RC &amp; vent shaft 1.2m above GL, Tram Tracks Excavation to +0.0mPD (4-Nov'15)</b>								
MSB05_01	Northern Basket Ball Court: Satisfactorily complete construction of the cofferdam (1-Nov'15)	0		18-Dec-16 A		30-Oct-15		
MSB05_02	Children's Play Area: RC construction complete include above ground vent shaft structures 1.2m above GL (1-Nov'15)	0		10-Jun-16		31-Oct-15		
MSB05_03	Tram Tracks - Excavation to +0.0 mPD is satisfactorily completed (1-Nov'15)	0		29-Jun-16		24-Oct-15		
<b>B6 NBC Excavation to formation, Jnr Excavation complete (31-Jan'16)</b>								
MSB06_01	Northern basket Ball Court - Excavation to final formation has been satisfactorily completed (31-Jan'16)	0		28-Dec-15 A		29-Jan-16		
MSB06_02	Johnston Road All Carriageways, Footpaths & Tram Tracks: Excavation is completed (31-Jan'16)	0		05-Oct-16		30-Jan-16		
<b>B7 NBC RC roof, Jnr CW &amp; FP &amp; TT RC construction exp temp opening, CPA RC complete (1-May'16)</b>								
MSB07_01	Northern Basket Ball Court: RC construction of the roof slab has been completed (1-May'16)	0		01-Apr-16 A		30-Apr-16		
MSB07_02	Jnr Carriageways, Footpaths & Tram Tracks: RC construction, except at temporary opening completed (1-May'16)	0		30-Dec-16		30-Apr-16		
MSB07_03	Children's Play Area: RC Construction of above ground ventilation shaft structures is completed (1-May'16)	0		16-Jul-16		28-Apr-16		
<b>B8 ABWF Degree1 achieved, NBC All reinstatement, Opening through H15 D-wall complete (31-Jul'16)</b>								
MSB08_01	ABWF to Degree 1 has been achieved for works in this cost centre (31-Jul'16)	0		29-Mar-17		28-Jul-16		
MSB08_02	Northern Basket Ball Court - All re-surfacing works & playing surface reinstatement completed (31-Jul'16)	0		30-Jul-16		28-Jul-16		
MSB08_03	H15 interface: The opening through H15 diaphragm wall has been formed (31-Jul'16)	0		31-Mar-17		30-Jul-16		
<b>B9 ABWF Degree3 achieved, All road reinstatement in Jnr &amp; Hennessy Rd complete (30-Oct'16)</b>								
MSB09_01	ABWF to Degree 3 has been achieved for works in this cost centre (30-Oct'16)	0		04-Jul-17		27-Oct-16		
MSB09_02	All road reinstatement works in Johnston Road and Hennessy Road have been satisfactorily completed (30-Oct'16)	0		15-Mar-17		21-Oct-16		
<b>B10 All works in Cost Centre B satisfactorily completed (26-Feb'17)</b>								
MSB10_01	All works in this cost centre have been satisfactorily completed (26-Feb'17)	0		04-Jul-17		25-Feb-17		
<b>Degrees of completion for ABWF Works</b>								
ABWF D1	ABWF Works - Degree 1	0		29-Mar-17		28-Jul-16		
ABWF D2	ABWF Works - Degree 2	0		01-Jun-17		23-Sep-16		
ABWF D3	ABWF Works - Degree 3	0		04-Jul-17		27-Oct-16		
<b>ABWF Works - Degree 1</b>								
ABWF.D1_1,010	1.1- Structure and building complete, clean, dry and weather proof	0		29-Mar-17		28-Jul-16		
ABWF.D1_1,020	1.2- Blockwalls and partition walls complete, except on plant access route	0		29-Mar-17		28-Jul-16		
ABWF.D1_1,030	1.3- Plastering, undercoat painting, floor screeding including plinths & upstands complete	0		29-Mar-17		28-Jul-16		
ABWF.D1_1,040	1.4- Equipment delivery routes & access openings available for Designated Contractors or interface Cont	0		29-Mar-17		28-Jul-16		
ABWF.D1_1,050	1.5- Cast-in items & subframe installed; niches, recesses and box outs formed; cable troughs, ducts & n	0		29-Mar-17		28-Jul-16		
ABWF.D1_1,060	1.6- Structure as-built survey accepted	0		29-Mar-17		28-Jul-16		

Contract C6593-13C Wan Chai Station Lee Tung Street Subway  
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◆ Actual Level of Effort  
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◆ Remaining Work  
◆ Critical Remaining Work



Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float	2014	2015	2016	2017	2018
ABWF.D1.1.070	1.7- Structural & blockwork E&M openings formed & survey complete	0	29-Mar-17		28-Jul-16		-30	0					
ABWF.D1.1.080	1.8- Movement joints & stitch strips complete	0	29-Mar-17		28-Jul-16		-30	0					
ABWF.D1.1.080	1.9- Drainage system & discharge connections complete with temporary pumps operational	0	28-Mar-17		27-Jul-16		-29	1					
ABWF.D1.1.100	1.10- Escalator zones & pits complete, survey reference lines accepted	0	29-Mar-17		28-Jul-16		-30	0					
ABWF.D1.1.110	1.11- Earthing mat, earthing rods & earthing pits complete & test results accepted	0	29-Mar-17		28-Jul-16		-30	0					
ABWF.D1.1.120	1.12- Underground pipework complete including manholes, ductworks & drawlits	0	29-Mar-17		28-Jul-16		-30	0					
ABWF.D1.1.130	1.13- Civil & building provisions for designated & interfacing contractors complete	0	31-May-16		14-Apr-14		272	302					
<b>ABWF Works - Decree 2</b>													
ABWF.D2.2.010	2.1- Permanent door frames installed with temporary doors and locks	0	24-May-17		15-Sep-16		-86	8					
ABWF.D2.2.020	2.2- Floor finishes & wall filling in plant rooms for Designated Contractors complete	0	01-Jun-17		23-Sep-16		-94	0					
ABWF.D2.2.030	2.3- Glazing & Balustrade support installed	0	13-Apr-17		11-Aug-16		-45	49					
ABWF.D2.2.040	2.4- Metal staircases, cat-ladders & catwalks complete	0	24-May-17		15-Sep-16		-86	8					
ABWF.D2.2.050	2.5- External louvers installed	0	24-May-17		15-Sep-16		-86	8					
ABWF.D2.2.060	2.6- Framework for final finishes installed	0	24-May-17		15-Sep-16		-86	8					
ABWF.D2.2.070	2.7- Water tightness testing to water tanks passed	0	24-May-17		15-Sep-16		-86	8					
<b>ABWF Works - Decree 3</b>													
ABWF.D3.3.010	3.1- All finishes complete including permanent doors, ironmongery	0	04-Jul-17		27-Oct-16		-127	0					
ABWF.D3.3.020	3.2- Balustrade installed	0	04-Jul-17		27-Oct-16		-127	0					
ABWF.D3.3.030	3.3- Signage hangers & supports installed	0	29-Jun-17		24-Oct-16		-122	5					
ABWF.D3.3.040	3.4- Roller shutters, fire shutters & smoke barriers installed	0	29-Jun-17		24-Oct-16		-122	5					
ABWF.D3.3.050	3.5- Acoustic treatment applied	0	29-Jun-17		24-Oct-16		-122	5					
ABWF.D3.3.060	3.6- Louvers & grilles installed	0	29-Jun-17		24-Oct-16		-122	5					
ABWF.D3.3.070	3.7- All openings & Penetrations sealed	0	29-Jun-17		24-Oct-16		-122	5					
<b>Southern Playground Re-provision works</b>													
RW_0010	LCSD handover Northern Basket Ball Court 1	1	09-Mar-17		17-Dec-16		-64	0					
RW_0020	Fence off the site	2	10-Mar-17		19-Dec-16		-64	0					
RW_0030	Expose the surface	6	13-Mar-17		20-Dec-16		-64	0					
RW_0040	Resurfacing works	14	20-Mar-17		30-Dec-16		-64	0					
RW_0050	Hand over to LCSD, additional remedial if require	5	06-Apr-17		17-Jan-17		-64	0					
RW_0060	LCSD handover Southern Basket Ball Court 2	1	12-Apr-17		23-Jan-17		-64	0					
RW_0070	Fence off the site	2	13-Apr-17		24-Jan-17		-64	0					
RW_0080	Expose the surface	6	19-Apr-17		26-Jan-17		-64	0					
RW_0090	Resurfacing works	13	26-Apr-17		06-Feb-17		-64	0					
RW_0100	Hand over to LCSD, additional remedial if require	5	13-May-17		21-Feb-17		-64	1					
<b>Cost Centre B: Part A Works, Civil and Structural Works for the New Subway</b>													
B.RC.Comp	RC Structure completed for the new subway	0	30-Dec-16		30-Apr-16		-240	0					
<b>Site Preliminary Works</b>													
SPW_0010	LCSD handover SBC & Play's Area	3	14-Apr-14		16-Apr-14								
SPW_0020	Fence off the site area for SBC & Play's Area	3	17-Apr-14		23-Apr-14								
SPW_0030	Employ security guard & security booth delivery	3	24-Apr-14		26-Apr-14								
SPW_0040	Removal of existing furniture for SBC & Play's Area as require	6	28-Apr-14		05-May-14								
SPW_0050	Trial trenches and expose existing UU service in SBC & Play's area	40	14-Apr-14		05-Jun-14								
SPW_0060	Setting up site office & misc.	50	07-May-14		05-Jul-14								
SPW_0070	Form site access for vehicle	12	07-Jul-14		19-Jul-14								
SPW_0080	Diversion of existing utilities & misc. works if require for SBC & Play's Area	24	09-Jun-14		07-Jul-14								
SPW_0090	Erect hoarding for SBC	12	16-Jul-14		29-Jul-14								
SPW_0100	Ground/ Site Investigation in SBC & Play's Area	18	08-Jul-14		28-Jul-14								
SPW_0110	Transplant and tree removal	72	24-Apr-14		21-Jul-14								
<b>Northern Basket Ball Court</b>													
NBC_0010	Liaison with relevance parties for TTM	80	02-Apr-15		02-Jul-15								
NBC_0020	LCSD handover Northern Basket Ball Court for LTS construction works	6	11-Aug-15		11-Aug-15								
NBC_0030	Preparation works for NBC site access	4	11-Aug-15		07-Jul-15								
NBC_0040	Implementation of TTM	3	11-Aug-15		14-Jul-15								
NBC_0050	Relocation of metal fence access door for public	5	11-Aug-15		11-Aug-15								
NBC_0060	Hoarding installation, installation of site entry on Hennessy Road	12	17-Aug-15		18-Jul-15								
NBC_0070	Expose UU & trial trench for sheet piles works	48	24-Aug-15		15-Aug-15								
NBC_0080	Phase 3 ELS- Sheet Piles Installation [104 no. x 24m]	15	30-Sep-15		23-Sep-15								
NBC_0090	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	12	09-Oct-15		13-Oct-15								
NBC_0100	Phase 3 ELS- Pumping Test preparation works	6	27-Oct-15		26-Oct-15								
NBC_0110	Phase 3 ELS- Pumping Test	6	27-Oct-15		01-Nov-15								
NBC_0120	Phase 3 ELS- Pumping Test Report Preparation and submission to BD	9	04-Nov-15		07-Nov-15								
NBC_0130	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [500m]	9	04-Nov-15		10-Nov-15								

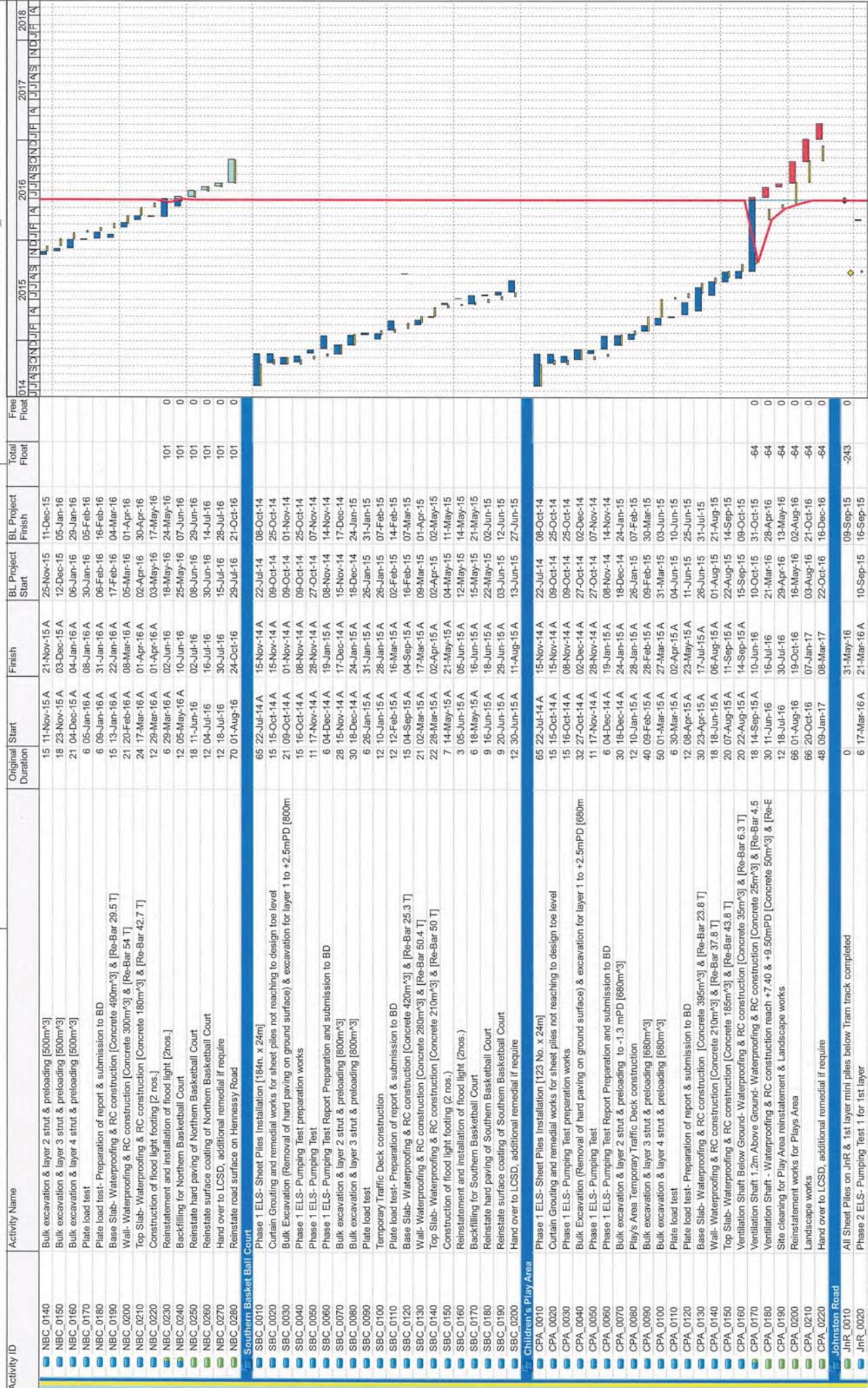
**Contract C6593-13C Wan Chai Station Lee Tung Street Subway Master Program (Rev.C)**

Progress vs Program (Updated Ending May'16)

◆ Actual Level of Effort  
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◆ Critical Remaining Work







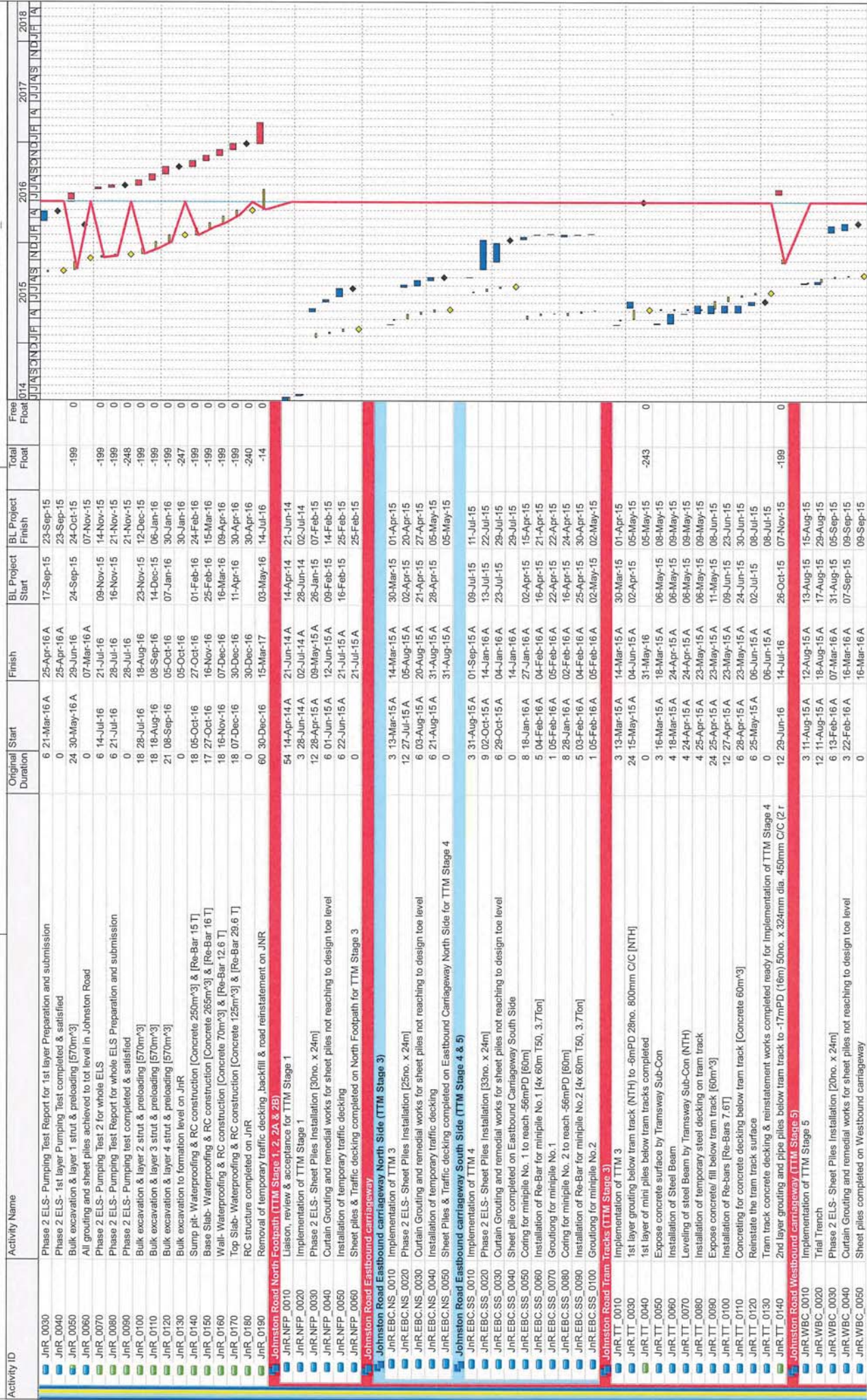
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Legend:  
 ◆ Baseline Milestone  
 ◆ Milestone





Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
JnR_0030	Phase 2 ELS- Pumping Test Report for 1st layer Preparation and submission	6	21-Mar-16 A	25-Apr-16 A	17-Sep-15	23-Sep-15		
JnR_0040	Phase 2 ELS- 1st layer Pumping Test completed & satisfied	0		29-Jun-16 A	24-Sep-15	24-Oct-15	-199	0
JnR_0050	Bulk excavation & layer 1 strut & preloading [570m³]	0	30-May-16 A	21-Jul-16	09-Nov-15	14-Nov-15	-199	0
JnR_0060	All grouting and sheet piles achieved to top level in Johnston Road	0	14-Jul-16	28-Jul-16	16-Nov-15	21-Nov-15	-199	0
JnR_0070	Phase 2 ELS- Pumping Test 2 for whole ELS	6	21-Jul-16	28-Jul-16	21-Nov-15	21-Nov-15	-248	0
JnR_0080	Phase 2 ELS- Pumping Test Report for whole ELS Preparation and submission	0	28-Jul-16	28-Jul-16	23-Nov-15	12-Dec-15	-199	0
JnR_0090	Phase 2 ELS- Pumping test completed & satisfied	18	28-Jul-16	18-Aug-16	14-Dec-15	06-Jan-16	-199	0
JnR_0100	Bulk excavation & layer 2 strut & preloading [570m³]	18	18-Aug-16	05-Oct-16	07-Jan-16	30-Jan-16	-247	0
JnR_0110	Bulk excavation & layer 3 strut & preloading [570m³]	21	08-Sep-16	08-Oct-16	01-Feb-16	24-Feb-16	-199	0
JnR_0120	Bulk excavation & layer 4 strut & preloading [570m³]	17	27-Oct-16	16-Nov-16	25-Feb-16	15-Mar-16	-199	0
JnR_0130	Bulk excavation to formation level on JnR	18	16-Nov-16	07-Dec-16	16-Mar-16	09-Apr-16	-199	0
JnR_0140	Sump pit- Waterproofing & RC construction [Concrete 250m³] & [Re-Bar 15 T]	18	07-Dec-16	30-Dec-16	11-Apr-16	30-Apr-16	-240	0
JnR_0150	Base Slab- Waterproofing & RC construction [Concrete 265m³] & [Re-Bar 16 T]	60	30-Dec-16	15-Mar-17	03-May-16	14-Jul-16	-14	0
JnR_0160	Wall- Waterproofing & RC construction [Concrete 70m³] & [Re-Bar 12.6 T]	54	14-Apr-14 A	21-Jun-14 A	14-Apr-14	21-Jun-14		
JnR_0170	Top Slab- Waterproofing & RC construction [Concrete 125m³] & [Re-Bar 29.6 T]	3	28-Jun-14 A	02-Jul-14 A	28-Jun-14	02-Jul-14		
JnR_0180	RC structure completed on JnR	12	28-Apr-15 A	09-May-15 A	26-Jun-15	07-Feb-15		
JnR_0190	Removal of temporary traffic decking, backfill & road reinstatement on JnR	6	01-Jun-15 A	12-Jun-15 A	09-Feb-15	14-Feb-15		
JnR.NFP_0050	Installation of temporary traffic decking	6	22-Jun-15 A	21-Jul-15 A	16-Feb-15	25-Feb-15		
JnR.NFP_0060	Sheet piles & Traffic decking completed on North Footpath for TTM Stage 3	0		21-Jul-15 A	25-Feb-15	25-Feb-15		
JnR.EBC.NS_0010	Implementation of TTM 4	3	31-Aug-15 A	01-Sep-15 A	09-Jul-15	11-Jul-15		
JnR.EBC.NS_0020	Phase 2 ELS- Sheet Piles Installation [33no. x 24m]	9	02-Oct-15 A	14-Jan-16 A	13-Jul-15	22-Jul-15		
JnR.EBC.NS_0030	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6	29-Oct-15 A	04-Jan-16 A	23-Jul-15	29-Jul-15		
JnR.EBC.NS_0040	Sheet pile completed on Eastbound Carriageway South Side	0		14-Jan-16 A	23-Jul-15	29-Jul-15		
JnR.EBC.NS_0050	Coring for minipile No. 1 to reach -56mPD [60m]	8	18-Jan-16 A	27-Jan-16 A	02-Apr-15	15-Apr-15		
JnR.EBC.NS_0060	Installation of Re-Bar for minipile No.1 [4x 60m T50, 3.7Ton]	5	04-Feb-16 A	04-Feb-16 A	16-Apr-15	21-Apr-15		
JnR.EBC.NS_0070	Grouting for minipile No. 1	1	05-Feb-16 A	05-Feb-16 A	22-Apr-15	22-Apr-15		
JnR.EBC.NS_0080	Coring for minipile No. 2 to reach -56mPD [60m]	8	28-Jan-16 A	02-Feb-16 A	25-Apr-15	24-Apr-15		
JnR.EBC.NS_0090	Installation of Re-Bar for minipile No.2 [4x 60m T50, 3.7Ton]	5	03-Feb-16 A	04-Feb-16 A	16-Apr-15	30-Apr-15		
JnR.EBC.NS_0100	Grouting for minipile No. 2	1	05-Feb-16 A	05-Feb-16 A	02-May-15	02-May-15		
JnR.TT_0010	Implementation of TTM 3	3	13-Mar-15 A	14-Mar-15 A	30-Mar-15	01-Apr-15		
JnR.TT_0030	1st layer grouting below tram track (NTH) to -6mPD 28no. 800mm C/C (NTH)	24	15-May-15 A	04-Jun-15 A	02-Apr-15	05-May-15		
JnR.TT_0040	1st layer of mini piles below tram tracks completed	0		31-May-16	02-Apr-15	05-May-15	-243	0
JnR.TT_0050	Expose concrete surface by Tramway Sub-Con	3	16-Mar-15 A	18-Mar-15 A	06-May-15	08-May-15		
JnR.TT_0060	Installation of Steel Beam	4	18-Mar-15 A	24-Apr-15 A	06-May-15	09-May-15		
JnR.TT_0070	Installation of temporary steel decking on tram track	4	24-Apr-15 A	24-Apr-15 A	06-May-15	09-May-15		
JnR.TT_0080	Installation of temporary steel decking below tram track [Concrete 60m³]	4	25-Apr-15 A	23-May-15 A	06-May-15	09-May-15		
JnR.TT_0090	Expose concrete/ fill below tram track [60m³]	24	25-Apr-15 A	23-May-15 A	11-May-15	08-Jun-15		
JnR.TT_0100	Installation of Re-bars [Re-Bars 7.6T]	12	27-Apr-15 A	23-May-15 A	09-Jun-15	23-Jun-15		
JnR.TT_0110	Concrete for concrete decking below tram track	6	28-Apr-15 A	23-May-15 A	24-Jun-15	30-Jun-15		
JnR.TT_0120	Reinstate the tram track surface	6	25-May-15 A	06-Jun-15 A	02-Jul-15	08-Jul-15		
JnR.TT_0130	Tram track concrete decking & reinstatement works completed ready for Implementation of TTM Stage 4	0		06-Jun-15 A	08-Jul-15	08-Jul-15		
JnR.TT_0140	2nd layer grouting and pipe piles below tram track to -17mPD (16m) 50no. x 324mm dia. 450mm C/C (2 r)	12	29-Jun-16	14-Jul-16	26-Oct-15	07-Nov-15	-199	0
JnR.WBC_0010	Implementation of TTM Stage 5	3	11-Aug-15 A	12-Aug-15 A	13-Aug-15	15-Aug-15		
JnR.WBC_0020	Trial Trench	12	11-Aug-15 A	18-Aug-15 A	17-Aug-15	29-Aug-15		
JnR.WBC_0030	Phase 2 ELS- Sheet Piles Installation [20no. x 24m]	6	13-Feb-16 A	07-Mar-16 A	31-Aug-15	05-Sep-15		
JnR.WBC_0040	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	3	22-Feb-16 A	16-Mar-16 A	07-Sep-15	09-Sep-15		
JnR.WBC_0050	Sheet piles completed on Westbound carriageway	0		16-Mar-16 A	09-Sep-15	09-Sep-15		

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

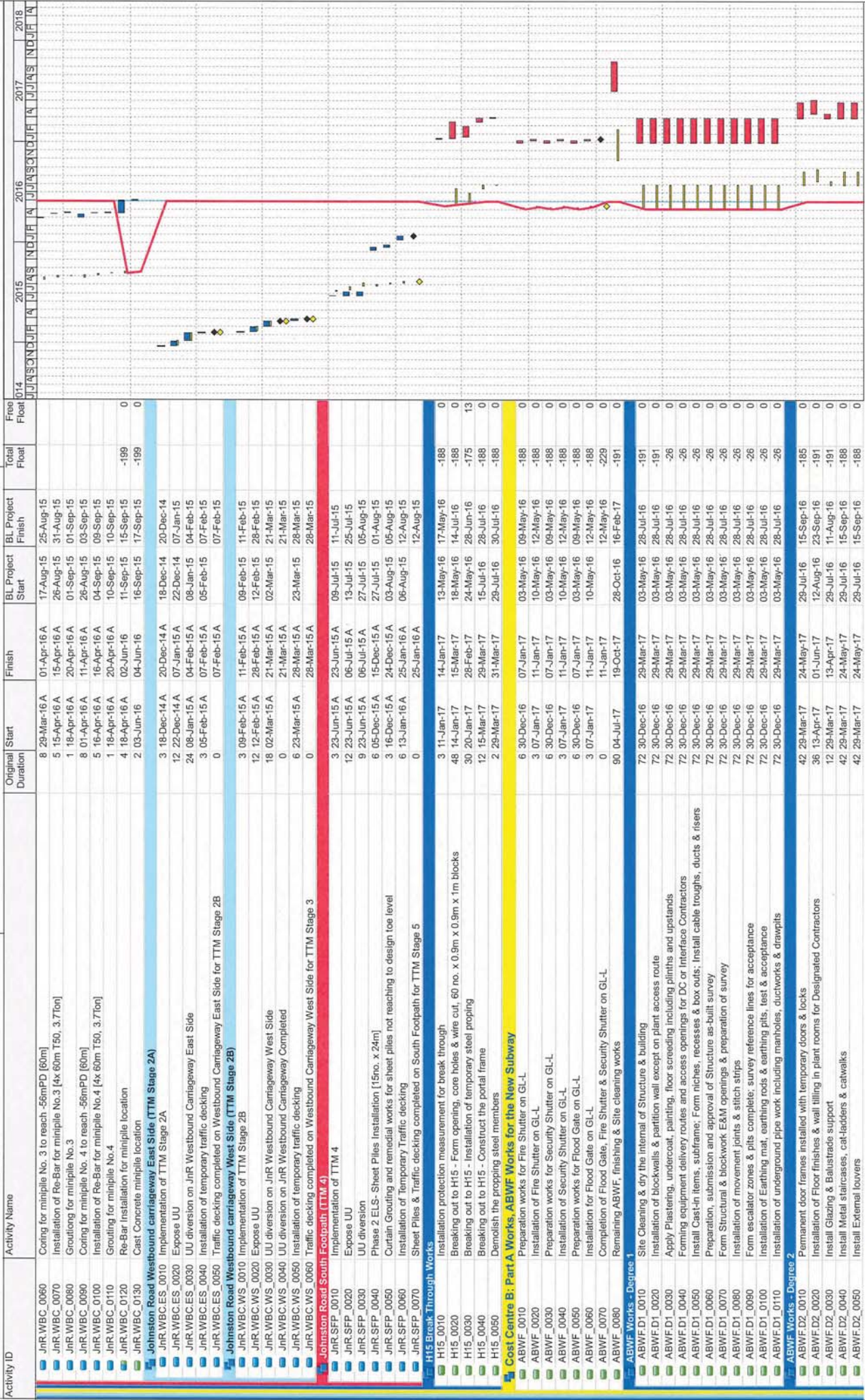
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- ◆ Baseline Milestone
- ◆ Milestone







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

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Activity ID	Activity Name	Original Start Duration	Finish	BL Project Start	BL Project Finish	Total Float	Free Float	2014	2015	2016	2017	2018
ABWF-D2_0060	Install Framework for final finishes	42	29-Mar-17	29-Jul-16	15-Sep-16	-188	0					
ABWF-D2_0070	Water tightness testing to water tanks & acceptance	42	29-Mar-17	29-Jul-16	15-Sep-16	-188	0					
<b>ABWF Works - Degree 3</b>												
ABWF-D3_0010	Install & apply all remaining finishes including permanent doors, ironmongery	37	01-Jun-17	24-Sep-16	27-Oct-16	-191	0					
ABWF-D3_0011	Installation of VE Panel [591m²]	33	24-May-17	04-Jul-17	17-Sep-16	-101	0					
ABWF-D3_0012	Installation of Ceiling Panel [565 m²]	33	24-May-17	04-Jul-17	17-Sep-16	-101	0					
ABWF-D3_0013	Installation of floor finishing [565 m²]	27	01-Jun-17	04-Jul-17	24-Sep-16	-191	0					
ABWF-D3_0020	Install Balustrade	27	01-Jun-17	04-Jul-17	24-Sep-16	-191	0					
ABWF-D3_0030	Install Signage hangers & supports	30	24-May-17	29-Jun-17	24-Oct-16	-188	0					
ABWF-D3_0040	Install smoke barriers	30	24-May-17	29-Jun-17	24-Oct-16	-188	0					
ABWF-D3_0050	Apply Acoustic treatment	30	24-May-17	29-Jun-17	24-Oct-16	-188	0					
ABWF-D3_0060	Install Louvres & grilles	30	24-May-17	29-Jun-17	24-Oct-16	-188	0					
ABWF-D3_0070	Seal All openings & Penetrations	30	24-May-17	29-Jun-17	24-Oct-16	-188	0					
<b>C: Building Services</b>												
<b>Design, Shop Drawings, Materials &amp; Equipments Submission and Approval</b>												
BS_DS_0010	BS Works- Preparation and submission for detailed design of BS works	128	14-Apr-14	18-Sep-14	18-Sep-14							
BS_DS_0020	BS Works- Review and approval for detailed design of BS works	12	19-Sep-14	04-Oct-14	04-Oct-14							
BS_DS_0030	BS Works- Preparation and re-submission for detailed design of BS works	12	06-Oct-14	18-Oct-14	18-Oct-14							
BS_DS_0040	BS Works- Review and approval for detailed design of BS works (If require)	12	20-Oct-14	01-Nov-14	01-Nov-14							
BS_DS_0050	BS Works- Contractor prepare & submit the propose suppliers & model types of major BS equipment & materials	128	14-Apr-14	18-Sep-14	18-Sep-14							
BS_DS_0060	BS Works- Review & approval the propose suppliers & model types of major BS equipment & materials	12	19-Sep-14	04-Oct-14	04-Oct-14							
BS_DS_0070	BS Works- Contractor prepare & re-submit propose suppliers & model types of major BS equipment & materials	12	06-Oct-14	18-Oct-14	18-Oct-14							
BS_DS_0080	BS Works- Review the propose suppliers & model types of major BS equipment & materials	12	20-Oct-14	01-Nov-14	01-Nov-14							
BS_DS_0090	BS Works- Preparation and submission of BS shop drawings	32	03-Nov-14	09-Dec-14	03-Nov-14							
BS_DS_0100	BS Works- Review and approval of BS shop drawings	12	10-Dec-14	23-Dec-14	23-Dec-14							
BS_DS_0110	BS Works- Preparation and re-submission of BS shop drawings (If require)	12	24-Dec-14	09-Jan-15	09-Jan-15							
BS_DS_0120	BS Works- Review and approval of BS shop drawings (If require)	12	10-Jan-15	23-Jan-15	23-Jan-15							
BS_DS_0130	Exchange of Design information with Designated and Interfacing Contractors	100	24-Jan-15	30-May-15	30-May-15							
<b>Procurement and Delivery of Materials and Equipments</b>												
BS_PD_0010	All Major building service equipments & materials - Manufacture & fabrication - Procurement	50	03-Nov-14	02-Jan-15	02-Jan-15							
BS_PD_0020	Others Major building service equipments & materials - Place order	95	03-Jan-15	02-May-15	02-May-15							
BS_PD_0030	Others Major building service equipments & materials - Manufacture & fabrication	90	04-May-15	19-Aug-15	19-Aug-15							
BS_PD_0040	Others Major building service equipments & materials - Factory acceptance testing	24	20-Aug-15	16-Sep-15	16-Sep-15							
BS_PD_0050	Others Major building service equipments & materials - Remedial works (If require)	36	17-Sep-15	31-Oct-15	31-Oct-15							
BS_PD_0060	Others Major building service equipments & materials - Factory acceptance (If require)	24	02-Nov-15	18-Nov-15	18-Nov-15							
BS_PD_0070	Others Major building service equipments & materials - Delivery to site/ ECS Room	90	30-Nov-15	19-Mar-16	19-Mar-16							
BS_PD_0080	Air Handling Unit - Place Order	95	03-Jan-15	05-Jan-15	03-Jan-15							
BS_PD_0090	Air Handling Unit - Manufacture & fabrication	90	04-May-15	19-Aug-15	19-Aug-15							
BS_PD_0100	Air Handling Unit - Factory acceptance testing	24	20-Aug-15	16-Sep-15	16-Sep-15							
BS_PD_0110	Air Handling Unit - Remedial works (If require)	36	17-Sep-15	31-Oct-15	31-Oct-15							
BS_PD_0120	Air Handling Unit - Factory acceptance testing (If require)	24	02-Nov-15	18-Nov-15	18-Nov-15							
BS_PD_0130	Air Handling Unit - Delivery to site/ ECS Room	90	30-Nov-15	19-Mar-16	19-Mar-16							
BS_PD_0140	In-line Centrifugal Fan - Place Order	95	03-Jan-15	05-Jan-15	03-Jan-15							
BS_PD_0150	In-line Centrifugal Fan - Manufacture & fabrication	90	04-May-15	19-Aug-15	19-Aug-15							
BS_PD_0160	In-line Centrifugal Fan - Factory acceptance testing	24	20-Aug-15	16-Sep-15	16-Sep-15							
BS_PD_0170	In-line Centrifugal Fan - Remedial works (If require)	36	17-Sep-15	31-Oct-15	31-Oct-15							
BS_PD_0180	In-line Centrifugal Fan - Factory acceptance testing (If require)	24	02-Nov-15	18-Nov-15	18-Nov-15							
BS_PD_0190	In-line Centrifugal Fan - Delivery to Site/ ECS Room	90	30-Nov-15	19-Mar-16	19-Mar-16							
BS_PD_0200	Smoke Extraction Fan - Place Order	95	03-Jan-15	05-Jan-15	03-Jan-15							
BS_PD_0210	Smoke Extraction Fan - Manufacture & fabrication	90	04-May-15	19-Aug-15	19-Aug-15							
BS_PD_0220	Smoke Extraction Fan - Factory acceptance testing	24	20-Aug-15	16-Sep-15	16-Sep-15							
BS_PD_0230	Smoke Extraction Fan - Remedial works (If require)	36	17-Sep-15	31-Oct-15	31-Oct-15							
BS_PD_0240	Smoke Extraction Fan - Factory acceptance testing (If require)	24	02-Nov-15	18-Nov-15	18-Nov-15							
BS_PD_0250	Smoke Extraction Fan - Delivery to site/ ECS Room	90	30-Nov-15	19-Mar-16	19-Mar-16							
BS_PD_0260	Fan Coil Unit - Place order	95	03-Jan-15	05-Jan-15	03-Jan-15							
BS_PD_0270	Fan Coil Unit - Manufacture & fabrication	90	04-May-15	19-Aug-15	19-Aug-15							
BS_PD_0280	Fan Coil Unit - Factory acceptance testing	24	20-Aug-15	16-Sep-15	16-Sep-15							
BS_PD_0290	Fan Coil Unit - Remedial works (If require)	36	17-Sep-15	31-Oct-15	31-Oct-15							
BS_PD_0300	Fan Coil Unit - Factory acceptance testing (If require)	24	02-Nov-15	18-Nov-15	18-Nov-15							
BS_PD_0310	Fan Coil Unit - Delivery to site/ ECS Room	90	30-Nov-15	19-Mar-16	19-Mar-16							
BS_PD_0320	Motorized Smoke & Fire damper - Place order	95	03-Jan-15	05-Jan-15	03-Jan-15							



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



Activity ID	Activity Name	Original Start Duration	Finish	BL Project Start	BL Project Finish	Total Float	Free Float	2014	2015	2016	2017	2018
BS.PD_0330	Motorized Smoke & Fire damper - Manufacture & fabrication	90 04-May-15 A	19-Aug-15 A	04-May-15	19-Aug-15							
BS.PD_0340	Motorized Smoke & Fire damper - Factory acceptance testing	24 20-Aug-15 A	16-Sep-15 A	20-Aug-15	16-Sep-15							
BS.PD_0350	Motorized Smoke & Fire damper - Remedial works (If require)	36 17-Sep-15 A	31-Oct-15 A	17-Sep-15	31-Oct-15							
BS.PD_0360	Motorized Smoke & Fire damper - Factory acceptance testing (If require)	24 02-Nov-15 A	19-Mar-16 A	02-Nov-15	19-Mar-16							
BS.PD_0370	Motorized Smoke & Fire damper - Delivery to site/ ECS Room	90 30-Nov-15 A	02-May-15 A	30-Nov-15	02-May-15							
BS.PD_0380	All Major equipment BS equipment & materials - Completed placing orders	0	28-Nov-15 A									
BS.PD_0390	All Major equipment BS equipment & materials - Completed all factory acceptance testing	0	19-Mar-16 A									
BS.PD_0400	All Major equipment BS equipment & materials - Completed delivery to ECS room	0										
<b>Installation of Building Services</b>												
BS.L0009	Installation of trucking, cable for the whole subway linking between H15 and WAC station	17 30-Dec-16	20-Jan-17	03-May-16	23-May-16	-199	0					
BS.L0010	Electrical - Within Stn, Distribution equip, 16 nr, cable tray & trunk 420m, lighting fitting 81nr, earthing taf	49 31-May-16	28-Jul-16	21-Mar-16	23-May-16	-55	144					
BS.L0020	Electrical - Subway, D eq 82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr	60 20-Jan-17	09-Jun-17	24-May-16	23-Jul-16	-199	0					
BS.L0030	Electrical - Subway, D eq 82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr	50 23-Mar-17	28-Feb-17	23-Jul-16	03-Oct-16	-199	0					
BS.L0040	ECS - Within WAC Stn, Grille 6 nr, air duct 115m2, damper 7 nr	30 20-Jan-17	22-Apr-17	24-May-16	28-Jun-16	-185	0					
BS.L0050	ECS - Subway, Pipe/insul/75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, damper 36nr, control 4r	42 28-Feb-17	23-May-17	18-Aug-16	14-Sep-16	-185	14					
BS.L0060	ECS - Subway, Pipe/insul/75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, damper 36nr, control 4r	21 31-Mar-17	29-Apr-17	01-Aug-16	24-Aug-16	-188	0					
BS.L0070	FS Works - Within H15, Pipe 59m, detector 7 nr, hose reel 1 nr	21 29-Apr-17	26-May-17	25-Aug-16	19-Sep-16	-188	11					
BS.L0080	FS Works - Subway, Pipe 155m, valve 2 nr, detectors 38 nr, hose reel 1 nr, fire extinguisher 4 nr, connec	18 20-Jan-17	14-Feb-17	24-May-16	14-Jun-16	-144	0					
BS.L0090	Drainage System - Waste - Existing WSC Stn, 35 m pipe, 2 valve, 4 plt, 1 switch/ control panel, 1 power	18 14-Feb-17	07-Mar-17	15-Jun-16	06-Jul-16	-144	0					
BS.L0100	Drainage System - Waste - Subway, Pipe D/CI 257+18m, 7 joint, 6 OTC	18 07-Mar-17	28-Mar-17	07-Jul-16	27-Jul-16	-144	0					
BS.L0110	Drainage System - Rainwater Discharge, CI pipe, 8+18m above/below ground, 2 manholes	54 20-Jan-17	28-Mar-17	24-May-16	27-Jul-16	-192	0					
BS.L0120	Cleansing Water System - Within WAC Station, 137m copper pipe, 3 gate valve, 2 stopcock, 2 watter me	48 28-Mar-17	31-May-17	28-Jul-16	22-Sep-16	-192	0					
BS.L0130	Cleansing Water System - Subway, 87m copper pipe, 1 gate valve, 1 joint	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0140	Installation of Air Handling Unit	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0150	Installation of Smoke Extraction Fan	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0160	Installation of Fan Coil Unit	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0170	Installation of Motorized Smoke & Fire damper	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0180	Installation & integration of control system	110 20-Jan-17	09-Jun-17	24-May-16	03-Oct-16	-199	0					
BS.L0190	Remaining BS Works	21 09-Jun-17	05-Jul-17	04-Oct-16	28-Oct-16	-196	3					
BS.L0200	Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'16)	0	09-Jun-17	03-Oct-16	03-Oct-16	-102	0					
<b>Testing and Commissioning</b>												
BS.TC_0010	T&C ECS - Tests on Ventilation Fans, Air Balancing, Equipment & System, Control, Noise & Sound, etc.	24 09-Jun-17	08-Jul-17	04-Oct-16	01-Nov-16	-199	0					
BS.TC_0020	T&C - SAT of HV SW Boards/ TX, LV SW Boards & MCC, Lighting Control, etc.	24 09-Jun-17	08-Jul-17	04-Oct-16	01-Nov-16	-199	0					
BS.TC_0030	T&C Fire Services - Performance Test/ FH & HR Systems/ Auto Fire Alarm System	24 09-Jun-17	08-Jul-17	04-Oct-16	01-Nov-16	-199	0					
BS.TC_0040	T&C Plumbing and Drainage - P&D Pumps, Control System	24 31-May-17	28-Jun-17	23-Sep-16	22-Oct-16	-192	0					
BS.TC_0050	T&C ELV System - Control Systems	24 09-Jun-17	08-Jul-17	04-Oct-16	01-Nov-16	-199	0					
FSI	FSI - Integrated Test	11 08-Jul-17	21-Jul-17	02-Nov-16	14-Nov-16	-199	0					
<b>Statutory Inspection and Approval</b>												
BS.SIA_0010	Submit BA14 for completion of breakthrough	6 31-Mar-17	08-Apr-17	01-Aug-16	06-Aug-16	-58	0					
BS.SIA_0020	BS.SIA acknowledged/letter obtained	24 08-Apr-17	27-May-17	08-Aug-16	03-Sep-16	-58	265					
BS.SIA_0030	DSDI/WSD Inspection and Connection	24 28-Jun-17	12-Jul-17	24-Oct-16	19-Nov-16	-192	7					
BS.SIA_0040	Connection for electricity	12 21-Jul-17	04-Aug-17	15-Nov-16	28-Nov-16	-199	0					
BS.SIA_0050	Submit Form 1 and Form 2	12 05-Aug-17	05-Aug-17	29-Nov-16	29-Nov-16	-199	0					
BS.SIA_0060	FS Inspection / Re-inspection	12 21-Aug-17	04-Sep-17	30-Nov-16	13-Dec-16	-199	0					
BS.SIA_0070	FS Defect Rectification and Approval	1 04-Sep-17	05-Sep-17	15-Dec-16	30-Dec-16	-199	0					
BS.SIA_0080	Form 3 Obtained	6 05-Sep-17	12-Sep-17	31-Dec-16	31-Dec-16	-199	0					
BS.SIA_0090	BD Inspection/ Re-inspection	1 12-Sep-17	13-Oct-17	03-Jan-17	09-Jan-17	-199	0					
BS.SIA_0100	EMSD-RB Pre-inspection by MTRC Ops Team	24 13-Sep-17	13-Oct-17	10-Jan-17	10-Jan-17	-199	0					
BS.SIA_0110	Remedial Works	1 15-Mar-18	15-Mar-18	11-Feb-17	10-Feb-17	-323	124					
BS.SIA_0120	Remedial Works & Re-inspection (If Require)	6 16-Mar-18	29-Mar-18	11-Feb-17	11-Feb-17	-323	0					
BS.SIA_0140	EMSD Letter of "No Objection" Obtained/ Ready to Open	6 23-Mar-18	29-Mar-18	20-Feb-17	25-Feb-17	-323	0					
BS.SIA_Comp	Complete & pass all statutory, joint inspection & handover to Operation Team for the BS of new Subway-	0	29-Mar-18	25-Feb-17	25-Feb-17	-396	0					
<b>WAC Station Modification Works (Part B Works)</b>												
WMW_0010	Install New Telephone Booth and associated works (NTH)	60 17-Nov-16	01-Feb-17	12-Oct-15	21-Dec-15	-294	30					
WMW_0020	Relocate 4 Advertising Panels (NTH)	21 09-Mar-17	01-Apr-17	29-Jan-16	25-Feb-16	-305	0					
WMW_0030	Finishing, Remedial works & site cleaning	24 02-Sep-17	29-Sep-17	01-Aug-16	27-Aug-16	-323	0					
<b>AFC Audit Room</b>												
INF.AFCp	Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Level (3-May'15)	0	28-Dec-15 A	25-Apr-15	25-Apr-15							

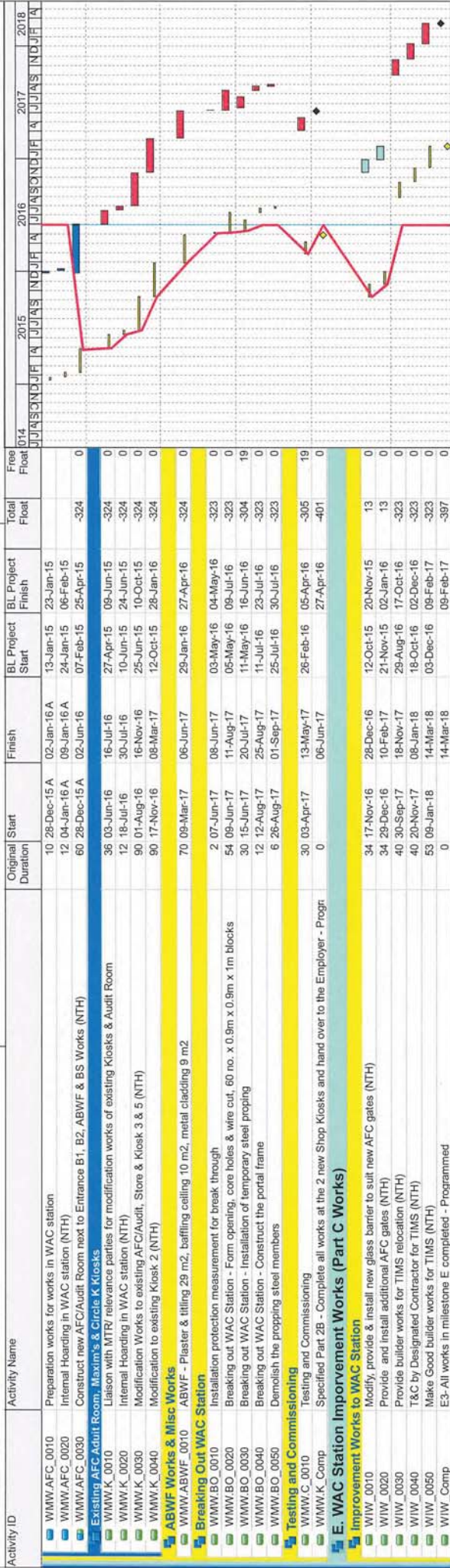
Contract C6593-13C Wan Chai Station Lee Tung Street Subway Master Program (Rev.C)

Progress vs Program (Updated Ending May'16)

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





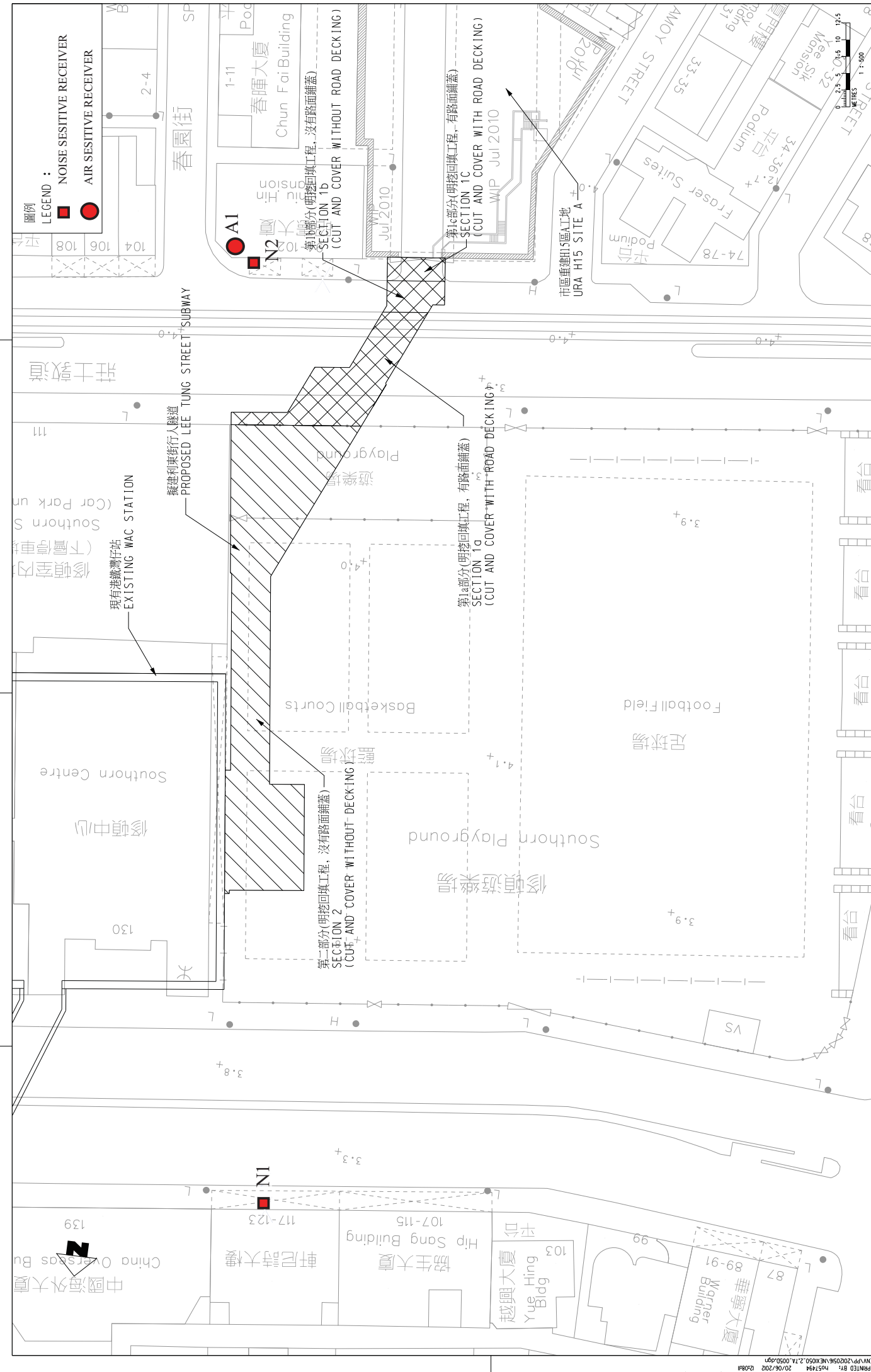


- Actual Level of Effort
- Primary Baseline
- Actual Work
- Remaining Work
- Critical Remaining Work
- ◆ Baseline Milestone
- ◆ Milestone



## **Appendix D**

### **Monitoring Locations**



圖例  
 LEGEND :  
 ■ NOISE SENSITIVE RECEIVER  
 ● AIR SENSITIVE RECEIVER

CONTRACT NO. NEX/1050  
 PROJECT TITLE: WAC STATION LEE TUNG STREET SUBWAY  
 SCALE: 1:500 (A3)

REV.	DATE	BY	APPROVED	DESCRIPTION
D				GENERAL REVISION
C				GENERAL REVISION
B				GENERAL REVISION
A				PROJECT PRELIMINARY

CONTRACT NO. NEX/1050  
 PROJECT TITLE: WAC STATION LEE TUNG STREET SUBWAY  
 SCALE: 1:500 (A3)

CONTRACT NO. NEX/1050  
 PROJECT TITLE: WAC STATION LEE TUNG STREET SUBWAY  
 SCALE: 1:500 (A3)

CONTRACT NO. NEX/1050  
 PROJECT TITLE: WAC STATION LEE TUNG STREET SUBWAY  
 SCALE: 1:500 (A3)

REV.	DATE	BY	APPROVED	DESCRIPTION
D				GENERAL REVISION
C				GENERAL REVISION
B				GENERAL REVISION
A				PROJECT PRELIMINARY

CONTRACT NO. NEX/1050  
 PROJECT TITLE: WAC STATION LEE TUNG STREET SUBWAY  
 SCALE: 1:500 (A3)



## **Appendix E**

### **Event and Action Plan**

**Event and Action Plan for Construction Noise**

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

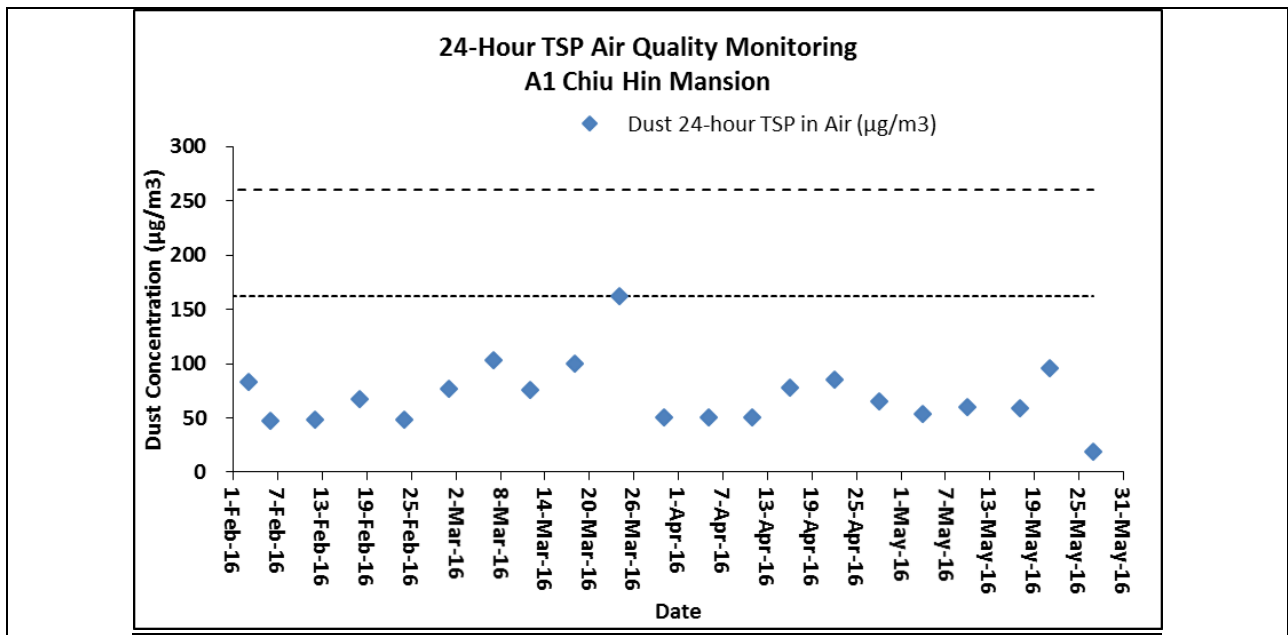
### Event and Action Plan for Air Quality

Event	Action			
	ET	IEC	ER	Contractor
<b>Action Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. If valid, inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and EPD;</li> <li>3. Repeat measurements to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Discuss with IEC and Contractor on remedial action required;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervisor implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial Measure properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial action to IEC within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
<b>Limit Level</b>				
Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform ER and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and the Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify sources;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ET accordingly.</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

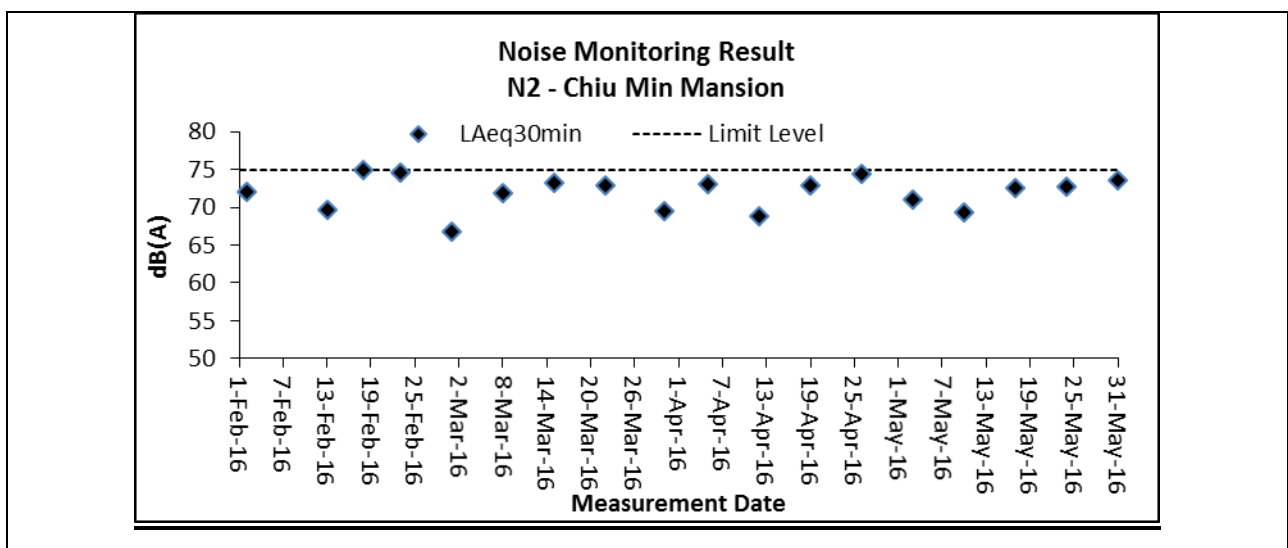
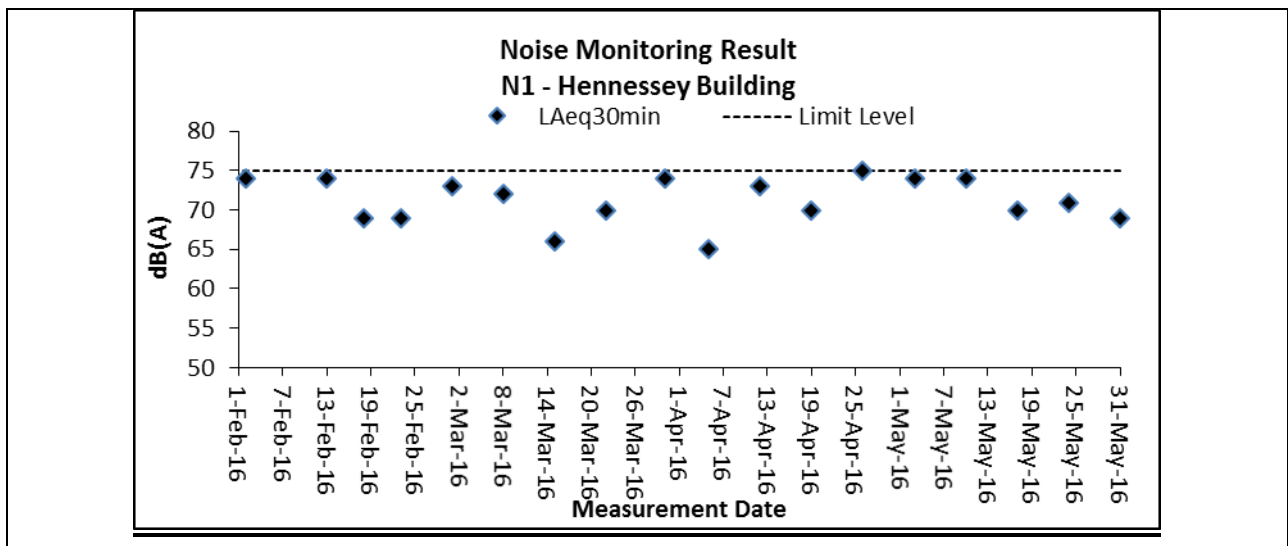
## **Appendix F**

### **Graphical Plots**

**Air Quality**



**Construction Noise**



## **Appendix G**

### **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-Mar-16	Tue	Mainly fine. Moderate easterly winds.	0	17.6	11.9	67.5	E/NE
2-Mar-16	Wed	Mainly fine. Moderate easterly winds.	0	17.8	12.2	51.3	E/NE
3-Mar-16	Thu	Fine. Dry in the afternoon. Light to moderate easterly winds.	0	16.9	13.3	80.5	E/NW
4-Mar-16	Fri	Mainly cloudy. Sunny intervals during the day. Light to moderate easterly winds.	0	19.3	8.7	86.6	E/N
5-Mar-16	Sat	Mainly cloudy with a few fog and light rain patches.	Trace	21.1	7.3	85	E/N
6-Mar-16	Sun	Mainly cloudy with a few fog and light rain patches.	0	21	9.7	84	W/SW
7-Mar-16	Mon	Mainly cloudy with a few fog and light rain patches.	0.2	20.6	8.9	85.5	SE
8-Mar-16	Tue	Fresh northerly winds, occasionally strong offshore and on high ground at first.	0	21.8	16.2	82.2	SE
9-Mar-16	Wed	Mainly cloudy with a few fog and light rain patches.	15.5	21	12	91.0	SE
10-Mar-16	Thu	Mainly cloudy with a few fog and light rain patches.	16.8	13.4	21.0	94	N/NW
11-Mar-16	Fri	Moderate to fresh easterly winds	0.1	10.5	15.2	77	N
12-Mar-16	Sat	Cloudy to overcast with occasional rain	0.1	12.3	11.1	88	E
13-Mar-16	Sun	Mainly fine. Moderate easterly winds.	6.8	16.5	4	97.5	N/NW
14-Mar-16	Mon	Fine. Dry in the afternoon. Light to moderate easterly winds.	0.8	14.5	20	85.5	N
15-Mar-16	Tue	Mainly cloudy. Sunny intervals during the day. Light to moderate easterly winds.	Trace	14.1	11.7	83	E/NE
16-Mar-16	Wed	Moderate to fresh easterly winds	1.1	14.4	9.7	88	E/NE
17-Mar-16	Thu	Cloudy to overcast with occasional rain	2.2	17.8	13.4	92.5	E/NE
18-Mar-16	Fri	Fine. Dry in the afternoon. Light to moderate easterly winds.	Trace	21.7	16	89	SE
19-Mar-16	Sat	Mainly cloudy with a few fog and light rain patches.	Trace	23.1	8.3	93	E
20-Mar-16	Sun	Moderate to fresh easterly winds	0.3	21.7	23.2	82.5	E/SE
21-Mar-16	Mon	Moderate to fresh easterly winds	59.6	18.6	19.2	92.5	E/NE
22-Mar-16	Tue	Cloudy to overcast with occasional rain	1.7	18.1	18	92	E/NE
23-Mar-16	Wed	Cloudy to overcast with occasional rain	8.7	19.3	14.5	96.2	E/NE
24-Mar-16	Thu	Cloudy to overcast with occasional rain	33.4	15.6	15.6	95.2	E/NE
25-Mar-16	Fri	Moderate to fresh easterly winds	1.4	13.7	11.5	76	N/NW
26-Mar-16	Sat	Moderate to fresh easterly winds	0	15.3	11.3	67	SE
27-Mar-16	Sun	Moderate to fresh easterly winds	0	17.1	11.7	58	SE
28-Mar-16	Mon	Mainly cloudy with coastal fog.	0	17.2	10.8	54.5	E/NE
29-Mar-16	Tue	Light to moderate southeasterly winds.	Trace	17.8	10.2	60.5	E/NE
30-Mar-16	Wed	Light to moderate southeasterly winds.	Trace	19.9	12.3	78.7	SW
31-Mar-16	Thu	Mainly cloudy with coastal fog.	0	21.3	9.5	84.5	SW

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-Apr-16	Fri	Mainly cloudy and foggy with a few showers.	0	22.6	5.8	80.7	W/NW
2-Apr-16	Sat	Mainly cloudy and foggy with a few showers.	Trace	22.6	7	84	W/NW
3-Apr-16	Sun	Mainly cloudy and foggy with a few showers.	0	23.3	7.9	82.1	E/SE
4-Apr-16	Mon	Cloudy and foggy with a few showers. Moderate south to southeasterly winds.	4.3	24.5	8	81	E/SE
5-Apr-16	Tue	Mainly cloudy and foggy with a few showers.	Trace	25.5	8.5	87.5	E/SE
6-Apr-16	Wed	Mainly cloudy and foggy with a few showers.	0	23.6	8.2	88	SE
7-Apr-16	Thu	Mainly cloudy and foggy with a few showers.	0	24.5	6.7	86.2	E/SE
8-Apr-16	Fri	Cloudy and foggy with a few showers. Moderate south to southeasterly winds.	Trace	25.3	6.5	84.7	E/SE
9-Apr-16	Sat	Cloudy with a few showers	Trace	25.6	7.2	85	SE
10-Apr-16	Sun	Cloudy with a few showers	22.1	23.5	9	89.5	SE
11-Apr-16	Mon	Mainly cloudy and foggy with a few showers.	0.4	21.1	10.5	90.5	SE
12-Apr-16	Tue	Mainly cloudy and foggy with a few showers.	11.4	20.1	13	92.5	E/SE
13-Apr-16	Wed	Mainly cloudy and foggy with a few showers.	76.4	22.6	9.6	94.5	E/SE
14-Apr-16	Thu	Cloudy and foggy with a few showers. Moderate south to southeasterly winds.	0.7	23	6.4	98	SE
15-Apr-16	Fri	Cloudy and foggy with a few showers. Moderate south to southeasterly winds.	3.4	21.4	15.5	98.2	SE
16-Apr-16	Sat	Mainly cloudy and foggy with a few showers.	Trace	24.3	9.7	89	S/SW
17-Apr-16	Sun	Mainly cloudy and foggy with a few showers.	Trace	25.8	9.1	85	S/SW
18-Apr-16	Mon	Cloudy with a few showers	23.1	22.9	7.2	82.2	W/NW
19-Apr-16	Tue	Cloudy with a few showers	Trace	20.7	17.7	84.7	E/SE
20-Apr-16	Wed	Moderate southerly winds.	Trace	21.4	14.1	84.5	SE
21-Apr-16	Thu	Moderate southerly winds.	Trace	24.7	6.1	84.5	W/NW
22-Apr-16	Fri	Cloudy with a few showers	8.3	23.6	9.7	80	E/SE
23-Apr-16	Sat	Cloudy with a few showers and thunderstorms.	2.8	24.7	8	83	E/SE
24-Apr-16	Sun	Cloudy with a few showers and thunderstorms.	41.4	24.8	7.5	88	W/NW
25-Apr-16	Mon	Cloudy with a few showers and thunderstorms.	12.4	25.8	6.5	88	W/NW
26-Apr-16	Tue	Sunny intervals and a few showers. Fog patches at first.	Trace	27.2	9.7	85	S/SW
27-Apr-16	Wed	Mainly cloudy with a few showers	0.9	27.3	7.5	82	W/NW
28-Apr-16	Thu	Mainly cloudy. A few showers later	1.7	26.4	5.5	77.5	W/NW
29-Apr-16	Fri	Mainly cloudy with a few showers	Trace	23.8	12	74	E/NE
30-Apr-16	Sat	Mainly cloudy with a few showers	1.5	21.8	8	79	E/NE

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-May-16	Sun	Cloudy with a few showers	3.1	21.8	6.8	89.8	W/NW
2-May-16	Mon	Mainly cloudy with showers.	0.3	25.4	7.2	87.2	W/NW
3-May-16	Tue	Mainly cloudy with showers.	30.7	26.7	7	80.7	W/NW
4-May-16	Wed	Mainly cloudy with isolated showers.	Trace	25.7	7.7	83	SE
5-May-16	Thu	Hot with sunny intervals during	0	28	7.5	82.2	S/SW
6-May-16	Fri	Hot with sunny periods and a few showers.	0	28.8	7.5	81	S/SW
7-May-16	Sat	Hot with sunny intervals during	0	29	8	80.5	S/SE
8-May-16	Sun	Hot with sunny periods and a few showers.	0	28.8	8.5	79.2	S/SE
9-May-16	Mon	Hot with sunny periods and a few showers.	0	28.1	8.5	79.2	S
10-May-16	Tue	Cloudy with a few showers	60.3	25.1	7.5	88.5	SW
11-May-16	Wed	Hot with sunny periods and a few showers.	0	25.8	9.5	70	E/SE
12-May-16	Thu	Cloudy with a few showers	Trace	25.1	13	76.7	SE
13-May-16	Fri	Mainly cloudy. Sunny intervals in the afternoon.	Trace	25.7	11.5	77.5	SE
14-May-16	Sat	Cloudy with a few showers	4.7	25.4	9.1	83	E/SE
15-May-16	Sun	Mainly cloudy. Sunny intervals in the afternoon.	1	27.1	8.3	81	E/SE
16-May-16	Mon	Cloudy with a few showers	0.3	24.6	8.2	71.5	N/NE
17-May-16	Tue	cloudy with one or two rain	1.2	23.3	14.7	83	E/SE
18-May-16	Wed	cloudy with one or two rain	0	24.5	14.5	71.5	E/SE
19-May-16	Thu	Cloudy with a few showers	Trace	25.6	8.9	80.7	E/SE
20-May-16	Fri	Mainly fine and hot. Light to moderate east to southeasterly winds.	16.1	25	8.5	91.2	E/SE
21-May-16	Sat	Mainly fine and hot. Light to moderate east to southeasterly winds.	37.6	26.2	8.1	87	E/SE
22-May-16	Sun	Mainly fine and hot. Light to moderate east to southeasterly winds.	0	27.6	6.9	82	E/NE
23-May-16	Mon	Mainly fine and hot. Light to moderate east to southeasterly winds.	Trace	27.3	5.5	74.5	E/NE
24-May-16	Tue	Mainly fine and hot. Light to moderate east to southeasterly winds.	Trace	28.2	9.6	80	SE
25-May-16	Wed	Mainly fine and hot. Light to moderate east to southeasterly winds.	Trace	28	9.6	80	SE
26-May-16	Thu	Mainly cloudy with a few showers. Moderate to fresh easterly winds.	0.1	27.6	12.5	82.5	E/SE
27-May-16	Fri	Mainly fine and very hot.	14.4	27.1	14	88.7	E/SE
28-May-16	Sat	Mainly fine and very hot.	62.9	26.9	8	89.8	E/SE
29-May-16	Sun	Mainly fine and very hot.	0.8	28.9	7.9	82.5	W/SW
30-May-16	Mon	Mainly fine and very hot.	0.1	29.5	9.1	81.5	W/NW
31-May-16	Tue	Mainly fine and very hot.	0	30.1	8	77.2	W/NW

## **Appendix H**

### **Waste Flow Table**

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

Monthly Summary Waste Flow Table for 2016

Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of Non-Inert C&D Wastes Generated Monthly					Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated (in m <sup>3</sup> )	Broken Concrete (in m <sup>3</sup> )	Building Debris (in m <sup>3</sup> )	Mixed Rock & Soil (in m <sup>3</sup> )	Bentonite (in m <sup>3</sup> )	Rubbish (in m <sup>3</sup> )	Slurry (in m <sup>3</sup> )	Rock (in m <sup>3</sup> )	Soil (in m <sup>3</sup> )	Reused in this Project (in m <sup>3</sup> )	Metals (in m <sup>3</sup> )	Paper/ cardboard packaging (in m <sup>3</sup> )	Plastics (in m <sup>3</sup> )	Chemical Waste (in m <sup>3</sup> / Litre)	Others, e.g. general refuse (in m <sup>3</sup> )	Metals (in ton)	Paper/ cardboard packaging (in ton)	Plastics (in ton)	Chemical Waste (in Litre)	Others, e.g. general refuse (in ton)
	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> )	(in m <sup>3</sup> / Litre)	(in m <sup>3</sup> )	(in ton)	(in ton)	(in ton)	(in Litre)	(in ton)
Jan	0.01559	0	0	0	0	0	0	0	0.01559	0	0	0	0	0	0	0	0	0	0	0
Feb	0.007	0	0	0	0	0	0	0	0	0	0	0	0	0.007	0	0	0	0	0	0
Mar	0.03685	0	0	0	0	0	0	0.03685	0	0	0	0	0	0.001	0	0	0	0	0	0
Apr	0.03399	0	0	0	0	0	0	0.03399	0	0	0	0	0	0.001	0	0	0	0	1.2	0
May	0.09171	0	0	0	0	0	0	0.09171	0	0	0	0	0	0.001	0	0	0	0	0	0
Jun																				
Jul																				
Aug																				
Sep																				
Oct																				
Nov																				
Dec																				
Total	0.18514	0	0	0	0	0	0	0.17814	0	0	0	0	0	0.011	0	0	0	0	1.2	0

Name of Employer: MTR Corporation Limited

Contract No.: C65931-13C

## **Appendix I**

### **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
<b>NOISE IMPACT</b>						
S.5.1.1	<b><u>Use of quieter plant</u></b>	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
S.5.1.1	<b><u>Use of noise enclosure and movable barrier</u></b> <ul style="list-style-type: none"> <li>• movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME;</li> <li>• noise enclosure can achieve 15dB(A) reduction for PME;</li> <li>• 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;</li> <li>• 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;</li> <li>• Barrier material of surface mass in excess of 7kg/m<sup>2</sup> shall be required to achieve the maximum screening effect (and minimum 10kg/m<sup>2</sup> for noise enclosure);</li> <li>• 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.</li> </ul>	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	<b><u>General Construction Noise Control Measures</u></b> <ul style="list-style-type: none"> <li>• 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;</li> <li>• The statutory and non-statutory requirements and guidelines shall be complied with;</li> <li>• 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;</li> </ul>	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
	<ul style="list-style-type: none"> <li>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;</li> <li>Noisy equipment and noisy activities shall be located as far away from the NSRs as is practical;</li> <li>Unused equipment shall be turned off;</li> <li>PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided;</li> <li>All plant and equipment shall be maintained regularly; and</li> <li>Material stockpiles and other structures shall be effectively utilized as noise barriers, whenever practicable.</li> </ul>					
<b>AIR QUALITY IMPACT</b>						
S.5.1.2	<p><b><u>Construction Dust Control Measures</u></b></p> <ul style="list-style-type: none"> <li>Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>Covering of stockpile of excavated dusty materials, if any, with impervious sheeting or spraying with water to maintain the entire surface wet;</li> <li>Provision of vehicle washing facilities at the entry and exit points of site;</li> <li>Tarpaulin covering of any dusty materials being transported to and from site by vehicle;</li> <li>Positioning of construction plant at maximum practicable distance from air sensitive receivers; and</li> <li>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</li> </ul>	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
<b>WATER QUALITY IMPACT</b>						
S.5.1.3	<p><b><u>Construction Water Quality Impact Measures</u></b></p> <ul style="list-style-type: none"> <li>• Collection of wastewater into a sedimentation tank for treatment before discharge into the public drainage system;</li> <li>• 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;</li> <li>• Installation of wheel washing facilities to minimize muddy runoff;</li> <li>• Regular maintenance and inspection of drainage systems and erosion control and silt removal facilities;</li> <li>• Management and monitoring of sewage treatment facilities (if any);</li> <li>• 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;</li> <li>• Coverage of stockpiles of C&amp;D materials (if any) during rainstorms; and</li> <li>• Site toilet facilities, if needed, should be chemical toilets or should have the sewage discharge directed to a foul sewer.</li> </ul>	To reduce water quality impact induced by the construction work	Contractor	Work site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance
<b>WASTE MANAGEMENT</b>						
S.5.1.4	<p><b><u>Construction Waste Management Measures</u></b></p> <ul style="list-style-type: none"> <li>• Scrap metals or abandoned equipment should be recycled if possible;</li> <li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li> <li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;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;</li> <li>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes; and</li> </ul>	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
	<ul style="list-style-type: none"> <li>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.</li> </ul>					
<b>LANDSCAPE AND VISUAL IMPACT</b>						
S.5.1.5	<p><b><u>Landscape and Visual Measures</u></b></p> <ul style="list-style-type: none"> <li>Clear demarcation of works area to prevent damages to existing trees in close proximity;</li> <li>Protection of all trees planned to be retained onsite;</li> <li>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</li> <li>Screening of construction works by hoardings/noise barriers around Works area in visually unobtrusive colours.</li> </ul>	To reduce landscape and visual impact by construction works.	Contractor	Work Site and nearby playground	Construction Stage	EIAO; ETWB TCW No. 3/2006.