AUES PROJECT NO. TCS/00704/14

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

28TH ENVIRONMENTAL MONITORING AND AUDIT (EM&A) MONTHLY REPORT – DECEMBER 2016

PREPARED FOR
BUILD KING CONSTRUCTION LIMITED

Quality Index

Date	Reference No.	Prepared By	Approved By
12 January 2017	TCS00704/14/600/R0126v2		
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Version	Date	Description
1	10 January 2017	First Submission
2	12 January 2017	Amended against IEC's comment

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Attn.: Mr. Kenneth Chow / Environmental Engineer II

12 January 2017

Dear Sirs

Consultancy Agreement A130-13
Independent Environmental Checker for CRS and LTS
LTS - Verification for 28th Monthly Environmental Monitoring and Audit (EM&A) Report (December 2016) (Report No.: TCS00704/14/600/R0126v2)

We refer to the 28th Monthly EM&A Report (December 2016) received under cover of the email from the Environmental Team, AUES, dated on 10 January 2017.

Further to our comments provided on 12 January 2107 and subsequent revision of the Report by AUES on 12 January 2017, we have no further comment and have verified the captioned report (Report No.: TCS00704/14/600/R0126v2).

Should you have any queries, please feel free to contact the undersigned at 3922 9366.

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 **28th** monthly EM&A Report presenting the monitoring results and inspection findings for the period from **1 to 31 December 2016** (hereinafter 'the Reporting Period').

SUMMARY OF ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Environmental Aspect	Environmental Monitoring Parameters / Inspection	Reporting Period	
		Number of Monitoring Location	Total Occasions
Air Quality	24-hour TSP	**1**	**6**
Construction Noise	$L_{eq(30min)}$ Daytime	**2**	**8**
Site Inspection Audit	Weekly inspection with ET, the Contractor and RE	--	**4**
	Monthly joint inspection with ET, the Contractor, RE and IEC	--	**1**

BREACH OF ACTION AND LIMIT (A/L) LEVELS

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

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

ENVIRONMENTAL COMPLAINT

ES04 No public complaint was received in the Reporting Period.

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

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

REPORTING CHANGE

ES06 No reporting changes were made in the Reporting Period.

SITE INSPECTION

ES07 In the Reporting Period, weekly site inspection by the MTRC, ET and Contractor was carried out on **9, 15, 19 and 29 December 2016** and the IEC was joined the site inspection on **29 December 2016**. No non-compliance but four (4) observations and Two (2) reminders were recorded during the site inspection.

ES08 It is reported that the transplanted tree TR-02 for this project was collapsed due to typhoon signal No. 8 HAIMA on 22 October 2016 and the tree has been subsequently removed. Further follow-up action will be made after an agreement is reached with Leisure and Cultural Services Department (LCSD).

FUTURE KEY ISSUES

ES09 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.

ES010 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.

ES011 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.

ES012 The Contractor should pay attention and implement sufficient protection to the transplanted tree for this project to avoid any damage done to the transplanted tree and prevent tree collapse in the future.

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1 INTRODUCTION

PROJECT BACKGROUND

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

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

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

(ii) Construction of two ventilation shafts; and

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

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

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

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

1.06 This is **28th** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1 to 31 December 2016**.

REPORT STRUCTURE

1.07 This Report is structured into the following sections:-

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

2 PROJECT ORGANIZATION AND SUBMISSION

PROJECT ORGANIZATION

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

MTR Corporation Limited (MTRCL)

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

Environmental Protection Department (EPD)

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

Resident Engineer (RE)

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

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

Independent Environmental Checker (IEC)

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

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

Environmental Team (ET)

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

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

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

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

The Contractor

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

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

SUMMARY OF ENVIRONMENTAL SUBMISSIONS

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

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

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

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

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

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust) Regulation	Notified EPD.
2	Chemical Waste Producer Registration - Waste Producers Number	WPN:5213-131-K3099-01 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-RS0928-16 obtained on 11 August 2016 Valid from 10 September 2016 to 09 March 2017 GW-RS0929-16 obtained on 14 August 2016 Valid from 14 September 2016 to 13 March 2017 GW-RS1213-16 obtained on 30 November 2016 Valid from 11 December 2016 to 10 June 2017

CONSTRUCTION PROGRESS

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

- RC structures for Subway
- BS installation
- ABWF (VE Panel, floor tile)
- Breakthrough of D-wall at H15
- demolition and modification of WAC kiosks

3 ENVIRONMENTAL IMPACT MONITORING REQUIREMENT

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

MONITORING PARAMETERS

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

- Air quality; and
- Construction noise

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

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

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

Remarks:

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

MONITORING LOCATIONS

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

Table 3-2 Air and Noise Monitoring Locations

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

MONITORING FREQUENCY AND PERIOD

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

Air Quality

3.06 Frequency of impact air quality monitoring:

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

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

Construction Noise

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

MONITORING EQUIPMENT

Air Quality Monitoring

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

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

Table 3-3 Air Quality Monitoring Equipment

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

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

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

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

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

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

Construction Noise Monitoring

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

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

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

Table 3-4 Construction Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238 / Rion NL-52
Calibrator	B&K Type 4231/ Rion NC-73
Portable Wind Speed Indicator	Testo Anemometer

MONITORING METHODOLOGY

24-hour TSP

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

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

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

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

Noise

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

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

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

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

DERIVATION OF ACTION/LIMIT (A/L) LEVELS

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

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

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

Table 3-6 Action and Limit Levels for Construction Noise

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

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

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

DATA MANAGEMENT AND DATA QA/QC CONTROL

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

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

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

4 MONITORING RESULTS

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

24-HOUR TSP AIR QUALITY MONITORING RESULTS

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

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

Date	24-hour TSP (μg/m^3)	Action Level	Limit Level
3-Dec-16	78	162	260
9-Dec-16	93		
15-Dec-16	65		
21-Dec-16	55		
24-Dec-16	131		
30-Dec-16	76		
Average (Range)	**88 (55 - 131)**		

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

NOISE MONITORING RESULTS

4.04 In the Reporting Period, **8** occasions noise measurement were conducted at N1 and N2. The sound level meter was set in 1m from the exterior of the building façade at N1 and N2. Therefore, no façade correction (+3dB(A)) is added according to acoustical principles and EPD guidelines. The noise measurement results at N1 and N2 are listed in ***Tables 4-2*** and ***4-3.*** The relevant graphical plots are shown in ***Appendix I***.

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

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	$L_{eq30min}$
9-Dec-16	13:07	67.9	68.8	68.5	68.2	69.5	69.1	69
15-Dec-16	14:33	68.5	67.3	69.4	68.0	68.5	69.0	69
19-Dec-16	11:27	67.8	69.7	68.0	68.1	69.4	69.0	69
28-Dec-16	10:11	68.8	67.9	67.7	67.2	68.5	68.1	68
Limit Level of Construction Noise		**75 dB(A)**						

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

Date	Start Time	1st Leq5	2nd Leq5	3rd Leq5	4th Leq5	5th Leq5	6th Leq5	$L_{eq30min}$
9-Dec-16	14:01	71.5	70.9	69.5	72.1	72.0	71.5	71
15-Dec-16	15:24	69.3	69.9	70.3	69.8	68.7	68.1	69
19-Dec-16	13:04	69.4	71.1	70.8	71.6	72.0	71.0	71
28-Dec-16	10:49	71.9	71.5	69.7	71.7	72.1	71.7	71
Limit Level of Construction Noise		**75 dB(A)**						

4.05 As shown in Tables 4-2 and 4-3, no noise measurement exceedance was recorded at both N1 and N2. Furthermore, there is no noise complaint (Action Level exceedance) received by the MTRCL and Contractor or EPD in the Reporting Period. The meteorological data during the impact monitoring days are shown in ***Appendix J***.

5 WASTE MANAGEMENT

GENERAL WASTE MANAGEMENT

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

RECORDS OF WASTE QUANTITIES

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

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

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

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

Type of Waste	Quantity	Disposal Location
Total C&D Materials (Inert) (m^3)	1041	-
Reused in this Contract (Inert) (m^3)	0	-
Reused in other Projects (Inert) (m^3)	0	-
Disposal as Public Fill (Inert) (m^3)	1036	TKO 137

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (m^3)	0	-
Recycled Paper / Cardboard Packing (m^3)	0	-
Recycled Plastic (m^3)	0	-
Chemical Wastes (m^3/L)	0	-
General Refuses (m^3)	5	-

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

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

6 SITE INSPECTION

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

FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

6.02 During the Reporting Period, **Four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **9, 15, 19 and 29 December 2016** and the IEC was joined the site inspection on **29 December 2016**.

6.03 No non-compliance was noted. However, four (4) observations and two (2) reminders were recorded by the ET. The findings / deficiencies observed during the weekly site inspections are listed in ***Table 6-1***.

Table 6-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
29 November 2016	• Chemical containers were observed on bare ground. The contractor was advised to place chemical containers inside drip tray.	• Chemical containers were removed from site. Last observation closed.
9 December 2016	• Chemical containers near tree protection zone were observed. The contractor was advised to relocate chemical containers on-site.	• Chemical containers were relocated. Last observation closed.
15 December 2016	• Empty cement bags were observed on the ground. The contractor was advised to dispose empty cement bags properly. • Construction material inside tree protection zone was observed. The contractor was advised to remove it from tree protection zone.	• Empty cement bags were disposed. Last observation closed. • Construction material inside tree protection zone was removed. Last observation closed.
19 December 2016	• Chemical containers were observed on the ground. The contractor was advised to place inside drip tray.	• Chemical containers were removed from site. Last observation closed.
29 December 2016	• The contractor was reminded to maintain the AquaSed regularly. • The contractor was reminded to place new chemical containers inside drip tray.	• Not required for reminder. • Not required for reminder.

6.04 It is reported that the transplanted tree TR-02 for this project was collapsed due to typhoon signal No. 8 HAIMA on 22 October 2016 and the tree has been subsequently removed. Further follow-up action will be made after an agreement is reached with Leisure and Cultural Services Department (LCSD).

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

7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

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

Table 7-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics					
	Frequency	Cumulative	Complaint Nature			
			Air	Noise	Water	Others
28 Aug 2014 – 30 November 2016	0	0	NA	NA	NA	NA
1– 31 December 2016	0	0	NA	NA	NA	NA

Table 7-2 Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 30 November 2016	0	0	NA	NA	NA	NA
1– 31 December 2016	0	0	NA	NA	NA	NA

Table 7-3 Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics					
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 30 November 2016	0	0	NA	NA	NA	NA
1– 31 December 2016	0	0	NA	NA	NA	NA

8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

GENERAL REQUIREMENTS

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

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

Table 8-1 Environmental Mitigation Measures

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

TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

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

- Mini-piles at Eastbound
- Excavation at Eastbound Footpath & Slow Lane
- Excavation at Tram Track RC Decking
- Excavation at Westbound Slowlane
- Excavation Children Playground
- RC Structure Works

KEY ISSUES FOR THE COMING MONTH

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

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

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

9 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

9.01 This is the **28th** monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from **1** to **31 December 2016**.

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

9.03 In the Reporting Period, total of **eight** (**8)** occasions of noise measurement were conducted at N1 and N2 and no exceedance were recorded.

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

9.05 **Four (4)** occasions of weekly site inspections to evaluate site environmental performance was carried out by the RE, ET and the Contractor on **9, 15, 19 and 29 December 2016** and the IEC was joined the site inspection on **29 December 2016.** No non-compliance was noted but four (4) observations and two (2) reminders were recorded by the ET.

9.06 It is reported that the transplanted tree TR-02 for this project was collapsed due to typhoon signal No. 8 HAIMA on 22 October 2016 and the tree has been subsequently removed. Further follow-up action will be made after an agreement is reached with Leisure and Cultural Services Department (LCSD).

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

RECOMMENDATIONS

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

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

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

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

Appendix A

Project Site Layout Plan

現有港鐵灣仔站
EXISTING WAC STATION

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

市區重建局H15區A工地
URA H15 SITE A

修頓遊樂場
SOUTHORN PLAYGROUND

鐵路區
RAILWAY AREA

軒尼詩大樓
HENNESSY BUILDING

協生大廈
HIP SANG BUILDING

越興大廈
YUE HING BUILDING

華寧大廈
WARNER BUILDING

昭憲大廈
CHIU HIN MANSION

春暉大廈
CHUN FAI BUILDING

THOMSON ROAD

JOHNSTON ROAD
莊士敦道

LOCKHART ROAD
駱克道

JAFFE ROAD

O'BRIEN ROAD

LUARD ROAD
盧押道

STONE NULLAH LANE
石水渠街

CROSS STREET
交加街

TAI YUEN STREET
太原街

SPRING GARDEN LANE
春園街

LEE TUNG STREET

AMOY STREET
廈門街

SWATOW STREET
汕頭街

SAM PAN STREET
三板街

WIP Jul 2010

0 5 10 15 20 25
METRES
1 : 1000

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

DRAWN	HO
DESIGNED	BW
CHECKED	BL
APPROVED	AFK
DATE	04MAY2011

MTR

WAC STATION LEE TUNG STREET SUBWAY

ORIGINATOR

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

CADD REF. NEX1050_2.7A_001D.dgn

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

SCALE 1:1000 (A3)

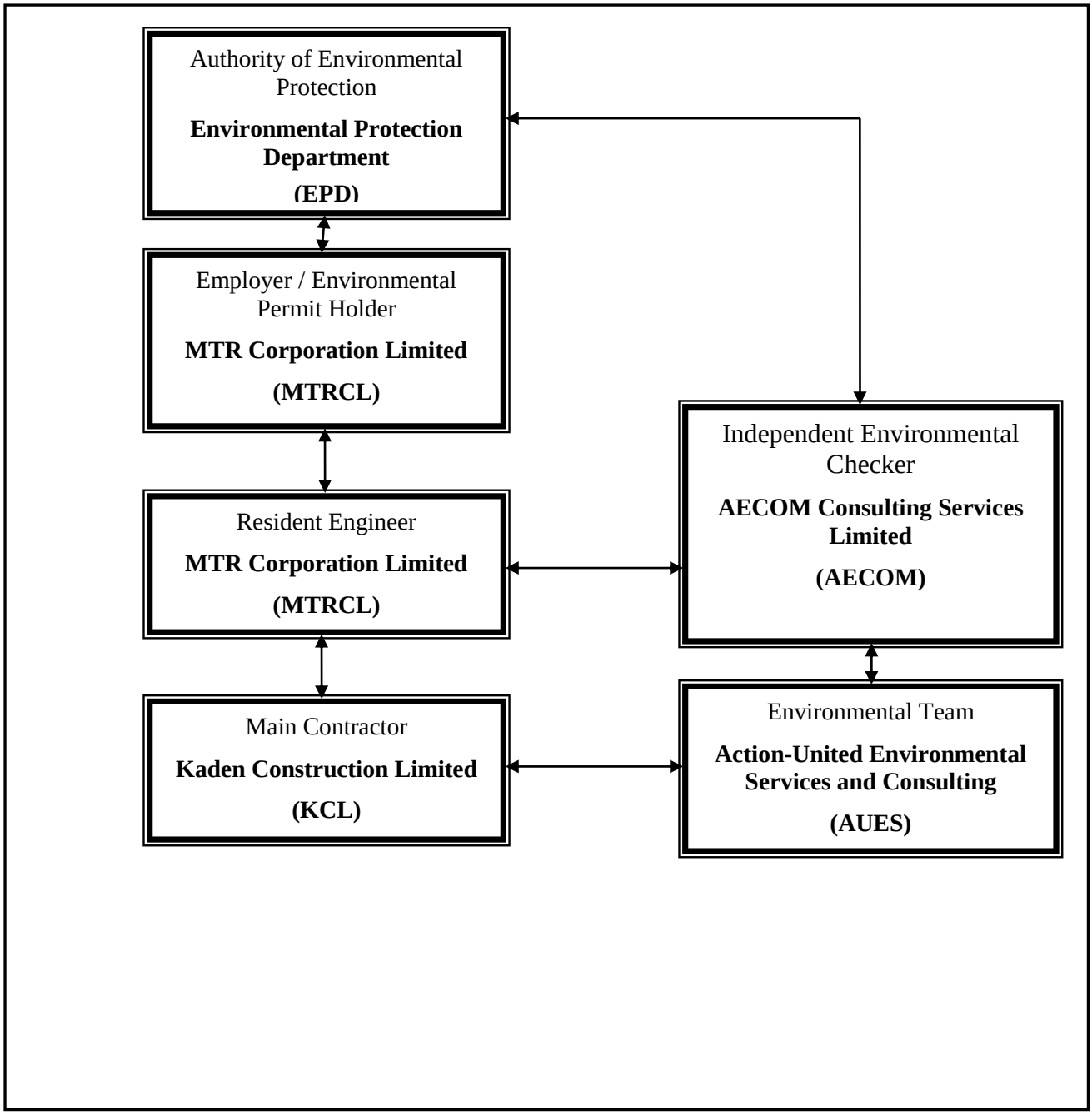
DRAWING NO. NEX1050/2.7A/001

REV. D

PLOT DRV: C:\Programdata\Bentley\MicroStation V8i\SELECTSeries\WorkSpace\System\pltcfg\MTR_PDF_BW_COL_300DPI.plt
MODELNAME: Default
FILENAME: J:\282435\REPORT\LEW\PPT\20120516\NEX1050_2.7A_000.dgn
PRINTED BY: hos7494 20/06/2012 10:35:06

Appendix B

Organization of the Project and Master Construction Programme


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

Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
MTRCL	Resident Engineer	Mr. Raymond Lee	3547 0002	3547 0090
AECOM	Independent Environmental Checker	Mr. 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
AUES	Assistant Environmental Consultant	Mr. Martin Li	2959 6059	2959 6079

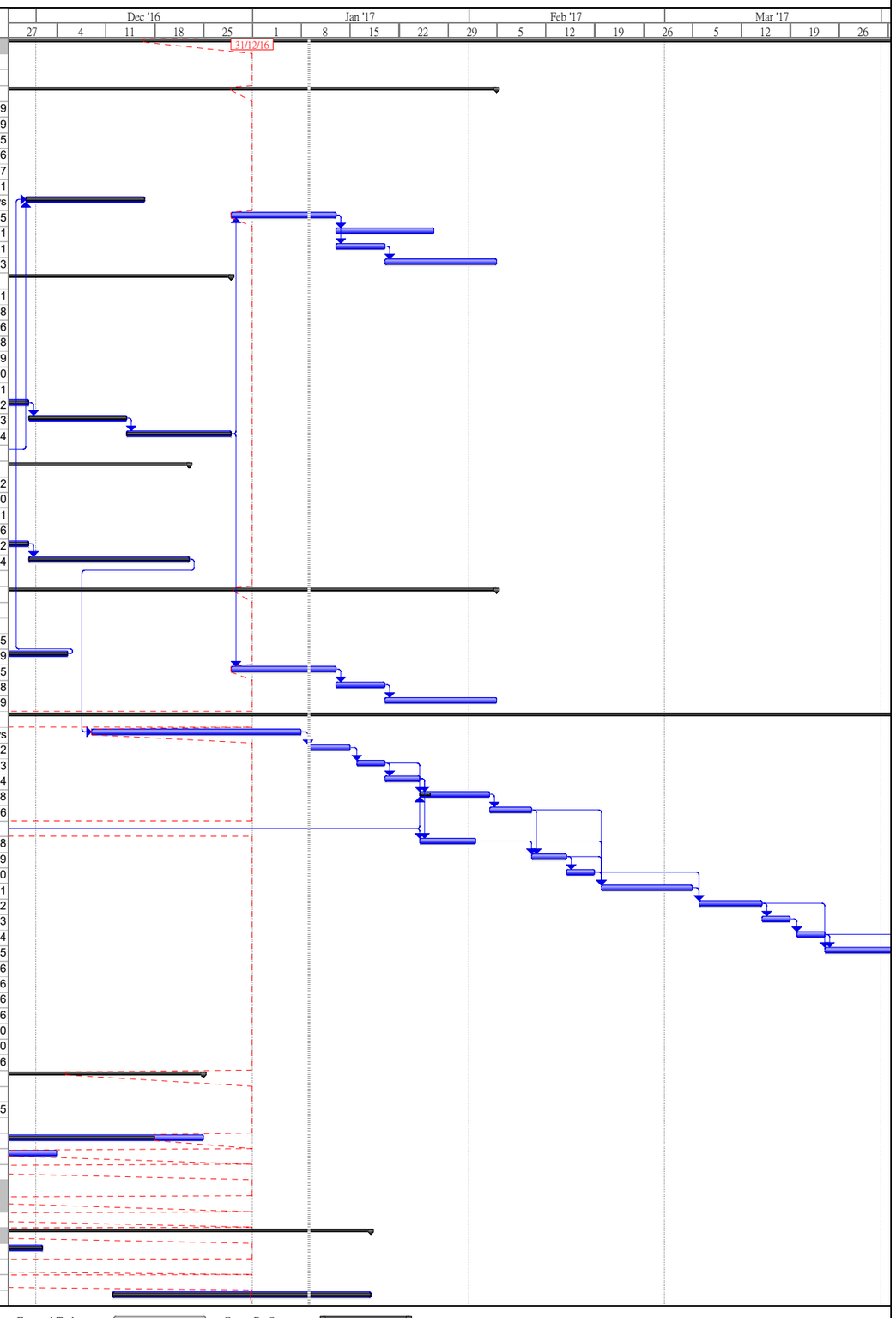
Legend:

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

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

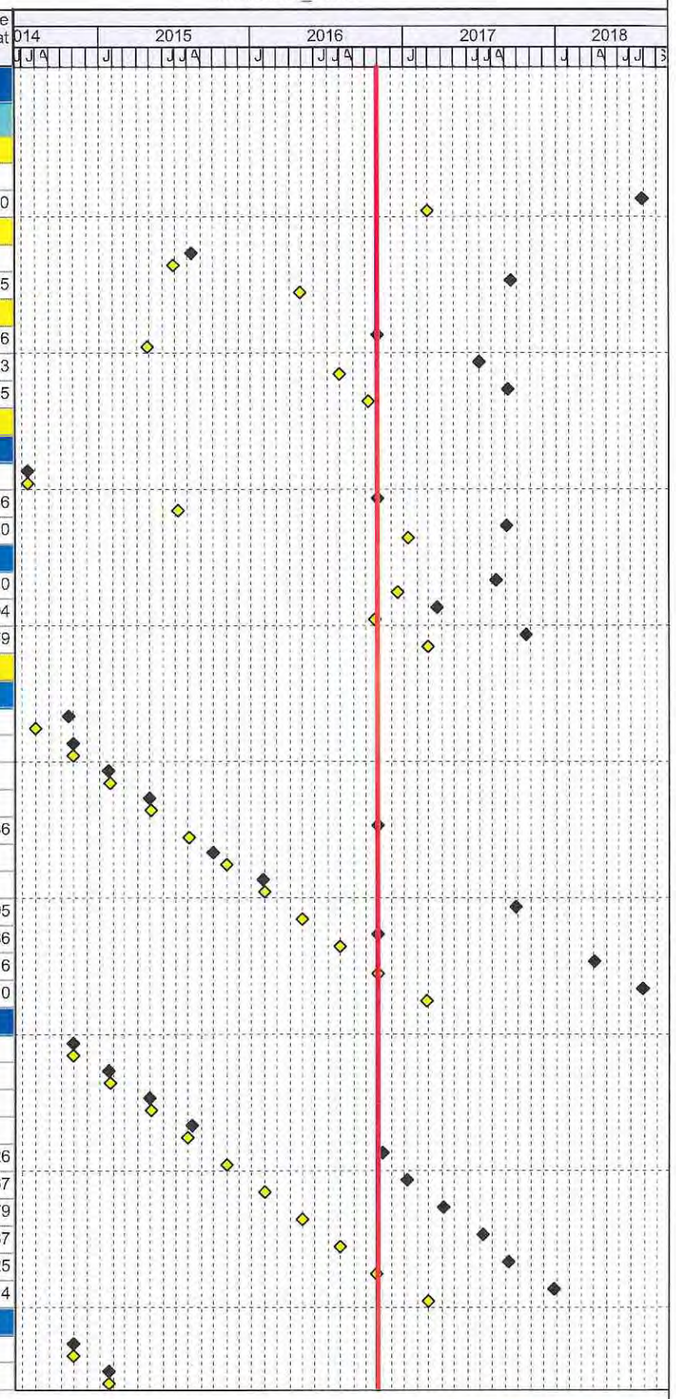
End Dec 2016

ID	Task Name	PMP ID	Cost Centre	Duration	Start	Finish	% Complete	Planned Start Last Month	Planned Finish Last Month	Predecessors
1	**Stage 2 ELS**			**1784 days**	**Tue 26/4/11**	**Tue 2/5/17**	**77%**	**Thu 23/4/15**	**Mon 19/12/16**	
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**	**Sat 28/5/16**	
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**	
33	**Eastbound Footpath & Slow Lane**			**207 days**	**Mon 30/5/16**	**Sat 4/2/17**	**66%**	**Mon 30/5/16**	**Sat 24/12/16**	
34	Removal of temporary working platform at Stage 1	NA	B6	6 days	Sat 4/6/16	Sat 11/6/16	100%	Sat 4/6/16	Sat 11/6/16	29
35	Breaking temporary concrete carriageway at slow lane	NA	B6	6 days	Mon 30/5/16	Sat 4/6/16	100%	Mon 30/5/16	Sat 4/6/16	29
36	Excavation to existing UU formation	JnR.0050	B6	6 days	Mon 6/6/16	Mon 13/6/16	100%	Mon 6/6/16	Mon 13/6/16	35
37	Temp. UU supports	JnR.0050	B6	12 days	Tue 14/6/16	Mon 27/6/16	100%	Tue 14/6/16	Mon 27/6/16	36
38	Demolish existing granite sea walls		B6	10 days	Tue 28/6/16	Sat 9/7/16	100%	Tue 28/6/16	Sat 9/7/16	37
39	Excavation to -1.0 mPD	JnR.0050	B6	25 days	Mon 11/7/16	Mon 14/11/16	100%	Mon 11/7/16	Mon 14/11/16	51
40	Excavation to 3rd layer W/S		B6	15 days	Tue 29/11/16	Fri 16/12/16	100%	Tue 29/11/16	Fri 16/12/16	56,87FS-5 days
41	Excavation to -2.75mPD and erect strut	JnR.0120	B6	12 days	Thu 29/12/16	Thu 12/1/17	0%	Mon 7/11/16	Sat 19/11/16	55
42	Excavation to -5.8 and erect strut	JnR.0130	B6	12 days	Fri 13/1/17	Thu 26/1/17	0%	Mon 21/11/16	Sat 3/12/16	41
43	Sheetpiling for sump pit	JnR.0130	B6	6 days	Fri 13/1/17	Thu 19/1/17	0%	Mon 5/12/16	Sat 10/12/16	41
44	Excavation to -8.2 and erect strut	JnR.0130	B6	12 days	Fri 20/1/17	Sat 4/2/17	0%	Mon 12/12/16	Sat 24/12/16	43
45	**Tram Track RC Decking**			**165 days**	**Tue 14/6/16**	**Wed 28/12/16**	**100%**	**Tue 14/6/16**	**Wed 28/12/16**	
46	Excavation to +1.0 mPD underneath Trams Deck	JnR.0050	B6	25 days	Tue 14/6/16	Wed 13/7/16	100%	Tue 14/6/16	Wed 13/7/16	71
47	Installation of w/s at 1st layer strut S3	JnR.0050	B6	3 days	Sat 27/8/16	Tue 30/8/16	100%	Sat 27/8/16	Tue 30/8/16	48
48	Pre-grouting for Soil Nail	JnR.0050	B6	38 days	Thu 14/7/16	Fri 26/8/16	100%	Thu 14/7/16	Fri 26/8/16	46
49	Grout Curtain for pipe piles	JnR.0050	B6	18 days	Sat 27/8/16	Sat 17/9/16	100%	Sat 27/8/16	Sat 17/9/16	48
50	300mm thkc concrete & excavation to +0.5 mPD	JnR.0050	B6	4 days	Mon 19/9/16	Thu 22/9/16	100%	Mon 19/9/16	Thu 22/9/16	49
51	Pipe Piles & grout curtain installation at +0.5 mPD	JnR.0050	B6	30 days	Fri 23/9/16	Sat 29/10/16	100%	Fri 23/9/16	Sat 29/10/16	50
52	Extension of pipe pile and erect strut at + 1.0 mPD	JnR.0050	B6	6 days	Mon 31/10/16	Sat 5/11/16	100%	Mon 31/10/16	Sat 5/11/16	51
53	Excavation to -1.5mPD and erect strut	JnR.0110	B6	20 days	Mon 7/11/16	Tue 29/11/16	100%	Mon 7/11/16	Tue 29/11/16	52
54	Excavation to -2.75mPD and erect strut	JnR.0120	B6	12 days	Wed 30/11/16	Tue 13/12/16	100%	Wed 30/11/16	Tue 13/12/16	53
55	Excavation to -5.3 and blinding	JnR.0130	B6	12 days	Wed 14/12/16	Wed 28/12/16	100%	Wed 14/12/16	Wed 28/12/16	54
56	**Stage 2 Pumping Test**	JnR.0070 to 0090		**12 days**	**Mon 3/10/16**	**Mon 17/10/16**	**100%**	**Mon 3/10/16**	**Mon 17/10/16**	
69	**Westbound Slowlane**		B6	**185 days**	**Mon 16/5/16**	**Thu 22/12/16**	**100%**	**Mon 16/5/16**	**Thu 22/12/16**	
70	Temp. UU supports	JnR.0050	B6	12 days	Mon 16/5/16	Sat 28/5/16	100%	Mon 16/5/16	Sat 28/5/16	82
71	Excavatino to +1.0 mPD	JnR.0050	B6	12 days	Mon 30/5/16	Mon 13/6/16	100%	Mon 30/5/16	Mon 13/6/16	70
72	Excavation to -1.0 mPD	JnR.0050	B6	6 days	Mon 31/10/16	Sat 5/11/16	100%	Mon 31/10/16	Sat 5/11/16	51
73	Excavation to 3rd layer W/S	JnR.0110	B6	12 days	Tue 18/10/16	Mon 31/10/16	100%	Tue 18/10/16	Mon 31/10/16	56
74	Excavation to -2.75mPD and erect strut	JnR.0120	B6	20 days	Mon 7/11/16	Tue 29/11/16	100%	Mon 7/11/16	Tue 29/11/16	52
75	Excavation to -4.9 and blinding	JnR.0130	B6	20 days	Wed 30/11/16	Thu 22/12/16	100%	Wed 30/11/16	Thu 22/12/16	74
76	**Mini-piles at Westbound Slowlane**	JnR.0050	B6	**39 days**	**Thu 24/3/16**	**Fri 13/5/16**	**100%**	**Thu 24/3/16**	**Fri 13/5/16**	
83	**Children Playground**			**233 days**	**Wed 27/4/16**	**Sat 4/2/17**	**70%**	**Wed 27/4/16**	**Wed 11/1/17**	
84	Trial soil nail		B6	19 days	Wed 27/4/16	Fri 20/5/16	100%	Wed 27/4/16	Fri 20/5/16	
85	Excavation to +1.0 mPd	JnR.0050	B6	15 days	Wed 1/6/16	Sat 18/6/16	100%	Wed 1/6/16	Sat 18/6/16	
86	Excavation to -1.0 mPd	JnR.0050	B6	15 days	Mon 20/6/16	Thu 7/7/16	100%	Mon 20/6/16	Thu 7/7/16	85
87	Excavation to 3rd layer W/S	JnR.0050	B6	20 days	Thu 3/11/16	Mon 5/12/16	100%	Thu 3/11/16	Mon 5/12/16	39
88	Excavation to -5.8 and erect strut	JnR.0130	B6	12 days	Thu 29/12/16	Thu 12/1/17	0%	Mon 5/12/16	Mon 19/12/16	55
89	Sheetpiling for sump pit	JnR.0130	B6	6 days	Fri 13/1/17	Thu 19/1/17	0%	Mon 19/12/16	Tue 27/12/16	88
90	Excavation to -8.2 and erect strut	JnR.0130	B6	12 days	Fri 20/1/17	Sat 4/2/17	0%	Tue 27/12/16	Wed 11/1/17	89
91	**RC Structure**			**1784 days**	**Tue 26/4/11**	**Tue 2/5/17**	**1%**	**Tue 26/4/11**	**Tue 2/5/17**	
92	Form BA8 Consent for H15 A&A Works (14 days in advance)	NA	B10	24 days	Fri 9/12/16	Sat 7/1/17	0%	Fri 9/12/16	Sat 7/1/17	75FS-12 days
93	Form BA 10 Notice of Commencement for H15 A&A Works	NA	B10	6 days	Mon 9/1/17	Sat 14/1/17	0%	Mon 9/1/17	Sat 14/1/17	92
94	Installation of portal frame for H15 land lot - Base	NA	B10	4 days	Mon 16/1/17	Thu 19/1/17	0%	Mon 16/1/17	Thu 19/1/17	93
95	Concrete encasement to steel portal to H15 - Base Slab	NA	B10	4 days	Fri 20/1/17	Tue 24/1/17	0%	Fri 20/1/17	Tue 24/1/17	94
96	Base Slab (H15 to Grid K)	JnR_0150	B10	7 days	Wed 25/1/17	Fri 3/2/17	20%	Wed 25/1/17	Fri 3/2/17	94,95,98
97	Waling/Strut Removal (H15 to Grid K)	JnR_0150	B10	5 days	Sat 4/2/17	Thu 9/2/17	0%	Sat 4/2/17	Thu 9/2/17	96
98	Base Slab (Grid K to J , sump pit)	JnR_0140	B10	9 days	Tue 26/4/11	Fri 6/5/11	0%	Tue 26/4/11	Fri 6/5/11	
99	Waling/Strut Removal (Grid K to J)	JnR_0140	B10	5 days	Wed 25/1/17	Wed 1/2/17	0%	Wed 25/1/17	Wed 1/2/17	95,98
100	Installation of portal frame for H15 land lot - Wall	NA	B10	4 days	Fri 10/2/17	Tue 14/2/17	0%	Fri 10/2/17	Tue 14/2/17	97,99
101	Concrete encasement to steel portal to H15 - Side Wall	NA	B10	4 days	Wed 15/2/17	Sat 18/2/17	0%	Wed 15/2/17	Sat 18/2/17	100
102	Sides Wall (H15 to Grid J)	JnR_0160	B10	12 days	Mon 20/2/17	Sat 4/3/17	0%	Mon 20/2/17	Sat 4/3/17	97,99,100,101
103	Waling/Strut Removal (H15 to Grid J)	JnR_0160	B10	8 days	Mon 6/3/17	Tue 14/3/17	0%	Mon 6/3/17	Tue 14/3/17	101,102
104	Installation of portal frame for H15 land lot - Top slab	NA	B10	4 days	Wed 15/3/17	Sat 18/3/17	0%	Wed 15/3/17	Sat 18/3/17	103
105	Concrete encasement to steel portal to H15 - Top Slab	NA	B10	4 days	Mon 20/3/17	Thu 23/3/17	0%	Mon 20/3/17	Thu 23/3/17	104
106	Top Slab (H15 to Grid J)	JnR_0170	B10	15 days	Fri 24/3/17	Tue 11/4/17	0%	Fri 24/3/17	Tue 11/4/17	103,105
107	Waling/Strut Removal (Grid L to J)	JnR_0170	B10	8 days	Wed 12/4/17	Mon 24/4/17	0%	Wed 12/4/17	Mon 24/4/17	105,106
108	Clearance of Falsework (14 days lead time + 2 days for removal)	JnR_0170	B10	14 days	Wed 12/4/17	Tue 2/5/17	0%	Wed 12/4/17	Tue 2/5/17	106
109	Vent Shaft (Fresh air) 1.2m to Roof	NA	B10	12 days	Wed 12/4/17	Fri 28/4/17	0%	Wed 12/4/17	Fri 28/4/17	106
110	Vent Shaft (Smoke extraction) up to 1.2m above ground	NA	B10	5 days	Wed 12/4/17	Thu 20/4/17	0%	Wed 12/4/17	Thu 20/4/17	106
111	Vent Shafts (Smoke Extraction) 1.2m to Roof	NA	B10	8 days	Fri 21/4/17	Sat 29/4/17	0%	Fri 21/4/17	Sat 29/4/17	110
112	Waterproofing and Protective Screeding for Subway Top Slab (Grid L to Grid J)	JnR_0170	B10	6 days	Fri 21/4/17	Thu 27/4/17	0%	Fri 21/4/17	Thu 27/4/17	110
113	Waterproofing and Protective Screeding for Subway Top Slab (Grid L toH15)	JnR_0170	B10	6 days	Wed 12/4/17	Fri 21/4/17	0%	Wed 12/4/17	Fri 21/4/17	106
114	**ABWF works inside New Subway**			**158 days**	**Mon 20/6/16**	**Sat 24/12/16**	**88%**	**Mon 20/6/16**	**Sat 24/12/16**	
115	Floor screeding (Grid B - J)	ABWF.D1_0010	B9	20 days	Mon 20/6/16	Wed 13/7/16	100%	Mon 20/6/16	Wed 13/7/16	
116	Block wall construction at LV & storm room	ABWF.D1_0020	B9	30 days	Thu 14/7/16	Wed 17/8/16	100%	Thu 14/7/16	Wed 17/8/16	115
117	Anchor installation for false ceiling (Grid B - J)		B9	15 days	Mon 15/8/16	Wed 31/8/16	100%	Mon 15/8/16	Wed 31/8/16	
118	Vent duct installatoin (Grid B -J)	BS I	B9	30 days	Mon 21/11/16	Sat 24/12/16	80%	Mon 21/11/16	Sat 24/12/16	
119	Drain pipe and FS pipe installation (Grid B-J)	BS I	B9	30 days	Mon 31/10/16	Sat 3/12/16	80%	Mon 31/10/16	Sat 3/12/16	
120	Cable Containment Installation (Grid B-J)	BS I	B9	30 days	Sat 15/10/16	Fri 18/11/16	80%	Sat 15/10/16	Fri 18/11/16	
121	**Existing Wan Chai Station (Require work in NTH)**			**178 days**	**Mon 21/12/15**	**Sat 30/7/16**	**100%**	**Mon 21/12/15**	**Sat 30/7/16**	
133	**Design**			**28 days**	**Mon 17/10/16**	**Thu 17/11/16**	**80%**	**Mon 17/10/16**	**Thu 17/11/16**	
134	ELS Stage 2 - BD/GEO comments in Oct 16	NA	NA	28 days	Mon 17/10/16	Thu 17/11/16	80%	Mon 17/10/16	Thu 17/11/16	
135	**Procurement**			**153 days**	**Mon 18/7/16**	**Tue 17/1/17**	**68%**	**Mon 18/7/16**	**Tue 17/1/17**	
136	Conglomerate Floor Tile for LTS Subway	NA	A1	115 days	Mon 18/7/16	Thu 1/12/16	100%	Mon 18/7/16	Thu 1/12/16	
137	VE Panel for LTS Subway	NA	A1	60 days	Mon 15/8/16	Wed 26/10/16	30%	Mon 15/8/16	Wed 26/10/16	
138	Flood Gate	NA	A1	60 days	Mon 15/8/16	Wed 26/10/16	30%	Mon 15/8/16	Wed 26/10/16	
139	Portal Frame for H15 connection	NA	B10	30 days	Mon 12/12/16	Tue 17/1/17	100%	Mon 12/12/16	Tue 17/1/17	



Task — Milestone — Rolled Up Task — Rolled Up Progress — External Tasks — Group By Summary
Progress — Summary — Rolled Up Milestone — Split — Project Summary — Deadline

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
C6593-13C LTS MP Rev.C _BL_Report (Oct16)								
Key Dates								
Commencement and Completion								
KD.COMM	Commencement of the Works (14-Apr'14)	0	14-Apr-14 A		14-Apr-14			
KD.COMP	Completion of the Whole of the Works, No.Cal.Wk. 150 (26-Feb'17)	0		28-Jul-18*		28-Jul-18	-517	0
Specified Parts of the Works								
KD.2A	2A - SBC Complete backfill, resurfacing, fencing, utilities, lighting and return to LCSD (28	0		11-Aug-15 A		02-Jul-15		
KD.2B	2B - Complete all works at the 2 new Shop Kiosks and hand over to the Employer (1-Ma	0		16-Sep-17*		16-Sep-17	-503	315
Programme Data / Interface Key Dates								
INF.AFC	Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Lev	0	31-Oct-16*		31-Oct-16		119	636
INF.H15	Interface Access for Contract H15, All Levels, No.Cal.Wk. 120 (31-Jul'16)	0	01-Jul-17*		01-Jul-17		-124	393
INF.SAMS	Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'	0	07-Sep-17*		07-Sep-17		-192	325
Site Area Possession and Return Dates								
Site Area Possession Date								
WAP.W1	Works Area 6593.W1, Within 3 months from commencement of works (14-Jul'14)	0	14-Jul-14 A		14-Jul-14			
WAP.W2	Works Area 6593.W2, Within 9 months from commencement of works (14-Jan'15)	0	31-Oct-16*		31-Oct-16		119	636
WAP.W3	Works Area 6593.W3, No later than 1 month after completion of resinstatement works a	0	05-Sep-17		05-Sep-17		-238	0
Site Area Return Date								
WAR.W1	Works Area 6593.W1, Within 36 months from commencement of works (14-Apr'17)	0		11-Aug-17*		11-Aug-17	-238	0
WAR.W2	Works Area 6593.W2, Within 36 months from commencement of works (14-Apr'17)	0		22-Mar-17*		22-Mar-17	-24	494
WAR.W3	Works Area 6593.W3, Within 2 months after possession date of Works Area 6593.W3	0		22-Oct-17		22-Oct-17	-238	279
Milestone Schedule								
Milestones A								
MS.A01	A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporay decking (3-Aug	0		21-Oct-14 A		02-Aug-14		
MS.A02	A2 Approval of Design of Mined Tunnel ESS; Hoarding phase/plan;TW under TramTrac	0		01-Nov-14 A		29-Jul-15		
MS.A03	A3 Satisfactory Implementation of Specified Plans (25-Jan'15)	0		24-Jan-15 A		31-Mar-15		
MS.A04	A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PM	0		02-May-15 A		07-Jul-15		
MS.A05	A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2	0		31-Oct-16		31-Oct-16	119	636
MS.A06	A6 Satisfactory Implementation of PMS (1-Nov'15)	0		30-Sep-15 A		30-Sep-15		
MS.A07	A7 Satisfactory Implementation of Specified Plans (31-Jan'16)	0		30-Jan-16 A		29-Feb-16		
MS.A08	A8 AIP for T&C of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)	0		26-Sep-17		26-Sep-17	-212	305
MS.A09	A9 Satisfactory Implementation of Specified Plans (31-Jul'16)	0		31-Oct-16		31-Oct-16	119	636
MS.A10	A10 AIP of Draft O&M manual and Draft As-built Drawings; Satisfactory Implementation	0		03-Apr-18		03-Apr-18	-401	116
MS.A11	A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17)	0		28-Jul-18		28-Jul-18	-517	0
Milestones B								
MS.B01	B1 Excavate to +2.5 of Southern Basketball Court & Children's Play Area - Cofferdam oc	0		01-Nov-14 A		01-Nov-14		
MS.B02	B2 SBC Excavation satisfactorily completed & Children's Play Area Excavation has reach	0		24-Jan-15 A		31-Mar-15		
MS.B03	B3 SBC Roof slab RC, JnR NFP & EBC 67% cofferdam Tram Track support 10%, JnR	0		29-Apr-15 A		23-May-15		
MS.B04	B4 SBC return, NBC Site entry formed, CPA RC base slab, JnR NFP & EBC Cofferdam	0		11-Aug-15 A		25-Aug-15		
MS.B05	B5 NBC cofferdam complete, CPA RC & vent shaft 1.2m above ground complete, Tram	0		09-Nov-16		09-Nov-16	109	626
MS.B06	B6 NBC Excavation to formation complete, JnR All Carriageways & Footpaths & Tram Tl	0		07-Jan-17		07-Jan-17	50	567
MS.B07	B7 NBC RC roof slab complete, JnR CW & FP & TT RC construction except temp openi	0		05-Apr-17		05-Apr-17	-38	479
MS.B08	B8 ABWF Degree 1 achieved, NBC All reinstatement complete, Opening through H15 D	0		06-Jul-17		06-Jul-17	-130	387
MS.B09	B9 ABWF Degree 3 achieved, All road reinstatement in Johnston Road & Hennessy Roa	0		07-Sep-17		07-Sep-17	-192	325
MS.B10	B10 All works in Cost Centre B satisfactorily completed (26-Feb'17)	0		27-Dec-17		27-Dec-17	-303	214
Milestones C								
MS.C01	C1 AIP BS detail design, suppliers & model types of major BS equipment & materials (2-I	0		01-Nov-14 A		01-Nov-14		
MS.C02	C2 AIP BS shop drawings (25-Jan'15)	0		23-Jan-15 A		31-Mar-15		



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

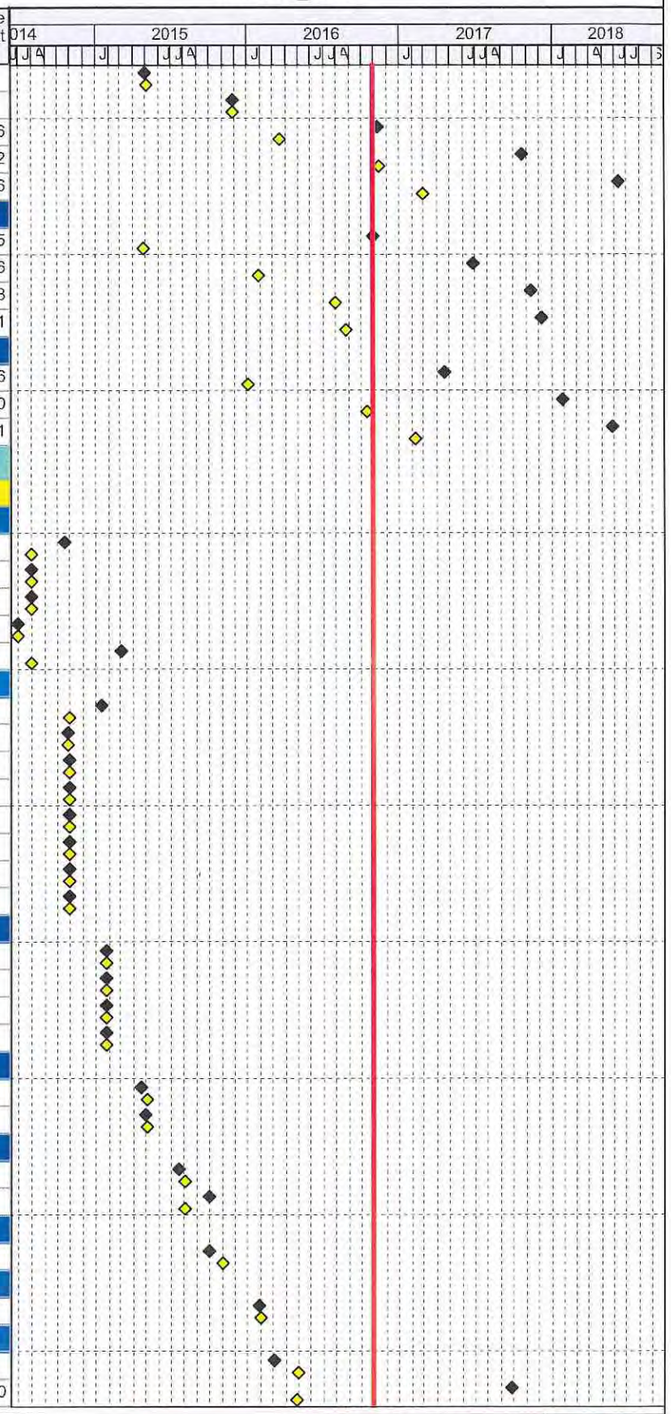
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
MS.C03	C3 Order all BS equiptment and materials (3-May'15)	0		02-May-15 A		01-Jun-15		
MS.C04	C4 Complete all factory acceptence testings (29-Nov'15)	0		28-Nov-15 A		31-Mar-16		
MS.C05	C5 Complete all delivery to site for ECS plant room (31-Jul'16)	0		09-Nov-16		09-Nov-16	109	626
MS.C06	C6 Complete all installation, T&C for New Subway (4-Dec'16)	0		20-Oct-17		20-Oct-17	-235	282
MS.C07	C7 Complete and pass all statutory inspections, Operations Team (26-Feb'17)	0		12-Jun-18		12-Jun-18	-471	46
Milestones D								
MS.D01	D1 New AFC Audit Room construction completed, including (3-May'15)	0		31-Oct-16		31-Oct-16	119	405
MS.D02	D2 Old AFC Audit Room and Maxim's/ Circle K kiosks demolished (31-Jan'16)	0		26-Jun-17		26-Jun-17	-120	166
MS.D03	D3 Breakthrought into WAC (31-Jul'16)	0		11-Nov-17		11-Nov-17	-258	28
MS.D04	D4 All works in Cost Centre D satisfactorily completed (28-Aug'16)	0		09-Dec-17		09-Dec-17	-286	231
Milestones E								
MS.E01	E1- AFC gates and barrier relocation works completed (3-Jan'16)	0		18-Apr-17		18-Apr-17	-51	466
MS.E02	E2- All structural A&A works for TIM completed (30-Oct'16)	0		29-Jan-18		29-Jan-18	-337	180
MS.E03	E3- All works in milestone E completed (26-Feb'17)	0		28-May-18		28-May-18	-456	61
A: Preliminaries and General Items								
Cost Centre A- Milestone Schedules								
A1 Approval of Preliminary Master Program, ICE, TTA, ELS & Temporay decking (3-Aug'14)								
A01_0010	Approval of Preliminary Master Program (3-Aug'14)	0		21-Oct-14 A		02-Aug-14		
A01_0020	Approval of Specified Plans (3-Aug'14)	0		01-Aug-14 A		01-Aug-14		
A01_0030	Approval of Independent Checking Engineer (3-Aug'14)	0		01-Aug-14 A		01-Aug-14		
A01_0040	Approval of the TTM Scheme by the Relevant Authorities (3-Aug'14)	0		27-Jun-14 A		27-Jun-14		
A01_0050	Approval for the design of ELS systems for cofferdams & temporary decking (3-Aug'14)	0		03-Mar-15 A		01-Aug-14		
A2 Approval Design of Mined Tunnel ESS; Hoarding phase/plan; QP, SAP, PMP, H&SP, EMP (2-Nov'14)								
A02_0010	Approval for the design of excavation support systems of the mined tunnel section (2-No	0		16-Jan-15 A		01-Nov-14		
A02_0020	Approval of all phasing plans & hoarding arrangements (2-Nov'14)	0		28-Oct-14 A		28-Oct-14		
A02_0030	Approval of all method statements for Part B works (2-Nov'14)	0		30-Oct-14 A		30-Oct-14		
A02_0040	Engineer's confirmation of satisfactory implementation of Quality Plan (2-Nov'14)	0		01-Nov-14 A		01-Nov-14		
A02_0050	Engineer's confirmation of satisfactory implementation of System Assurance Plan (2-Nov	0		01-Nov-14 A		01-Nov-14		
A02_0060	Engineer's confirmation of satisfactory implementation of Programming Management Sy:	0		01-Nov-14 A		01-Nov-14		
A02_0070	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (2-Nov'14	0		01-Nov-14 A		01-Nov-14		
A02_0080	Engineer's confirmation of satisfactory implementation of Environmental Management Pl	0		01-Nov-14 A		01-Nov-14		
A3 Satisfactory Implementation of Specified Plans (25-Jan'15)								
A03_0010	Engineer's confirmation of satisfactory implementation of System Assurance Plan (25-Jar	0		24-Jan-15 A		24-Jan-15		
A03_0020	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (25-Jan'1	0		24-Jan-15 A		24-Jan-15		
A03_0030	Engineer's confirmation of satisfactory implementation of Quality Plan (25-Jan'15)	0		24-Jan-15 A		24-Jan-15		
A03_0040	Engineer's confirmation of satisfactory implementation of Environmental Management Pl	0		24-Jan-15 A		24-Jan-15		
A4 Approval of excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15)								
A04_0010	Approval for method of excavation & support for mined tunnel section beneath tram trac	0		21-Apr-15 A		07-Jul-15		
A04_0020	Engineer's confirmation of satisfactory implementation of Programming Management Sy:	0		02-May-15 A		01-Jun-15		
A5 Approval of WAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15)								
A05_0010	Approval for method for demolition of WAC Diaphragm Wall (2-Aug'15)	0		21-Jul-15 A		23-Mar-16		
A05_0020	Engineer's confirmation of satisfactory implementation of Specified Plans (2-Aug'15)	0		30-Sep-15 A		30-Sep-15		
A6 Satisfactory Implementation of PMS (1-Nov'15)								
A06_0010	Engineer's confirmation of satisfactory implementation of Programming Management Sy:	0		30-Sep-15 A		30-Sep-15		
A7 Satisfactory Implementation of Specified Plans (31-Jan'16)								
A07_0010	Engineer's confirmation of satisfactory implementation of Specified Plans (31-Jan'16)	0		30-Jan-16 A		31-Mar-16		
A8 AIP for T&C of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)								
A08_0010	Engineer's confirmation of satisfactory implementation of Programming Management Sy:	0		03-Mar-16 A		30-Apr-16		
A08_0020	Approval in principle of all procedures for Testing & Commissioning of all Building Service	0		26-Sep-17		26-Sep-17	-212	0



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

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

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

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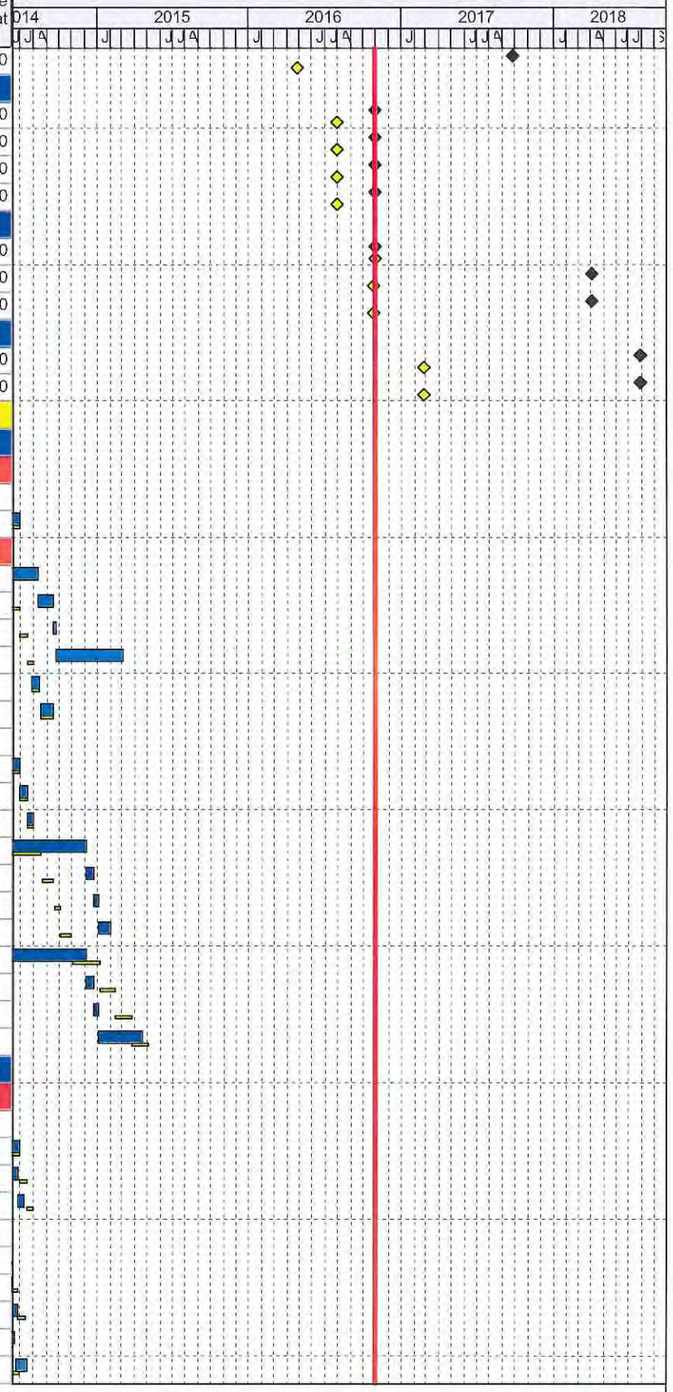
Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
A08_0030	Approval in principle of all acceptance procedures of all of the ABWF works (1-May'16)	0		26-Sep-17		26-Sep-17	-212	0
A9 Satisfactory Implementation of Specified Plans (31-Jul'16)								
A09_0010	Engineer's confirmation of satisfactory implementation of System Assurance Plan (31-Jul	0		31-Oct-16		31-Oct-16	119	0
A09_0020	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (31-Jul'16	0		31-Oct-16		31-Oct-16	119	0
A09_0030	Engineer's confirmation of satisfactory implementation of Quality Plan (31-Jul'16)	0		31-Oct-16		31-Oct-16	119	0
A09_0040	Engineer's confirmation of satisfactory implementation of Environmental Management Pl	0		31-Oct-16		31-Oct-16	119	0
A10 AIP Draft O&M manual & Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct'16)								
A10_0010	Engineer's confirmation of satisfactory implementation of Programming Management Sy	0		31-Oct-16		31-Oct-16	119	520
A10_0020	Approval in principle of draft Operating & Maintenance Manuals for the Whole Works (3(	0		03-Apr-18		03-Apr-18	-401	0
A10_0030	Approval in principle of draft As-built Drawings for the Whole Works (30-Oct'16)	0		03-Apr-18		03-Apr-18	-401	0
A11 Approval of O&M manual and As-built drawings for the Works (26-Feb'17)								
A11_0010	Approval of Operating & Maintenance Manual for Whole Works (26-Feb'17)	0		28-Jul-18		28-Jul-18	-517	0
A11_0020	Approval of As-built drawings for Whole Works (26-Feb'17)	0		28-Jul-18		28-Jul-18	-517	0
Cost Centre A: Preliminaries and General Items								
Design, ICE, Submission and Approval								
Design, IEC, TMLG Submission and Approval								
D.I.T_0010	TTMS - Submission to Members of TMLG for Approval, ref. ITT 6.2	4	14-Apr-14 A	17-Apr-14 A	14-Apr-14	17-Apr-14		
D.I.T_0020	TTMS - TMLG Meetings and Approval, Resubmission if required, RMO Applicataions	55	22-Apr-14 A	27-Jun-14 A	22-Apr-14	27-Jun-14		
Design, ICE, BD Submission and Approval								
D.I.T_0030	A1 - ELS & Temporary Decking - Design, ICE, Submission to BD for Approval	30	14-Apr-14 A	11-Aug-14 A	14-Apr-14	23-May-14		
D.I.T_0040	A1 - ELS & Temporary Decking - Review the submission	30	12-Aug-14 A	16-Sep-14 A	24-May-14	28-Jun-14		
D.I.T_0050	A1 - ELS & Temporary Decking - Preparation of re-submission (If Require)	14	17-Sep-14 A	23-Sep-14 A	30-Jun-14	16-Jul-14		
D.I.T_0060	A1 - ELS & Temporary Decking - BD Review, Resubmission if required, and Approval (If	14	24-Sep-14 A	03-Mar-15 A	17-Jul-14	01-Aug-14		
D.I.T_0070	A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE	17	29-Jul-14 A	16-Aug-14 A	29-Jul-14	16-Aug-14		
D.I.T_0080	A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE, Submission & Ap	24	18-Aug-14 A	15-Sep-14 A	18-Aug-14	15-Sep-14		
D.I.T_0090	Independent Checking Engineer - Preparation & Submission for Approval	30	14-Apr-14 A	23-May-14 A	14-Apr-14	23-May-14		
D.I.T_0100	Independent Checking Engineer - Review the submission	30	24-May-14 A	28-Jun-14 A	24-May-14	28-Jun-14		
D.I.T_0110	Independent Checking Engineer - Preparation of re-submission (If Require)	14	30-Jun-14 A	16-Jul-14 A	30-Jun-14	16-Jul-14		
D.I.T_0120	Independent Checking Engineer - Resubmission if required, & Approval (If Require)	14	17-Jul-14 A	01-Aug-14 A	17-Jul-14	01-Aug-14		
D.I.T_0130	A2 - Excavation support system for the mined tunnel section design - Prepare, ICE and s	104	14-Apr-14 A	05-Dec-14 A	14-Apr-14	20-Aug-14		
D.I.T_0140	A2 - Excavation support system for the mined tunnel section design - Review submission	24	06-Dec-14 A	23-Dec-14 A	14-Apr-14	16-May-14		
D.I.T_0150	A2 - Excavation support system for the mined tunnel section design - Address comments	12	24-Dec-14 A	03-Jan-15 A	29-Jul-14	11-Aug-14		
D.I.T_0160	A2 - Excavation support system for the mined tunnel section design - Review & Approval	24	05-Jan-15 A	01-Feb-15 A	12-Aug-14	08-Sep-14		
D.I.T_0170	A4 - Excavation method under tram track and TW design - Prepare, ICE and submissio	55	14-Apr-14 A	05-Dec-14 A	16-Jul-15	17-Sep-15		
D.I.T_0180	A4 - Excavation method under tram track and TW design - Review submission	30	06-Dec-14 A	23-Dec-14 A	18-Sep-15	26-Oct-15		
D.I.T_0190	A4 - Excavation method under tram track and TW design - Address comments, ICE & R	30	24-Dec-14 A	03-Jan-15 A	27-Oct-15	30-Nov-15		
D.I.T_0200	A4 - Excavation method under tram track and TW design - Review & Approval (if require	30	05-Jan-15 A	21-Apr-15 A	01-Dec-15	07-Jan-16		
Contractor Submission and Approval								
Programming, Specified Plans and Hoarding Plan								
P.SP.H_0010	Submission schedule - Preparation & submission	30	14-Apr-14 A	14-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0020	Submission schedule - Review & Approval	30	15-May-14 A	30-Jun-14 A	11-May-15	15-Jun-15		
P.SP.H_0030	Submission schedule - Preparation for Re-submission (If Require)	14	13-Jun-14 A	26-Jun-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0040	Submission schedule - Review and Approval (If Require)	14	27-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0050	Initial Three Month Rolling Program - Preparation & submission	14	14-Apr-14 A	28-Apr-14 A	31-Mar-15	20-Apr-15		
P.SP.H_0060	Initial Three Month Rolling Program - Review & Approval	30	29-Apr-14 A	28-May-14 A	21-Apr-15	27-May-15		
P.SP.H_0070	Initial Three Month Rolling Program - Preparation for Re-submission (If Require)	14	29-May-14 A	12-Jun-14 A	28-May-15	12-Jun-15		
P.SP.H_0080	Initial Three Month Rolling Program - Review and Approval (If Require)	14	13-Jun-14 A	26-Jun-14 A	13-Jun-15	30-Jun-15		
P.SP.H_0090	Preliminary Master Program - Preparation & submission	47	14-Apr-14 A	20-Jun-14 A	31-Mar-15	30-May-15		
P.SP.H_0100	Preliminary Master Program - Review & Approval	14	21-Jun-14 A	19-Jul-14 A	01-Jun-15	16-Jun-15		



Actual Level of Effort
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Critical Remaining ...
Baseline Milestone
Milestone

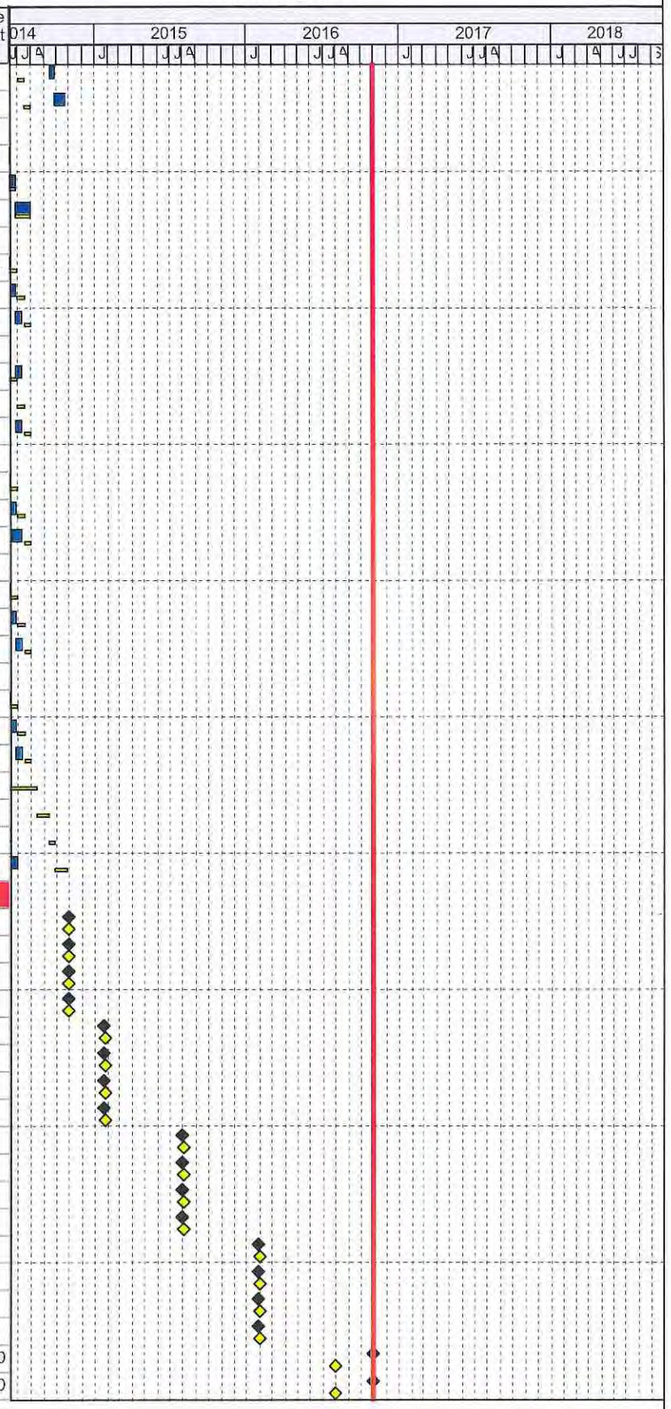
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
P.SP.H_0110	Preliminary Master Program - Preparation for Re-submission (If Require)	14	16-Sep-14 A	30-Sep-14 A	17-Jun-15	04-Jul-15		
P.SP.H_0120	Preliminary Master Program - Review and Approval (If Require)	14	30-Sep-14 A	22-Oct-14 A	06-Jul-15	21-Jul-15		
P.SP.H_0130	Specified Plans (QP, SAP, PMS, H&SP, EP) - Preparation & submission	30	14-Apr-14 A	23-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0140	Specified Plans (QP, SAP, PMS, H&SP, EP) - Review & Approval	14	24-May-14 A	10-Jun-14 A	11-May-15	27-May-15		
P.SP.H_0150	Specified Plans (QP, SAP, PMS, H&SP, EP) - Preparation for Re-submission (If Require)	14	11-Jun-14 A	26-Jun-14 A	28-May-15	12-Jun-15		
P.SP.H_0160	Specified Plans (QP, SAP, PMS, H&SP, EP) - Review and Approval (If Require)	30	24-Jun-14 A	01-Aug-14 A	13-Jun-15	20-Jul-15		
P.SP.H_0170	Environmental management plan - Preparation & submission	30	14-Apr-14 A	14-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0180	Environmental management plan - Review & Approval	30	15-May-14 A	12-Jun-14 A	11-May-15	15-Jun-15		
P.SP.H_0190	Environmental management plan - Preparation for Re-submission (If Require)	14	13-Jun-14 A	26-Jun-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0200	Environmental management plan - Review and Approval (If Require)	14	27-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0210	Appoint Environmental team- submit for engineer approval	30	14-Apr-14 A	23-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0220	Appoint Environmental team - Review & Approval	30	27-Jun-14 A	11-Jul-14 A	11-May-15	15-Jun-15		
P.SP.H_0230	Appoint Environmental team - Preparation for Re-submission (If Require)	14	14-Apr-14 A	14-May-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0240	Appoint Environmental team - Review and Approval (If Require)	14	27-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0250	Quality Plan - Preparation & submission	30	14-Apr-14 A	14-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0260	Quality Plan - Review & Approval	30	15-May-14 A	12-Jun-14 A	11-May-15	15-Jun-15		
P.SP.H_0270	Quality Plan - Preparation for Re-submission (If Require)	14	13-Jun-14 A	26-Jun-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0280	Quality Plan - Review and Approval (If Require)	14	17-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0290	Health and Safety Plan - Preparation & submission	30	14-Apr-14 A	14-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0300	Health and Safety Plan - Review & Approval	30	15-May-14 A	12-Jun-14 A	11-May-15	15-Jun-15		
P.SP.H_0310	Health and Safety Plan - Preparation for Re-submission (If Require)	14	13-Jun-14 A	26-Jun-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0320	Health and Safety Plan - Review and Approval (If Require)	14	27-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0330	System Assurance Plan - Preparation & submission	30	14-Apr-14 A	14-May-14 A	31-Mar-15	09-May-15		
P.SP.H_0340	System Assurance Plan - Review & Approval	30	15-May-14 A	12-Jun-14 A	11-May-15	15-Jun-15		
P.SP.H_0350	System Assurance Plan - Preparation for Re-submission (If Require)	14	13-Jun-14 A	26-Jun-14 A	16-Jun-15	03-Jul-15		
P.SP.H_0360	System Assurance Plan - Review and Approval (If Require)	14	27-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
P.SP.H_0370	A2 Hoarding phase - Preparation & submission	100	14-Apr-14 A	30-Apr-14 A	31-Mar-15	03-Aug-15		
P.SP.H_0380	A2 Hoarding phase - Review & Approval	24	02-May-14 A	30-May-14 A	04-Aug-15	31-Aug-15		
P.SP.H_0390	A2 Hoarding phase - Preparation for Re-submission (If Require)	12	31-May-14 A	14-Jun-14 A	01-Sep-15	14-Sep-15		
P.SP.H_0400	A2 Hoarding phase - Review and Approval (If Require)	24	16-Jun-14 A	28-Jun-14 A	15-Sep-15	14-Oct-15		
Implemantation of Specified Plans								
SP.A02_0010	A2 Satisfactory Implementation of Quality Plan	0		01-Nov-14 A		20-Jul-15		
SP.A03_0010	A3 Satisfactory Implementation of System Assurance Plan	0		01-Nov-14 A		20-Jul-15		
SP.A03_0020	A3 Satisfactory Implementation of Health and Safety Plan	0		01-Nov-14 A		20-Jul-15		
SP.A03_0030	A3 Satisfactory Implementation of Environmental Management Plan	0		01-Nov-14 A		20-Jul-15		
SP.A03_0040	A3 Satisfactory Implementation of Quality Plan	0		24-Jan-15 A		20-Jul-15		
SP.A03_0050	A3 Satisfactory Implementation of System Assurance Plan	0		24-Jan-15 A		20-Jul-15		
SP.A03_0060	A3 Satisfactory Implementation of Health and Safety Plan	0		24-Jan-15 A		20-Jul-15		
SP.A03_0070	A3 Satisfactory Implementation of Environmental Management Plan	0		24-Jan-15 A		20-Jul-15		
SP.A05_0010	A5 Satisfactory Implementation of Quality Plan	0		01-Aug-15 A		01-Aug-15		
SP.A05_0020	A5 Satisfactory Implementation of System Assurance Plan	0		01-Aug-15 A		01-Aug-15		
SP.A05_0030	A5 Satisfactory Implementation of Health and Safety Plan	0		01-Aug-15 A		01-Aug-15		
SP.A05_0040	A5 Satisfactory Implementation of Environmental Management Plan	0		01-Aug-15 A		01-Aug-15		
SP.A07_0010	A7 Satisfactory Implementation of Quality Plan	0		30-Jan-16 A		29-Feb-16		
SP.A07_0020	A7 Satisfactory Implementation of System Assurance Plan	0		30-Jan-16 A		29-Feb-16		
SP.A07_0030	A7 Satisfactory Implementation of Health and Safety Plan	0		30-Jan-16 A		29-Feb-16		
SP.A07_0040	A7 Satisfactory Implementation of Environmental Management Plan	0		30-Jan-16 A		29-Feb-16		
SP.A09_0010	A9 Satisfactory Implementation of Quality Plan	0		31-Oct-16*		31-Oct-16	-92	0
SP.A09_0020	A9 Satisfactory Implementation of System Assurance Plan	0		31-Oct-16*		31-Oct-16	-92	0



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

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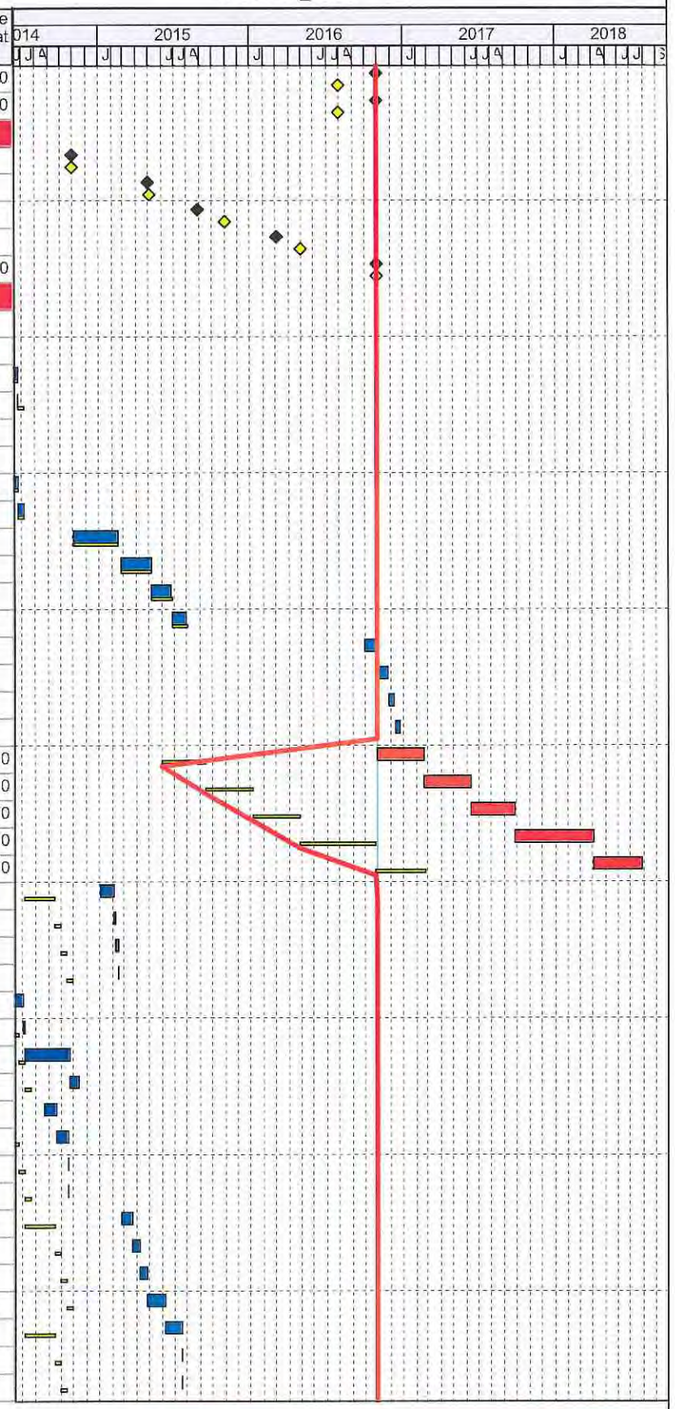
Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
SP.A09_0030	A9 Satisfactory Implementation of Health and Safety Plan	0		31-Oct-16*		31-Oct-16	-92	0
SP.A09_0040	A9 Satisfactory Implementation of Environmental Management Plan	0		31-Oct-16*		31-Oct-16	-92	0
Implementation of Programming Management System								
PMS.A02_0010	A2 Satisfactory Implementation of Programming Management System	0		01-Nov-14 A		21-Jul-15		
PMS.A04_0010	A4 Satisfactory Implementation of Programming Management System	0		02-May-15 A		01-Jun-15		
PMS.A06_0010	A6 Satisfactory Implementation of Programming Management System	0		28-Aug-15 A		31-Oct-15		
PMS.A08_0010	A8 Satisfactory Implementation of Programming Management System	0		03-Mar-16 A		30-Apr-16		
PMS.A10_0010	A10 Satisfactory Implementation of Programming Management System	0		31-Oct-16*		31-Oct-16	-1	0
Other Submissions and O&M Manual								
OS.OM_0010	Hoarding Installation Method Statement - Preparation & Submission	30	14-Apr-14 A	23-May-14 A	31-Mar-15	09-May-15		
OS.OM_0020	Hoarding Installation Method Statement - Review & Approval	12	24-May-14 A	07-Jun-14 A	11-May-15	23-May-15		
OS.OM_0030	Hoarding Installation Method Statement - Preparation for Re-submission (if required)	12	09-Jun-14 A	21-Jun-14 A	26-May-15	08-Jun-15		
OS.OM_0040	Hoarding Installation Method Statement - Re-submission (if required) & Approval	12	23-Jun-14 A	23-Jun-14 A	09-Jun-15	23-Jun-15		
OS.OM_0050	Site Investigation Works Method Statement - Preparation & Submission	30	14-Apr-14 A	23-May-14 A	31-Mar-15	09-May-15		
OS.OM_0060	Site Investigation Works Method Statement - Review & Approval	12	24-May-14 A	07-Jun-14 A	11-May-15	23-May-15		
OS.OM_0070	Site Investigation Works Method Statement - Preparation for Re-submission (if required	12	09-Jun-14 A	21-Jun-14 A	26-May-15	08-Jun-15		
OS.OM_0080	Site Investigation Works Method Statement - Re-submission (if required) & Approval	12	23-Jun-14 A	07-Jul-14 A	09-Jun-15	23-Jun-15		
OS.OM_0090	WAC D-wall demolition Design- ICE, Preparation for design submission	90	03-Nov-14 A	18-Feb-15 A	31-Jul-15	16-Nov-15		
OS.OM_0100	WAC D-wall demolition- Review & Approval	60	23-Feb-15 A	08-May-15 A	17-Nov-15	28-Jan-16		
OS.OM_0110	WAC D-wall demolition- Preparation for re-submission (If require)	40	09-May-15 A	26-Jun-15 A	29-Jan-16	18-Mar-16		
OS.OM_0120	WAC D-wall demolition- Review & Approval (If require)	30	27-Jun-15 A	01-Aug-15 A	19-Mar-16	27-Apr-16		
OS.OM_0121	H15 D-wall demolition Design- ICE, Preparation for design submission	24	30-Sep-16 A	29-Oct-16 A	30-Sep-16	29-Oct-16		
OS.OM_0122	H15 D-wall demolition- Review & Approval	24	31-Oct-16 A	26-Nov-16 A	31-Oct-16	26-Nov-16		
OS.OM_0123	H15 D-wall demolition- Preparation for re-submission (If require)	12	28-Nov-16 A	10-Dec-16 A	28-Nov-16	10-Dec-16		
OS.OM_0124	H15 D-wall demolition- Review & Approval (If require)	12	12-Dec-16 A	24-Dec-16 A	12-Dec-16	24-Dec-16		
OS.OM_0130	A8 AIP procedures for T&C of BS and ABWF works (1st Batch)	90	31-Oct-16	18-Feb-17	31-Oct-16	18-Feb-17	-419	0
OS.OM_0140	A8 AIP procedures for T&C of BS and ABWF works (2nd Batch)	90	20-Feb-17	12-Jun-17	20-Feb-17	12-Jun-17	-419	0
OS.OM_0150	A8 AIP procedures for T&C of BS and ABWF works (Remaining)	90	13-Jun-17	26-Sep-17	13-Jun-17	26-Sep-17	-419	0
OS.OM_0160	A10 AIP of Draft O&M manual and Draft As-built Drawings	150	27-Sep-17	03-Apr-18	27-Sep-17	03-Apr-18	-419	0
OS.OM_0170	A11 Approval of O&M manual and As-built drawings for the Works	95	04-Apr-18	28-Jul-18	04-Apr-18	28-Jul-18	-419	0
OS.OM_0180	RC Works- Preparation of Method Statement- Preparation	60	06-Jan-15 A	06-Feb-15 A	31-Mar-15	15-Jun-15		
OS.OM_0190	RC Works - Preparation of Method Statement- Submission & Approval	12	06-Feb-15 A	10-Feb-15 A	03-Sep-15	16-Sep-15		
OS.OM_0200	RC Works - Preparation for Re-submission (if required)	12	10-Feb-15 A	16-Feb-15 A	17-Sep-15	02-Oct-15		
OS.OM_0210	RC Works - Re-submission (if required) & Approval	12	16-Feb-15 A	16-Feb-15 A	02-Jul-15	15-Jul-15		
OS.OM_0220	Sheet pile installation- Preparation of Method Statement- Preparation	42	03-Jun-14 A	03-Jul-14 A	31-Mar-15	23-May-15		
OS.OM_0230	Sheet pile installation- Preparation of Method Statement- Submission & Approval	12	03-Jul-14 A	08-Jul-14 A	26-May-15	08-Jun-15		
OS.OM_0240	Sheet pile installation - Preparation for Re-submission (if required)	12	08-Jul-14 A	23-Oct-14 A	09-Jun-15	23-Jun-15		
OS.OM_0250	Sheet pile installation - Re-submission (if required) & Approval	12	23-Oct-14 A	14-Nov-14 A	24-Jun-15	08-Jul-15		
OS.OM_0260	Excavation works- Preparation of Method Statement- Preparation	42	22-Aug-14 A	22-Sep-14 A	31-Mar-15	23-May-15		
OS.OM_0270	Excavation works- Preparation of Method Statement- Submission & Approval	12	22-Sep-14 A	21-Oct-14 A	26-May-15	08-Jun-15		
OS.OM_0280	Excavation works- Preparation for Re-submission (if required)	12	21-Oct-14 A	21-Oct-14 A	09-Jun-15	23-Jun-15		
OS.OM_0290	Excavation works- Re-submission (if required) & Approval	12	21-Oct-14 A	21-Oct-14 A	24-Jun-15	08-Jul-15		
OS.OM_0300	Work below tram track Method Statement - Preparation	60	23-Feb-15 A	23-Mar-15 A	24-Jun-15	02-Sep-15		
OS.OM_0310	Work below tram track Method Statement - Submission & Approval	12	23-Mar-15 A	09-Apr-15 A	03-Sep-15	16-Sep-15		
OS.OM_0320	Work below tram track Method Statement - Preparation for Re-submission (if required)	12	09-Apr-15 A	27-Apr-15 A	11-Apr-15	24-Apr-15		
OS.OM_0330	Work below tram track Method Statement - Re-submission (if required) & Approval	12	27-Apr-15 A	10-Jun-15 A	30-Jun-15	14-Jul-15		
OS.OM_0340	H15 & WAC Break Through Method Statement - Preparation	48	11-Jun-15 A	20-Jul-15 A	30-Jun-15	25-Aug-15		
OS.OM_0350	H15 & WAC Break Through Method Statement - Submission & Approval	12	20-Jul-15 A	21-Jul-15 A	05-Aug-15	18-Aug-15		
OS.OM_0360	H15 & WAC Break Through Method Statement - Preparation for Re-submission (if requ	12	21-Jul-15 A	21-Jul-15 A	19-Aug-15	01-Sep-15		



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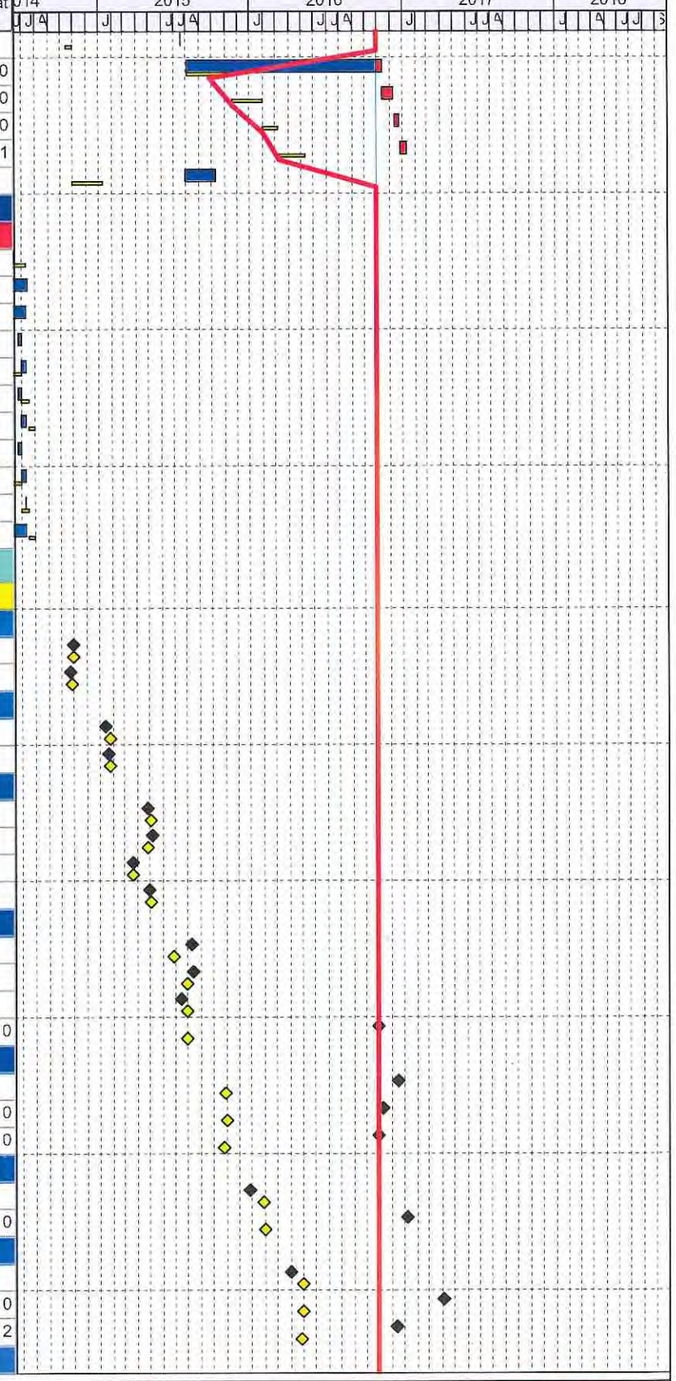
Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
OS.OM_0370	H15 & WAC Break Through Method Statement - Re-submission (if required) & Approva	12	21-Jul-15 A	21-Jul-15 A	02-Sep-15	15-Sep-15		
OS.OM_0380	BD for consent of H15 break throughs works - Preparation	24	03-Aug-15 A	12-Nov-16	24-Sep-16	24-Oct-16	-189	0
OS.OM_0390	BD for consent of H15 break throughs works - Submission & Approval	24	14-Nov-16	10-Dec-16	14-Nov-16	10-Dec-16	-189	0
OS.OM_0400	BD for consent of H15 break throughs works - Preparation for Re-submission (if require	12	12-Dec-16	24-Dec-16	12-Dec-16	24-Dec-16	-189	0
OS.OM_0410	BD for consent of H15 break throughs works - Re-submission (if required) & Approval	12	28-Dec-16	11-Jan-17	28-Dec-16	11-Jan-17	-189	71
OS.OM_0420	Submit and obtain AIP for Method Statement, EDOC Draft, Permanent Materials	60	31-Jul-15 A	10-Oct-15 A	31-Jul-15	10-Oct-15		
Mobilization and Other Preliminaries								
Permit Applications								
PA_0010	XP Excavtion Permit Application and Permit	70	14-Apr-14 A	10-Jun-14 A	31-Mar-15	27-Jun-15		
PA_0020	TRA Tree Removal Application and Permit	6	14-Apr-14 A	15-Jul-14 A	31-Mar-15	10-Apr-15		
PA_0030	Liason with all utility service providers on diversions	42	14-Apr-14 A	11-Jul-14 A	31-Mar-15	23-May-15		
PA_0040	Baseline noise monitoring report - Preparation & submission to Engineer and EPD	30	23-Jun-14 A	28-Jun-14 A	31-Mar-15	09-May-15		
PA_0050	Baseline noise monitoring report - Review & Approval	30	30-Jun-14 A	09-Jul-14 A	11-May-15	15-Jun-15		
PA_0060	Baseline noise monitoring report - Preparation for Re-submission (If Require)	14	23-Jun-14 A	28-Jun-14 A	16-Jun-15	03-Jul-15		
PA_0070	Baseline noise monitoring report - Review and Approval (If Require)	14	30-Jun-14 A	09-Jul-14 A	04-Jul-15	20-Jul-15		
PA_0080	Baseline air monitoring report - Preparation & submission to Engineer and EPD	30	23-Jun-14 A	28-Jun-14 A	31-Mar-15	09-May-15		
PA_0090	Baseline air monitoring report - Review & Approval	30	30-Jun-14 A	09-Jul-14 A	11-May-15	15-Jun-15		
PA_0100	Baseline air monitoring report - Preparation for Re-submission (If Require)	14	10-Jul-14 A	10-Jul-14 A	16-Jun-15	03-Jul-15		
PA_0110	Baseline air monitoring report - Review and Approval (If Require)	14	10-Jun-14 A	11-Jul-14 A	04-Jul-15	20-Jul-15		
B : Civil, Structural and ABWF Works for the New Subway (Part A Works)								
Cost Centre B- Milestone Schedules								
B1 Excavate to +2.5 of SBC & Children's Play Area Cofferdam completed (2-Nov'14)								
MSB01_01	Southern Basket Ball Court: excavate to +2.5mPD (2-Nov'14)	0		01-Nov-14 A		19-Oct-15		
MSB01_02	Children's Play Area - Cofferdam construction is completed (2-Nov'14)	0		25-Oct-14 A		10-Jul-15		
B2 SBC Excavation complete & Children's Play Area Excavation to -1.3mPD (25-Jan'15)								
MSB02_01	Southern Basket Ball Court: Excavation is satisfactorily completed (25-Jan'15)	0		16-Jan-15 A		12-Jan-16		
MSB02_02	Children's Play Area: Excavation has reached -1.3mPD (25-Jan'15)	0		24-Jan-15 A		12-Jan-16		
B3 SBC RC Roof, JnR NFP & EBC 67% cofferdam, JnR WBC UU div complete (3-May'15)								
MSB03_01	Southern Basket Ball Court: Roof slab construction has been satisfactorily completed (3-	0		28-Apr-15 A		31-Mar-15		
MSB03_02	Johnston Road North Footpath and East-bound Carriageway: 67% of cofferdam installa	0		09-May-15 A		23-May-15		
MSB03_03	Johnston Road West-bound Carriageway - All utility diversions, where required, satisfact	0		21-Mar-15 A		30-Jun-15		
MSB03_04	10% completed of tram track support (3-May'15)	0		29-Apr-15 A		29-May-15		
B4 SBC return, NBC Site entry, CPA base, JnR NFP & EBC Cofferdam & decks complete (2-Aug'15)								
MSB04_01	Southern Basket Ball Court: Playing surface has been returned to LCSD for use (2-Aug'	0		11-Aug-15 A		01-Aug-15		
MSB04_02	Northern Basket Ball Court: Site entry onto Hennessy Road has been formed (2-Aug'15	0		15-Aug-15 A		30-Sep-15		
MSB04_03	Children's Play Area: RC construction of the base slab, except at mucking out point, com	0		17-Jul-15 A		30-Sep-15		
MSB04_04	JnR N-Footpath & E-Bound Carriageway: Cofferdam construction complete & all temp ti	0		31-Oct-16		31-Oct-16	119	0
B5 NBC cofferdam, CPA RC & vent shaft 1.2m above GL, Tram Tracks Excavation to +0.0mPD (1-Nov'15)								
MSB05_01	Northern Basket Ball Court: Satisfactorily complete construction of the cofferdam (1-Nov	0		18-Dec-16 A		29-Feb-16		
MSB05_02	Children's Play Area: RC construction complete include above ground vent shaft structur	0		09-Nov-16		09-Nov-16	109	0
MSB05_03	Tram Tracks - Excavation to +0.0 mPD is satisfactorily completed (1-Nov'15)	0		31-Oct-16		31-Oct-16	119	10
B6 NBC Excavation to formation, JnR Excavation complete (31-Jan'16)								
MSB06_01	Northern basket Ball Court - Excavation to final formation has been satisfactorily complet	0		28-Dec-15 A		31-Mar-16		
MSB06_02	Johnston Road All Carriageways, Footpaths & Tram Tracks: Excavation is completed (3'	0		07-Jan-17		07-Jan-17	50	0
B7 NBC RC roof, JnR CW & FP & TT RC construction exp temp opening, CPA RC complete (1-May'16)								
MSB07_01	Northern Basket Ball Court: RC construction of the roof slab has been completed (1-Ma'	0		01-Apr-16 A		25-May-16		
MSB07_02	JnR Carriageways, Footpaths & Tram Tracks: RC construction, except at temporary ope	0		05-Apr-17		05-Apr-17	-38	0
MSB07_03	Children's Play Area: RC Construction of above ground ventilation shaft structures is con	0		14-Dec-16		14-Dec-16	74	112
B8 ABWF Degree1 achieved, NBC All reinstatement, Opening through H15 D-wall complete (31-Jul'16)								



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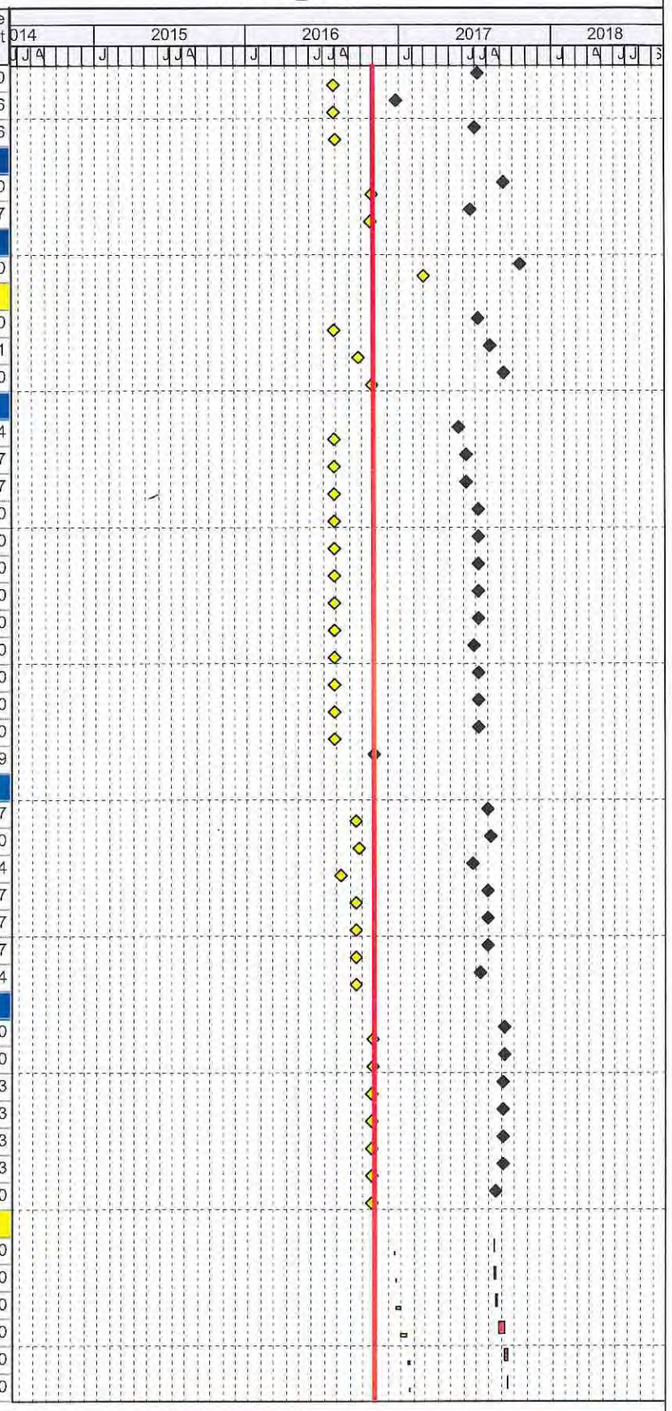
MSB08_01	ABWF to Degree 1 has been achieved for works in this cost centre (31-Jul'16)	0		06-Jul-17		06-Jul-17	-130	0
MSB08_02	Northern Basket Ball Court - All re-surfacing works & playing surface reinstatement comp	0		23-Dec-16		23-Dec-16	66	196
MSB08_03	H15 Interface: The opening through H15 diaphragm wall has been formed (31-Jul'16)	0		30-Jun-17		30-Jun-17	-124	6
B9 ABWF Degree3 achieved, All road reinstatement in JnR & Hennessy Rd complete (30-Oct'16)								
MSB09_01	ABWF to Degree 3 has been achieved for works in this cost centre (30-Oct'16)	0		07-Sep-17		07-Sep-17	-192	0
MSB09_02	All road reinstatement works in Johnston Road and Hennessy Road have been satisfact	0		21-Jun-17		21-Jun-17	-115	77
B10 All works in Cost Centre B satisfactorily completed (26-Feb'17)								
MSB10_01	All works in this cost centre have been satisfactorily completed (26-Feb'17)	0		17-Oct-17		17-Oct-17	-233	70
Degrees of completion for ABWF Works								
ABWF.D1	ABWF Works - Degree 1	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D2	ABWF Works - Degree 2	0		07-Aug-17		07-Aug-17	-161	31
ABWF.D3	ABWF Works - Degree 3	0		07-Sep-17		07-Sep-17	-192	0
ABWF Works - Degree 1								
ABWF.D1_1.010	1.1- Structure and building complete, clean, dry and weather proof	0		23-May-17		23-May-17	-86	44
ABWF.D1_1.020	1.2- Blockwalls and partition walls complete, except on plant access route	0		10-Jun-17		10-Jun-17	-103	27
ABWF.D1_1.030	1.3- Plastering, undercoat painting, floor screeding including plinths & upstands complete	0		10-Jun-17		10-Jun-17	-103	27
ABWF.D1_1.040	1.4- Equipment delivery routes & access openings available for Designated Contractors	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.050	1.5- Cast-in items & subframe installed; niches, recesses and box outs formed; cable tro	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.060	1.6- Structure as-built survey accepted	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.070	1.7- Structural & blockwork E&M openings formed & survey complete	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.080	1.8- Movement joints & stitch strips complete	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.090	1.9- Drainage system & discharge connections complete with temporary pumps operatio	0		26-Jun-17		26-Jun-17	-120	10
ABWF.D1_1.100	1.10- Escalator zones & pits complete; survey reference lines accepted	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.110	1.11- Earthing mat, earthing rods & earthing pits complete & test results accepted	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.120	1.12- Underground pipework complete including manholes, ductworks & drawpits	0		06-Jul-17		06-Jul-17	-130	0
ABWF.D1_1.130	1.13- Civil & building provisions for designated & interfacing contractors complete	0		31-Oct-16		31-Oct-16	119	249
ABWF Works - Degree 2								
ABWF.D2_2.010	2.1- Permanent door frames installed with temporary doors and locks	0		31-Jul-17		31-Jul-17	-154	7
ABWF.D2_2.020	2.2- Floor finishes & wall tilling in plant rooms for Designated Contractors complete	0		07-Aug-17		07-Aug-17	-161	0
ABWF.D2_2.030	2.3- Glazing & Balustrade support installed	0		24-Jun-17		24-Jun-17	-117	44
ABWF.D2_2.040	2.4- Metal staircases, cat-ladders & catwalks complete	0		31-Jul-17		31-Jul-17	-154	7
ABWF.D2_2.050	2.5- External louvers installed	0		31-Jul-17		31-Jul-17	-154	7
ABWF.D2_2.060	2.6- Framework for final finishes installed	0		31-Jul-17		31-Jul-17	-154	7
ABWF.D2_2.070	2.7- Water tightness testing to water tanks passed	0		13-Jul-17		13-Jul-17	-137	24
ABWF Works - Degree 3								
ABWF.D3_3.010	3.1- All finishes complete including permanent doors, ironmongery	0		07-Sep-17		07-Sep-17	-192	0
ABWF.D3_3.020	3.2- Balustrade installed	0		07-Sep-17		07-Sep-17	-192	0
ABWF.D3_3.030	3.3- Signage hangers & supports installed	0		04-Sep-17		04-Sep-17	-189	3
ABWF.D3_3.040	3.4- Roller shutters, fire shutters & smoke barriers installed	0		04-Sep-17		04-Sep-17	-189	3
ABWF.D3_3.050	3.5- Acoustic treatment applied	0		04-Sep-17		04-Sep-17	-189	3
ABWF.D3_3.060	3.6- Louvres & grilles installed	0		04-Sep-17		04-Sep-17	-189	3
ABWF.D3_3.070	3.7- All openings & Penetrations sealed	0		17-Aug-17		17-Aug-17	-172	20
Southorn Playground Reprovision works								
RW_0010	LCSD handover Northern Basket Ball Court 1	1	12-Aug-17	12-Aug-17	12-Aug-17	12-Aug-17	-190	0
RW_0020	Fence off the site	2	14-Aug-17	15-Aug-17	14-Aug-17	15-Aug-17	-190	0
RW_0030	Expose the surface	6	16-Aug-17	22-Aug-17	16-Aug-17	22-Aug-17	-190	0
RW_0040	Resurfacing works	14	23-Aug-17	07-Sep-17	23-Aug-17	07-Sep-17	-190	0
RW_0050	Hand over to LCSD, additional remedial if require	5	08-Sep-17	13-Sep-17	08-Sep-17	13-Sep-17	-190	0
RW_0060	LCSD handover Southern Basket Ball Court 2	1	14-Sep-17	14-Sep-17	14-Sep-17	14-Sep-17	-190	0



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

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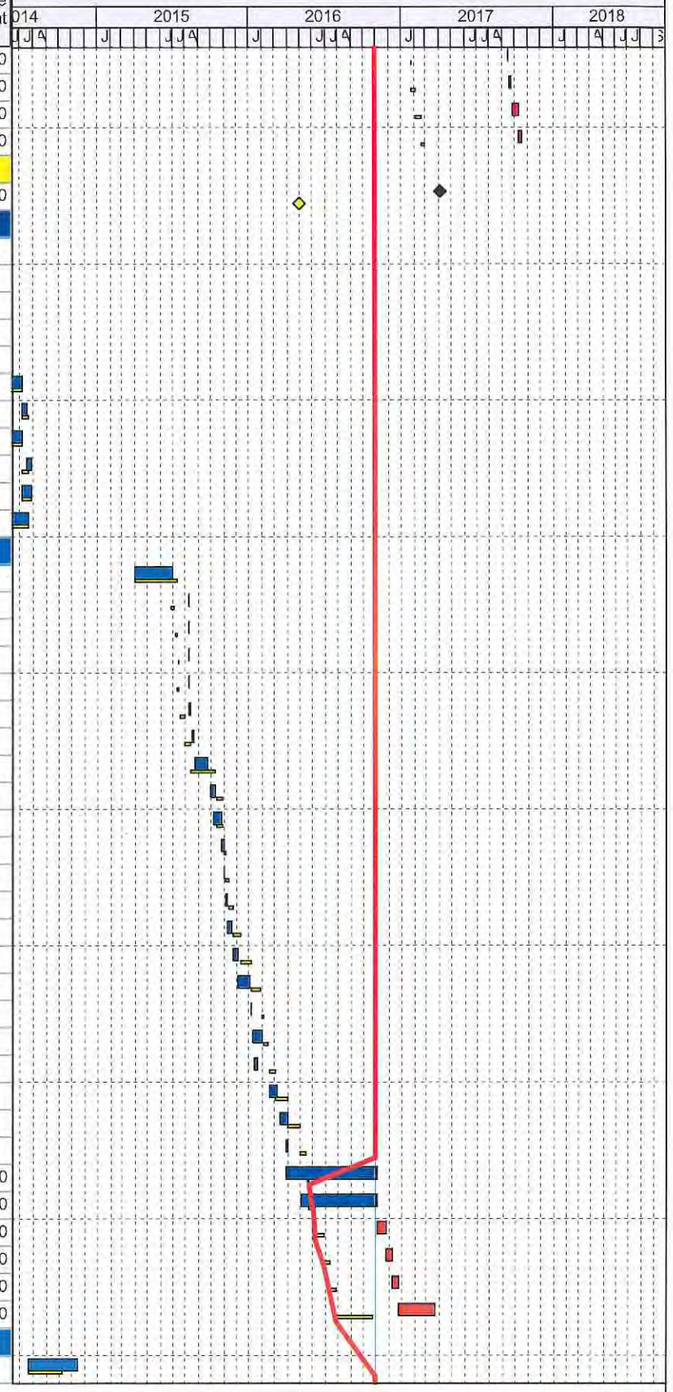
Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
RW_0070	Fence off the site	2	15-Sep-17	16-Sep-17	15-Sep-17	16-Sep-17	-190	0
RW_0080	Expose the surface	6	18-Sep-17	23-Sep-17	18-Sep-17	23-Sep-17	-190	0
RW_0090	Resurfacing works	13	25-Sep-17	11-Oct-17	25-Sep-17	11-Oct-17	-190	0
RW_0100	Hand over to LCSD, additional remedial if require	5	12-Oct-17	17-Oct-17	12-Oct-17	17-Oct-17	-190	0
Cost Centre B: Part A Works, Civil and Structural Works for the New Subway								
B.RC_Comp	RC Structure completed for the new subway	0		05-Apr-17		05-Apr-17	-317	0
Site Preliminary Works								
SPW_0010	LCSD handover SBC & Play's Area	3	14-Apr-14 A	16-Apr-14 A	31-Mar-15	02-Apr-15		
SPW_0020	Fence off the Site area for SBC & Play's Area	3	17-Apr-14 A	23-Apr-14 A	08-Apr-15	10-Apr-15		
SPW_0030	Employ security guard & security booth delivery	3	24-Apr-14 A	26-Apr-14 A	11-Apr-15	14-Apr-15		
SPW_0040	Removal of existing furniture for SBC & Play's Area as require	6	28-Apr-14 A	05-May-14 A	15-Apr-15	21-Apr-15		
SPW_0050	Trial trenches and expose existing UU service in SBC & Play's area	40	14-Apr-14 A	05-Jun-14 A	31-Mar-15	21-May-15		
SPW_0060	Setting up site office & misc.	50	07-May-14 A	05-Jul-14 A	22-Apr-15	22-Jun-15		
SPW_0070	Form site access for vehicle	12	07-Jul-14 A	19-Jul-14 A	23-Jun-15	07-Jul-15		
SPW_0080	Diversion of existing utilities & misc. works if require for SBC & Play's Area	24	09-Jun-14 A	07-Jul-14 A	26-May-15	23-Jun-15		
SPW_0090	Erect hoarding for SBC	12	16-Jul-14 A	29-Jul-14 A	24-Jun-15	08-Jul-15		
SPW_0100	Ground/ Site Investigation in SBC & Play's Area	18	08-Jul-14 A	28-Jul-14 A	24-Jun-15	15-Jul-15		
SPW_0110	Transplant and tree removal	72	24-Apr-14 A	21-Jul-14 A	11-Apr-15	08-Jul-15		
Northern Basket Ball Court								
NBC_0010	Liaison with relevance parties for TTM	80	02-Apr-15 A	02-Jul-15 A	30-Jun-15	03-Oct-15		
NBC_0020	LCSD handover Northern Basket Ball Court for LTS construction works	6	11-Aug-15 A	11-Aug-15 A	01-Aug-15	08-Aug-15		
NBC_0030	Preparation works for NBC site access	4	11-Aug-15 A	11-Aug-15 A	08-Aug-15	13-Aug-15		
NBC_0040	Implementation of TTM	3	11-Aug-15 A	11-Aug-15 A	08-Aug-15	12-Aug-15		
NBC_0050	Relocation of metal fence access door for public	6	11-Aug-15 A	11-Aug-15 A	13-Aug-15	20-Aug-15		
NBC_0060	Hoarding installation, installation of site entry on Hennessy Road	5	11-Aug-15 A	15-Aug-15 A	11-Aug-15	15-Aug-15		
NBC_0070	Expose UU & trial trench for sheet piles works	12	17-Aug-15 A	20-Aug-15 A	14-Sep-15	26-Sep-15		
NBC_0080	Phase 3 ELS- Sheet Piles Installation [104 no. x 24m]	48	24-Aug-15 A	23-Sep-15 A	29-Sep-15	25-Nov-15		
NBC_0090	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	15	30-Sep-15 A	13-Oct-15 A	30-Sep-15	17-Oct-15		
NBC_0100	Phase 3 ELS- Pumping Test preparation works	12	09-Oct-15 A	26-Oct-15 A	30-Sep-15	14-Oct-15		
NBC_0110	Phase 3 ELS- Pumping Test	6	27-Oct-15 A	01-Nov-15 A	19-Oct-15	26-Oct-15		
NBC_0120	Phase 3 ELS- Pumping Test Report Preparation and submission to BD	6	02-Nov-15 A	02-Nov-15 A	27-Oct-15	02-Nov-15		
NBC_0130	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to	9	04-Nov-15 A	10-Nov-15 A	03-Nov-15	12-Nov-15		
NBC_0140	Bulk excavation & layer 2 strut & preloading [500m^3]	15	11-Nov-15 A	21-Nov-15 A	13-Nov-15	30-Nov-15		
NBC_0150	Bulk excavation & layer 3 strut & preloading [500m^3]	18	23-Nov-15 A	03-Dec-15 A	08-Dec-15	31-Dec-15		
NBC_0160	Bulk excavation & layer 4 strut & preloading [500m^3]	21	04-Dec-15 A	04-Jan-16 A	31-Dec-15	26-Jan-16		
NBC_0170	Plate load test	6	05-Jan-16 A	08-Jan-16 A	20-Feb-16	27-Feb-16		
NBC_0180	Plate load test- Preparation of report & submission to BD	6	09-Jan-16 A	31-Jan-16 A	27-Feb-16	05-Mar-16		
NBC_0190	Base Slab- Waterproofing & RC construction [Concrete 490m^3] & [Re-Bar 29.5 T]	15	13-Jan-16 A	22-Jan-16 A	05-Mar-16	23-Mar-16		
NBC_0200	Wall- Waterproofing & RC construction [Concrete 300m^3] & [Re-Bar 54 T]	21	20-Feb-16 A	08-Mar-16 A	29-Feb-16	23-Mar-16		
NBC_0210	Top Slab- Waterproofing & RC construction [Concrete 180m^3] & [Re-Bar 42.7 T]	24	17-Mar-16 A	01-Apr-16 A	26-Apr-16	25-May-16		
NBC_0220	Construction of flood light footing [2 nos.]	12	29-Mar-16 A	01-Apr-16 A	26-May-16	08-Jun-16		
NBC_0230	Reinstatement and installation of flood light [2nos.]	6	29-Mar-16 A	01-Nov-16	31-Mar-16	07-Apr-16	-21	0
NBC_0240	Backfilling for Northern Basketball Court	12	05-May-16 A	04-Nov-16	05-May-16	19-May-16	-21	0
NBC_0250	Reinstate hard paving of Northern Basketball Court	18	04-Nov-16	25-Nov-16	04-Nov-16	25-Nov-16	-21	0
NBC_0260	Reinstate surface coating of Northern Basketball Court	12	25-Nov-16	09-Dec-16	25-Nov-16	09-Dec-16	-21	0
NBC_0270	Hand over to LCSD, additional remedial if require	12	09-Dec-16	23-Dec-16	09-Dec-16	23-Dec-16	-21	0
NBC_0280	Reinstate road surface on Hennessy Road	70	23-Dec-16	22-Mar-17	23-Dec-16	22-Mar-17	-21	0
Southern Basket Ball Court								
SBC_0010	Phase 1 ELS- Sheet Piles Installation [184n. x 24m]	65	22-Jul-14 A	15-Nov-14 A	09-Jul-15	22-Sep-15		



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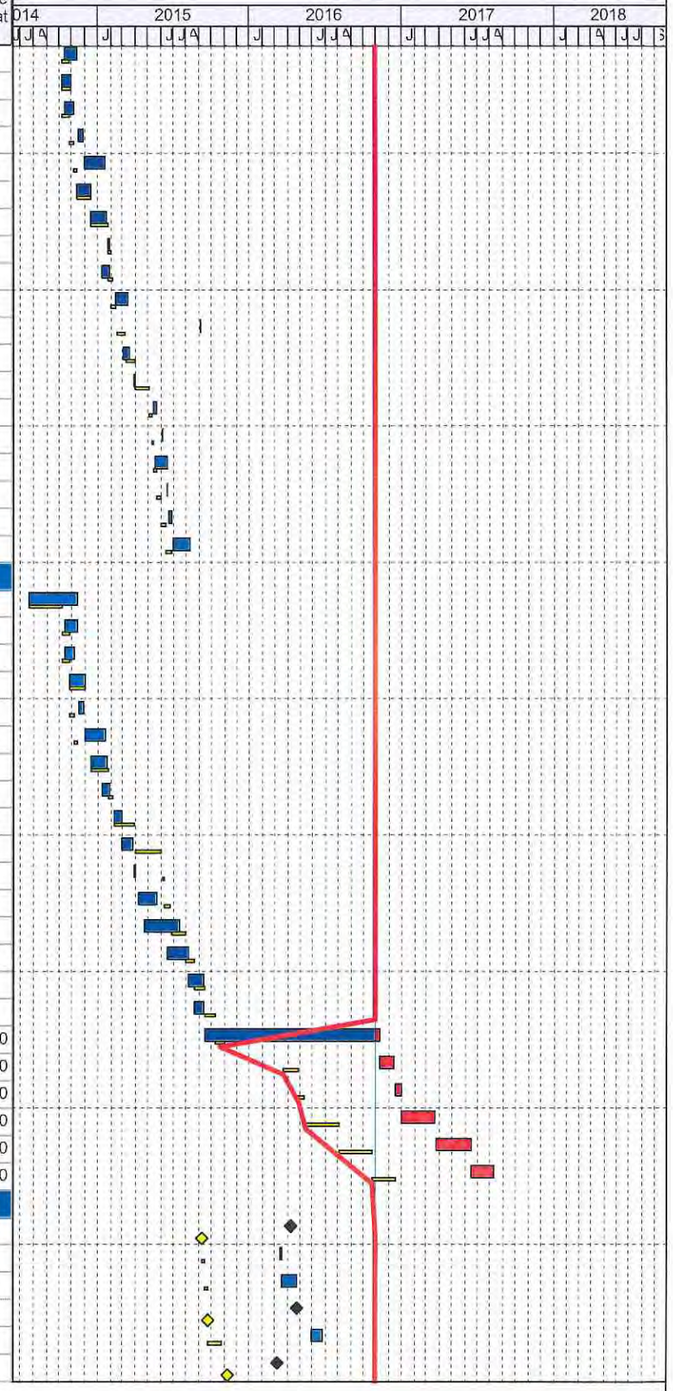
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
SBC_0020	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	15	15-Oct-14 A	15-Nov-14 A	23-Sep-15	12-Oct-15		
SBC_0030	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to	21	09-Oct-14 A	01-Nov-14 A	23-Sep-15	19-Oct-15		
SBC_0040	Phase 1 ELS- Pumping Test preparation works	15	16-Oct-14 A	08-Nov-14 A	23-Sep-15	12-Oct-15		
SBC_0050	Phase 1 ELS- Pumping Test	11	17-Nov-14 A	28-Nov-14 A	13-Oct-15	26-Oct-15		
SBC_0060	Phase 1 ELS- Pumping Test Report Preparation and submission to BD	6	04-Dec-14 A	19-Jan-15 A	27-Oct-15	02-Nov-15		
SBC_0070	Bulk excavation & layer 2 strut & preloading [800m^3]	28	15-Nov-14 A	17-Dec-14 A	12-Jun-15	16-Jul-15		
SBC_0080	Bulk excavation & layer 3 strut & preloading [800m^3]	30	18-Dec-14 A	24-Jan-15 A	17-Jul-15	20-Aug-15		
SBC_0090	Plate load test	6	26-Jan-15 A	31-Jan-15 A	13-Jan-16	19-Jan-16		
SBC_0100	Temporary Traffic Deck construction	12	10-Jan-15 A	28-Jan-15 A	21-Aug-15	03-Sep-15		
SBC_0110	Plate load test- Preparation of report & submission to BD	12	12-Feb-15 A	16-Mar-15 A	21-Aug-15	03-Sep-15		
SBC_0120	Base Slab- Waterproofing & RC construction [Concrete 420m^3] & [Re-Bar 25.3 T]	15	04-Sep-15 A	04-Sep-15 A	04-Sep-15	21-Sep-15		
SBC_0130	Wall- Waterproofing & RC construction [Concrete 280m^3] & [Re-Bar 50.4 T]	21	02-Mar-15 A	17-Mar-15 A	22-Sep-15	17-Oct-15		
SBC_0140	Top Slab- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 50 T]	22	28-Mar-15 A	02-Apr-15 A	19-Oct-15	13-Nov-15		
SBC_0150	Construction of flood light footing (2 nos.)	7	14-May-15 A	21-May-15 A	01-Jun-15	08-Jun-15		
SBC_0160	Reinstatement and installation of flood light (2nos.)	3	05-Jun-15 A	05-Jun-15 A	09-Jun-15	11-Jun-15		
SBC_0170	Backfilling for Southern Basketball Court	6	18-May-15 A	16-Jun-15 A	12-Jun-15	18-Jun-15		
SBC_0180	Reinstate hard paving of Southern Basketball Court	9	16-Jun-15 A	18-Jun-15 A	02-Jul-15	13-Jul-15		
SBC_0190	Reinstate surface coating of Southern Basketball Court	9	20-Jun-15 A	29-Jun-15 A	13-Jul-15	23-Jul-15		
SBC_0200	Hand over to LCSD, additional remedial if require	12	30-Jun-15 A	11-Aug-15 A	23-Jul-15	06-Aug-15		
Children's Play Area								
CPA_0010	Phase 1 ELS- Sheet Piles Installation [123 No. x 24m]	65	22-Jul-14 A	15-Nov-14 A	31-Mar-15	22-Jun-15		
CPA_0020	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	15	15-Oct-14 A	15-Nov-14 A	23-Jun-15	10-Jul-15		
CPA_0030	Phase 1 ELS- Pumping Test preparation works	15	16-Oct-14 A	08-Nov-14 A	23-Jun-15	10-Jul-15		
CPA_0040	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to	32	27-Oct-14 A	02-Dec-14 A	11-Jul-15	17-Aug-15		
CPA_0050	Phase 1 ELS- Pumping Test	11	17-Nov-14 A	28-Nov-14 A	11-Jul-15	23-Jul-15		
CPA_0060	Phase 1 ELS- Pumping Test Report Preparation and submission to BD	6	04-Dec-14 A	19-Jan-15 A	24-Jul-15	30-Jul-15		
CPA_0070	Bulk excavation & layer 2 strut & preloading to -1.3 mPD [680m^3]	30	18-Dec-14 A	24-Jan-15 A	18-Aug-15	21-Sep-15		
CPA_0080	Play's Area Temporary Traffic Deck construction	12	10-Jan-15 A	28-Jan-15 A	22-Sep-15	07-Oct-15		
CPA_0090	Bulk excavation & layer 3 strut & preloading [680m^3]	40	09-Feb-15 A	28-Feb-15 A	08-Oct-15	24-Nov-15		
CPA_0100	Bulk excavation & layer 4 strut & preloading [680m^3]	50	01-Mar-15 A	27-Mar-15 A	25-Nov-15	25-Jan-16		
CPA_0110	Plate load test	6	30-Mar-15 A	02-Apr-15 A	26-Jan-16	01-Feb-16		
CPA_0120	Plate load test- Preparation of report & submission to BD	12	08-Apr-15 A	23-May-15 A	02-Feb-16	18-Feb-16		
CPA_0130	Base Slab- Waterproofing & RC construction [Concrete 395m^3] & [Re-Bar 23.8 T]	30	23-Apr-15 A	17-Jul-15 A	19-Feb-16	24-Mar-16		
CPA_0140	Wall- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 37.8 T]	18	18-Jun-15 A	06-Aug-15 A	08-Jul-15	28-Jul-15		
CPA_0150	Top Slab- Waterproofing & RC construction [Concrete 185m^3] & [Re-Bar 43.8 T]	20	07-Aug-15 A	11-Sep-15 A	29-Aug-15	22-Sep-15		
CPA_0160	Ventilation Shaft Below Ground- Waterproofing & RC construction [Concrete 35m^3] & [	20	22-Aug-15 A	14-Sep-15 A	14-Sep-15	08-Oct-15		
CPA_0170	Ventilation Shaft 1.2m Above Ground- Waterproofing & RC construction [Concrete 25m'	18	14-Sep-15 A	09-Nov-16	14-Sep-15	06-Oct-15	-190	0
CPA_0180	Ventilation Shaft - Waterproofing & RC construction reach +7.40 & +9.50mPD [Concrete	30	10-Nov-16	14-Dec-16	10-Nov-16	14-Dec-16	-190	0
CPA_0190	Site cleaning for Play Area reinstatement & Landscape works	12	15-Dec-16	30-Dec-16	15-Dec-16	30-Dec-16	-190	0
CPA_0200	Reinstatement works for Plays Area	66	31-Dec-16	22-Mar-17	31-Dec-16	22-Mar-17	-190	0
CPA_0210	Landscape works	66	23-Mar-17	15-Jun-17	23-Mar-17	15-Jun-17	-190	0
CPA_0220	Hand over to LCSD, additional remedial if require	48	16-Jun-17	11-Aug-17	16-Jun-17	11-Aug-17	-190	0
Johnston Road								
JnR_0010	All Sheet Piles on JnR & 1st layer mini piles below Tram track completed	0		10-Apr-16 A		30-Jun-16		
JnR_0020	Phase 2 ELS- Pumping Test 1 for 1st layer	6	17-Mar-16 A	21-Mar-16 A	13-Apr-16	20-Apr-16		
JnR_0030	Phase 2 ELS- Pumping Test Report for 1st layer Preparation and submission	6	21-Mar-16 A	25-Apr-16 A	20-Apr-16	27-Apr-16		
JnR_0040	Phase 2 ELS- 1st layer Pumping Test completed & satisfied	0		25-Apr-16 A		25-Apr-16		
JnR_0050	Bulk excavation & layer 1 strut & preloading [570m^3]	24	30-May-16 A	27-Jun-16 A	07-May-16	04-Jun-16		
JnR_0060	All grouting and sheet piles achieved to tot level in Johnston Road	0		07-Mar-16 A		24-Jun-16		



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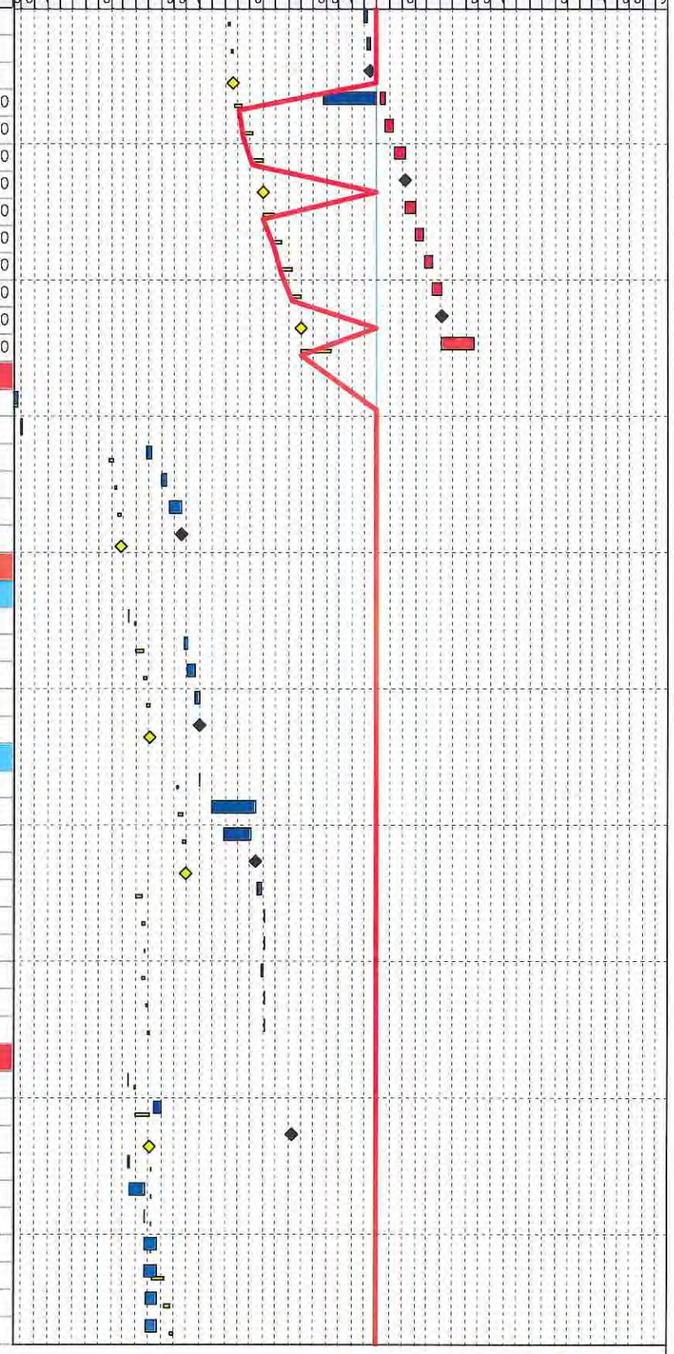
JnR_0070	Phase 2 ELS- Pumping Test 2 for whole ELS	6	30-Sep-16 A	08-Oct-16 A	12-Sep-16	20-Sep-16		
JnR_0080	Phase 2 ELS- Pumping Test Report for whole ELS Preparation and submission	6	08-Oct-16 A	15-Oct-16 A	20-Oct-16	26-Oct-16		
JnR_0090	Phase 2 ELS- Pumping test completed & satisfied	0		15-Oct-16 A		26-Oct-16		
JnR_0100	Bulk excavation & layer 2 strut & preloading [570m^3]	18	27-Jun-16 A	19-Nov-16	28-Jul-16	17-Aug-16	-275	0
JnR_0110	Bulk excavation & layer 3 strut & preloading [570m^3]	18	21-Nov-16	10-Dec-16	21-Nov-16	10-Dec-16	-275	0
JnR_0120	Bulk excavation & layer 4 strut & preloading [570m^3]	21	12-Dec-16	07-Jan-17	12-Dec-16	07-Jan-17	-275	0
JnR_0130	Bulk excavation to formation level on JnR	0		07-Jan-17		07-Jan-17	-340	0
JnR_0140	Sump pit- Waterproofing & RC construction [Concrete 250m^3] & [Re-Bar 15 T]	18	09-Jan-17	01-Feb-17	09-Jan-17	01-Feb-17	-275	0
JnR_0150	Base Slab- Waterproofing & RC construction [Concrete 265m^3] & [Re-Bar 16 T]	17	02-Feb-17	21-Feb-17	02-Feb-17	21-Feb-17	-275	0
JnR_0160	Wall- Waterproofing & RC construction [Concrete 70m^3] & [Re-Bar 12.6 T]	18	22-Feb-17	14-Mar-17	22-Feb-17	14-Mar-17	-275	0
JnR_0170	Top Slab- Waterproofing & RC construction [Concrete 125m^3] & [Re-Bar 29.6 T]	18	15-Mar-17	05-Apr-17	15-Mar-17	05-Apr-17	-275	0
JnR_0180	RC structure completed on JnR	0		05-Apr-17		05-Apr-17	-317	0
JnR_0190	Removal of temporary traffic decking ,backfill & road reinstatement on JNR	60	06-Apr-17	21-Jun-17	06-Apr-17	21-Jun-17	-92	0
Johnston Road North Footpath (TTM Stage 1, 2, 2A & 2B)								
JnR.NFP_0010	Liaison, review & acceptance for TTM Stage 1	54	14-Apr-14 A	21-Jun-14 A	31-Mar-15	08-Jun-15		
JnR.NFP_0020	Implementation of TTM Stage 1	3	28-Jun-14 A	02-Jul-14 A	09-Jun-15	11-Jun-15		
JnR.NFP_0030	Phase 2 ELS- Sheet Piles Installation [30no. x 24m]	12	28-Apr-15 A	09-May-15 A	31-Mar-15	17-Apr-15		
JnR.NFP_0040	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6	01-Jun-15 A	12-Jun-15 A	01-Jun-15	06-Jun-15		
JnR.NFP_0050	Installation of temporary traffic decking	6	22-Jun-15 A	21-Jul-15 A	04-Jul-15	10-Jul-15		
JnR.NFP_0060	Sheet piles & Traffic decking completed on North Footpath for TTM Stage 3	0		21-Jul-15 A		01-Aug-15		
Johnston Road Eastbound carriageway								
Johnston Road Eastbound carriageway North Side (TTM Stage 3)								
JnR.EBC.NS_0010	Implementation of TTM 3	3	13-Mar-15 A	14-Mar-15 A	17-Sep-15	19-Sep-15		
JnR.EBC.NS_0020	Phase 2 ELS- Sheet Piles Installation [25no. x 24m]	12	27-Jul-15 A	05-Aug-15 A	07-Aug-15	20-Aug-15		
JnR.EBC.NS_0030	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6	03-Aug-15 A	20-Aug-15 A	14-Aug-15	20-Aug-15		
JnR.EBC.NS_0040	Installation of temporary traffic decking	6	21-Aug-15 A	31-Aug-15 A	18-Sep-15	25-Sep-15		
JnR.EBC.NS_0050	Sheet Piles & Traffic decking completed on Eastbound Carriageway North Side for TTM	0		31-Aug-15 A		25-Sep-15		
Johnston Road Eastbound carriageway South Side (TTM Stage 4 & 5)								
JnR.EBC.SS_0010	Implementation of TTM 4	3	31-Aug-15 A	01-Sep-15 A	31-Aug-15	02-Sep-15		
JnR.EBC.SS_0020	Phase 2 ELS- Sheet Piles Installation [33no. x 24m]	9	02-Oct-15 A	14-Jan-16 A	04-Nov-15	13-Nov-15		
JnR.EBC.SS_0030	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6	29-Oct-15 A	04-Jan-16 A	05-Jan-16	12-Jan-16		
JnR.EBC.SS_0040	Sheet pile completed on Eastbound Carriageway South Side	0		14-Jan-16 A		07-Apr-16		
JnR.EBC.SS_0050	Coring for minipile No. 1 to reach -56mPD [60m]	8	18-Jan-16 A	27-Jan-16 A	11-Feb-16	19-Feb-16		
JnR.EBC.SS_0060	Installation of Re-Bar for minipile No.1 [4x 60m T50, 3.7Ton]	5	04-Feb-16 A	04-Feb-16 A	20-Feb-16	25-Feb-16		
JnR.EBC.SS_0070	Groutiong for minipile No.1	1	05-Feb-16 A	05-Feb-16 A	26-Feb-16	26-Feb-16		
JnR.EBC.SS_0080	Coring for minipile No. 2 to reach -56mPD [60m]	8	28-Jan-16 A	02-Feb-16 A	20-Feb-16	29-Feb-16		
JnR.EBC.SS_0090	Installation of Re-Bar for minipile No.2 [4x 60m T50, 3.7Ton]	5	03-Feb-16 A	04-Feb-16 A	01-Mar-16	05-Mar-16		
JnR.EBC.SS_0100	Groutiong for minipile No.2	1	05-Feb-16 A	05-Feb-16 A	07-Mar-16	07-Mar-16		
Johnston Road Tram Tracks (TTM Stage 3)								
JnR.TT_0010	Implementation of TTM 3	3	13-Mar-15 A	14-Mar-15 A	17-Sep-15	19-Sep-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	15-Jun-15	14-Jul-15		
JnR.TT_0040	1st layer of mini piles below tram tracks completed	0		10-Apr-16 A		30-Jun-16		
JnR.TT_0050	Expose concrete surface by Tramsway Sub-Con	3	16-Mar-15 A	18-Mar-15 A	22-Oct-15	24-Oct-15		
JnR.TT_0060	Installation of Steel Beam	4	18-Mar-15 A	24-Apr-15 A	22-Oct-15	26-Oct-15		
JnR.TT_0070	Leveling of steel Beam by Tramsway Sub-Con (NTH)	4	24-Apr-15 A	24-Apr-15 A	09-Jun-15	12-Jun-15		
JnR.TT_0080	Installation of temporary steel decking on tram track	4	25-Apr-15 A	23-May-15 A	09-Jun-15	12-Jun-15		
JnR.TT_0090	Expose concrete/ fill below tram track [60m^3]	24	25-Apr-15 A	23-May-15 A	13-Jun-15	13-Jul-15		
JnR.TT_0100	Installation of Re-bars [Re-Bars 7.6T]	12	27-Apr-15 A	23-May-15 A	14-Jul-15	27-Jul-15		
JnR.TT_0110	Concreting for concrete decking below tram track [Concrete 60m^3]	6	28-Apr-15 A	23-May-15 A	28-Jul-15	03-Aug-15		



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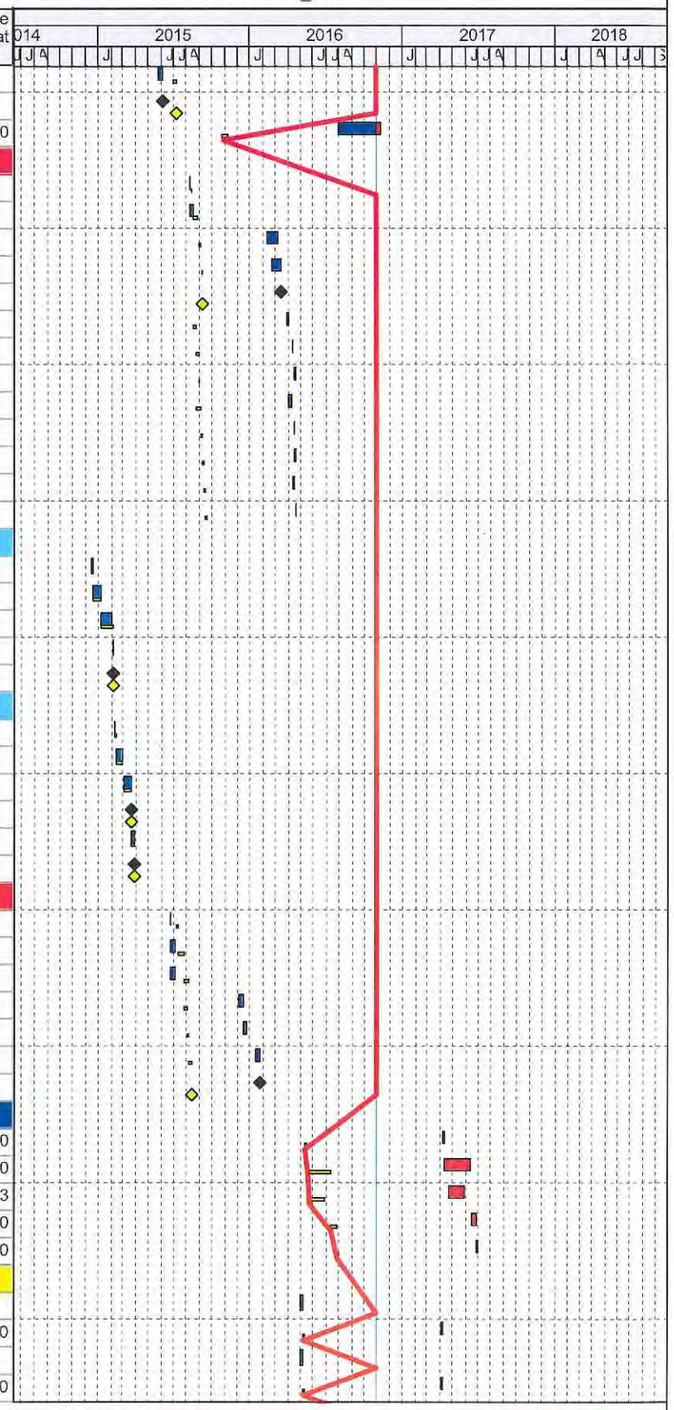
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
JnR.TT_0120	Reinstate the tram track surface	6	25-May-15 A	06-Jun-15 A	13-Aug-15	20-Aug-15		
JnR.TT_0130	Tram track concrete decking & reinstatement works completed ready for Implementatior	0		06-Jun-15 A		20-Aug-15		
JnR.TT_0140	2nd layer grouting and pipe piles below tram track to -17mPD (16m) 50no. x 324mm dia	12	01-Aug-16 A	09-Nov-16	01-Aug-16	13-Aug-16	-275	0
Johnston Road Westbound carriageway (TTM Stage 5)								
JnR.WBC_0010	Implementation of TTM Stage 5	3	11-Aug-15 A	12-Aug-15 A	23-Oct-15	26-Oct-15		
JnR.WBC_0020	Trial Trench	12	11-Aug-15 A	18-Aug-15 A	27-Oct-15	09-Nov-15		
JnR.WBC_0030	Phase 2 ELS- Sheet Piles Installation [20no. x 24m]	6	13-Feb-16 A	07-Mar-16 A	15-Mar-16	21-Mar-16		
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	09-Apr-16	13-Apr-16		
JnR.WBC_0050	Sheet piles completed on Westbound carriageway	0		16-Mar-16 A		13-Apr-16		
JnR.WBC_0060	Coring for minipile No. 3 to reach -56mPD [60m]	8	29-Mar-16 A	01-Apr-16 A	08-Apr-16	16-Apr-16		
JnR.WBC_0070	Installation of Re-Bar for minipile No.3 [4x 60m T50, 3.7Ton]	5	15-Apr-16 A	15-Apr-16 A	16-May-16	21-May-16		
JnR.WBC_0080	Groutiong for minipile No.3	1	18-Apr-16 A	20-Apr-16 A	21-May-16	23-May-16		
JnR.WBC_0090	Coring for minipile No. 4 to reach -56mPD [60m]	8	01-Apr-16 A	11-Apr-16 A	16-May-16	25-May-16		
JnR.WBC_0100	Installation of Re-Bar for minipile No.4 [4x 60m T50, 3.7Ton]	5	16-Apr-16 A	16-Apr-16 A	25-May-16	31-May-16		
JnR.WBC_0110	Grouting for minipile No.4	1	19-Apr-16 A	20-Apr-16 A	31-May-16	01-Jun-16		
JnR.WBC_0120	Re-Bar Installation for minipile location	4	15-Apr-16 A	17-Apr-16 A	01-Jun-16	06-Jun-16		
JnR.WBC_0130	Cast Concrete minipile location	2	20-Apr-16 A	22-Apr-16 A	05-Jul-16	06-Jul-16		
Johnston Road Westbound carriageway East Side (TTM Stage 2A)								
JnR.WBC.ES_0010	Implementation of TTM Stage 2A	3	18-Dec-14 A	20-Dec-14 A	12-Jun-15	15-Jun-15		
JnR.WBC.ES_0020	Expose UU	12	22-Dec-14 A	07-Jan-15 A	16-Jun-15	30-Jun-15		
JnR.WBC.ES_0030	UU diversion on JnR Westbound Carriageway East Side	24	08-Jan-15 A	04-Feb-15 A	02-Jul-15	29-Jul-15		
JnR.WBC.ES_0040	Installation of temporary traffic decking	3	05-Feb-15 A	07-Feb-15 A	30-Jul-15	01-Aug-15		
JnR.WBC.ES_0050	Traffic decking completed on Westbound Carriageway East Side for TTM Stage 2B	0		07-Feb-15 A		01-Aug-15		
Johnston Road Westbound carriageway West Side (TTM Stage 2B)								
JnR.WBC.WS_0010	Implementation of TTM Stage 2B	3	09-Feb-15 A	11-Feb-15 A	03-Aug-15	05-Aug-15		
JnR.WBC.WS_0020	Expose UU	12	12-Feb-15 A	28-Feb-15 A	06-Aug-15	19-Aug-15		
JnR.WBC.WS_0030	UU diversion on JnR Westbound Carriageway West Side	18	02-Mar-15 A	21-Mar-15 A	31-Mar-15	24-Apr-15		
JnR.WBC.WS_0040	UU diversion on JnR Westbound Carriageway Completed	0		21-Mar-15 A		24-Apr-15		
JnR.WBC.WS_0050	Installation of temporary traffic decking	6	23-Mar-15 A	28-Mar-15 A	30-Apr-16	07-May-16		
JnR.WBC.WS_0060	Traffic decking completed on Westbound Carriageway West Side for TTM Stage 3	0		28-Mar-15 A		07-May-16		
Johnston Road South Footpath (TTM 4)								
JnR.SFP_0010	Implementation of TTM 4	3	23-Jun-15 A	23-Jun-15 A	08-Aug-15	11-Aug-15		
JnR.SFP_0020	Expose UU	12	23-Jun-15 A	06-Jul-15 A	12-Aug-15	25-Aug-15		
JnR.SFP_0030	UU diversion	9	23-Jun-15 A	06-Jul-15 A	26-Aug-15	04-Sep-15		
JnR.SFP_0040	Phase 2 ELS- Sheet Piles Installation [15no. x 24m]	6	05-Dec-15 A	15-Dec-15 A	05-Jan-16	11-Jan-16		
JnR.SFP_0050	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	3	16-Dec-15 A	24-Dec-15 A	12-Jan-16	14-Jan-16		
JnR.SFP_0060	Installation of Temporary Traffic decking	6	13-Jan-16 A	25-Jan-16 A	08-Mar-16	14-Mar-16		
JnR.SFP_0070	Sheet Piles & Traffic decking completed on South Footpath for TTM Stage 5	0		25-Jan-16 A		07-Apr-16		
H15 Break Through Works								
H15_0010	Installation protection measurement for break through	3	10-Apr-17	12-Apr-17	10-Apr-17	12-Apr-17	-260	0
H15_0020	Breaking out to H15 - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m x 1m t	48	13-Apr-17	14-Jun-17	13-Apr-17	14-Jun-17	-260	0
H15_0030	Breaking out to H15 - Installation of temporary steel proping	30	22-Apr-17	29-May-17	22-Apr-17	29-May-17	-247	13
H15_0040	Breaking out to H15 - Construct the portal frame	12	15-Jun-17	28-Jun-17	15-Jun-17	28-Jun-17	-260	0
H15_0050	Demolish the propping steel members	2	29-Jun-17	30-Jun-17	29-Jun-17	30-Jun-17	-260	0
Cost Centre B: Part A Works, ABWF Works for the New Subway								
ABWF_0010	Preparation works for Fire Shutter on GL-L	6	03-May-16 A	09-May-16 A	19-Dec-16	24-Dec-16		
ABWF_0020	Installation of Fire Shutter on GL-L	3	06-Apr-17	08-Apr-17	06-Apr-17	08-Apr-17	-260	0
ABWF_0030	Preparation works for Security Shutter on GL-L	6	03-May-16 A	09-May-16 A	19-Dec-16	24-Dec-16		
ABWF_0040	Installation of Security Shutter on GL-L	3	06-Apr-17	08-Apr-17	06-Apr-17	08-Apr-17	-260	0



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

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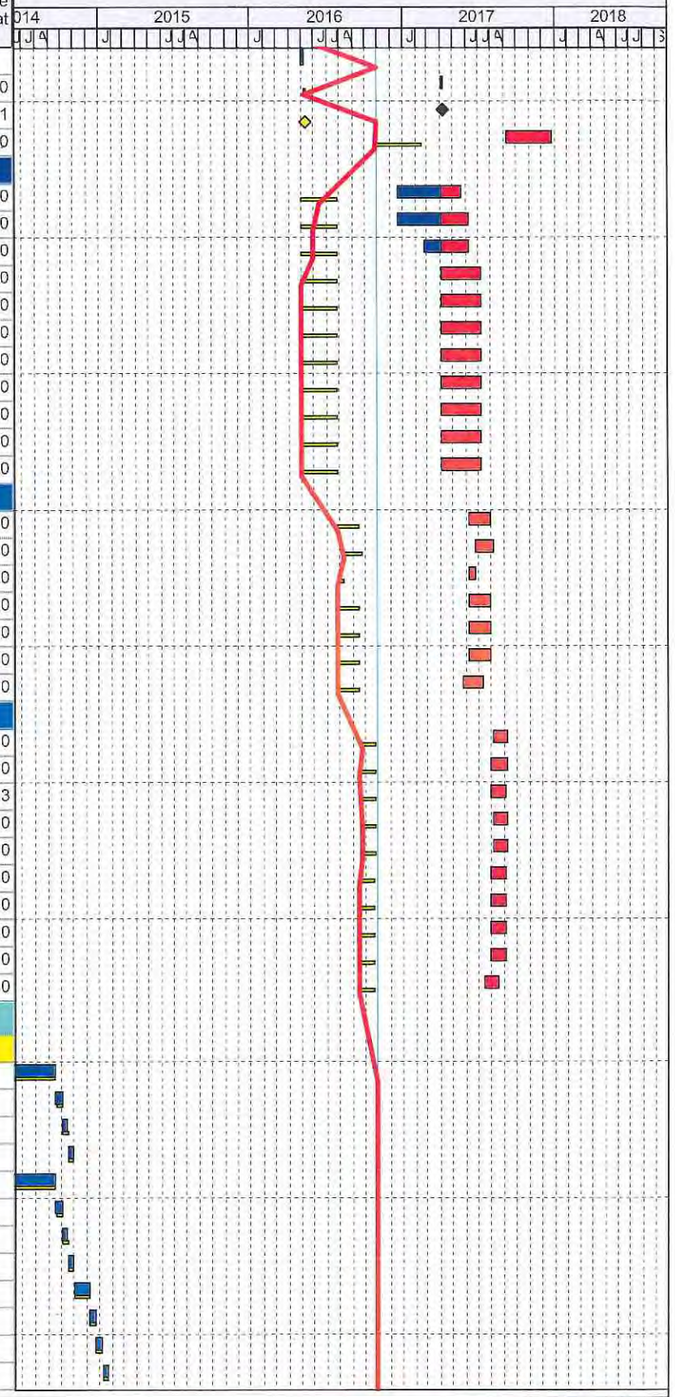
ABWF_0050	Preparation works for Flood Gate on GL-L	6	03-May-16 A	09-May-16 A	19-Dec-16	24-Dec-16		
ABWF_0060	Installation for Flood Gate on GL-L	3	06-Apr-17	08-Apr-17	06-Apr-17	08-Apr-17	-260	0
ABWF_0070	Completion of Flood Gate, Fire Shutter & Security Shutter on GL-L	0		08-Apr-17		08-Apr-17	-317	1
ABWF_0080	Remaining ABWF, finishing & Site cleaning works	90	07-Sep-17	27-Dec-17	07-Sep-17	27-Dec-17	-247	0
ABWF Works - Degree 1								
ABWF.D1_0010	Site Cleaning & dry the internal of Structure & building	72	19-Dec-16 A	23-May-17	19-Dec-16	18-Mar-17	-233	0
ABWF.D1_0020	Installation of blockwalls & partition wall except on plant access route	72	19-Dec-16 A	10-Jun-17	19-Dec-16	18-Mar-17	-247	0
ABWF.D1_0030	Apply Plastering, undercoat, painting, floor screeding including plinths and upstands	72	22-Feb-17 A	10-Jun-17	22-Feb-17	24-May-17	-82	0
ABWF.D1_0040	Forming equipment delivery routes and access openings for DC or Interface Contractors	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0050	Install Cast-in items, subframe; Form niches, recesses & box outs; Install cable troughs,	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0060	Preparation, submission and approval of Structure as-built survey	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0070	Form Structural & blockwork E&M openings & preparation of survey	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0080	Installation of movement joints & stitch strips	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0090	Form escalator zones & pits complete; survey reference lines for acceptance	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0100	Installation of Earthing mat, earthing rods & earthing pits, test & acceptance	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF.D1_0110	Installation of underground pipe work including manholes, ductworks & drawpits	72	06-Apr-17	06-Jul-17	06-Apr-17	06-Jul-17	-104	0
ABWF Works - Degree 2								
ABWF.D2_0010	Permanent door frames installed with temporary doors & locks	42	10-Jun-17	31-Jul-17	10-Jun-17	31-Jul-17	-241	0
ABWF.D2_0020	Installation of Floor finishes & wall tilling in plant rooms for Designated Contractors	36	24-Jun-17	07-Aug-17	24-Jun-17	07-Aug-17	-247	0
ABWF.D2_0030	Install Glazing & Balustrade support	12	10-Jun-17	24-Jun-17	10-Jun-17	24-Jun-17	-247	0
ABWF.D2_0040	Install Metal staircases, cat-ladders & catwalks	42	10-Jun-17	31-Jul-17	10-Jun-17	31-Jul-17	-244	0
ABWF.D2_0050	Install External louvers	42	10-Jun-17	31-Jul-17	10-Jun-17	31-Jul-17	-244	0
ABWF.D2_0060	Install Framework for final finishes	42	10-Jun-17	31-Jul-17	10-Jun-17	31-Jul-17	-244	0
ABWF.D2_0070	Water tightness testing to water tanks & acceptance	42	24-May-17	13-Jul-17	24-May-17	13-Jul-17	-230	0
ABWF Works - Degree 3								
ABWF.D3_0010	Inatall & apply all remaining finishes including permanent doors, ironmongery	27	07-Aug-17	07-Sep-17	07-Aug-17	07-Sep-17	-247	0
ABWF.D3_0011	Installation of VE Panel [591m^2]	33	31-Jul-17	07-Sep-17	31-Jul-17	07-Sep-17	-157	0
ABWF.D3_0012	Installation of Ceiling Panel [565 m^2]	33	31-Jul-17 A	04-Sep-17	31-Jul-17	07-Sep-17	-154	3
ABWF.D3_0013	Installation of floor finishing [565 m^2]	27	07-Aug-17	07-Sep-17	07-Aug-17	07-Sep-17	-157	0
ABWF.D3_0020	Install Balustrade	27	07-Aug-17	07-Sep-17	07-Aug-17	07-Sep-17	-247	0
ABWF.D3_0030	Install Signage hangers & supports	30	31-Jul-17	04-Sep-17	31-Jul-17	04-Sep-17	-244	0
ABWF.D3_0040	Install smoke barriers	30	31-Jul-17	04-Sep-17	31-Jul-17	04-Sep-17	-244	0
ABWF.D3_0050	Apply Acoustic treatment	30	31-Jul-17	04-Sep-17	31-Jul-17	04-Sep-17	-244	0
ABWF.D3_0060	Install Louvres & grilles	30	31-Jul-17	04-Sep-17	31-Jul-17	04-Sep-17	-244	0
ABWF.D3_0070	Seal All openings & Penetrations	30	14-Jul-17	17-Aug-17	14-Jul-17	17-Aug-17	-230	0
C: Building Services								
Design, Shop Drawings, Materials & Equipments Submission and Approval								
BS.DS_0010	BS Works- Preparation and submission for detailed design of BS works	128	14-Apr-14 A	18-Sep-14 A	31-Mar-15	04-Sep-15		
BS.DS_0020	BS Works- Review and approval for detailed design of BS works	12	19-Sep-14 A	04-Oct-14 A	05-Sep-15	18-Sep-15		
BS.DS_0030	BS Works- Preparation and re-submission for detailed design of BS works (If require)	12	06-Oct-14 A	18-Oct-14 A	19-Sep-15	05-Oct-15		
BS.DS_0040	BS Works- Review and approval for detailed design of BS works (If require)	12	20-Oct-14 A	01-Nov-14 A	06-Oct-15	19-Oct-15		
BS.DS_0050	BS Works- Contractor prepare & submit the propose suppliers & model types of major E	128	14-Apr-14 A	18-Sep-14 A	31-Mar-15	04-Sep-15		
BS.DS_0060	BS Works- Review & approval the propose suppliers & model types of major BS equipm	12	19-Sep-14 A	04-Oct-14 A	05-Sep-15	18-Sep-15		
BS.DS_0070	BS Works- Contractor prepare & re-submit propose suppliers & model types of major B	12	06-Oct-14 A	18-Oct-14 A	19-Sep-15	05-Oct-15		
BS.DS_0080	BS Works- Review the propose suppliers & model types of major BS equipment & mate	12	20-Oct-14 A	01-Nov-14 A	06-Oct-15	19-Oct-15		
BS.DS_0090	BS Works- Preparation and submission of BS shop drawings	32	03-Nov-14 A	09-Dec-14 A	20-Oct-15	26-Nov-15		
BS.DS_0100	BS Works- Review and approval of BS shop drawings	12	10-Dec-14 A	23-Dec-14 A	27-Nov-15	10-Dec-15		
BS.DS_0110	BS Works- Preparation and re-submission of BS shop drawings (If require)	12	24-Dec-14 A	09-Jan-15 A	11-Dec-15	24-Dec-15		
BS.DS_0120	BS Works- Review and approval of BS shop drawings (If require)	12	10-Jan-15 A	23-Jan-15 A	28-Dec-15	11-Jan-16		



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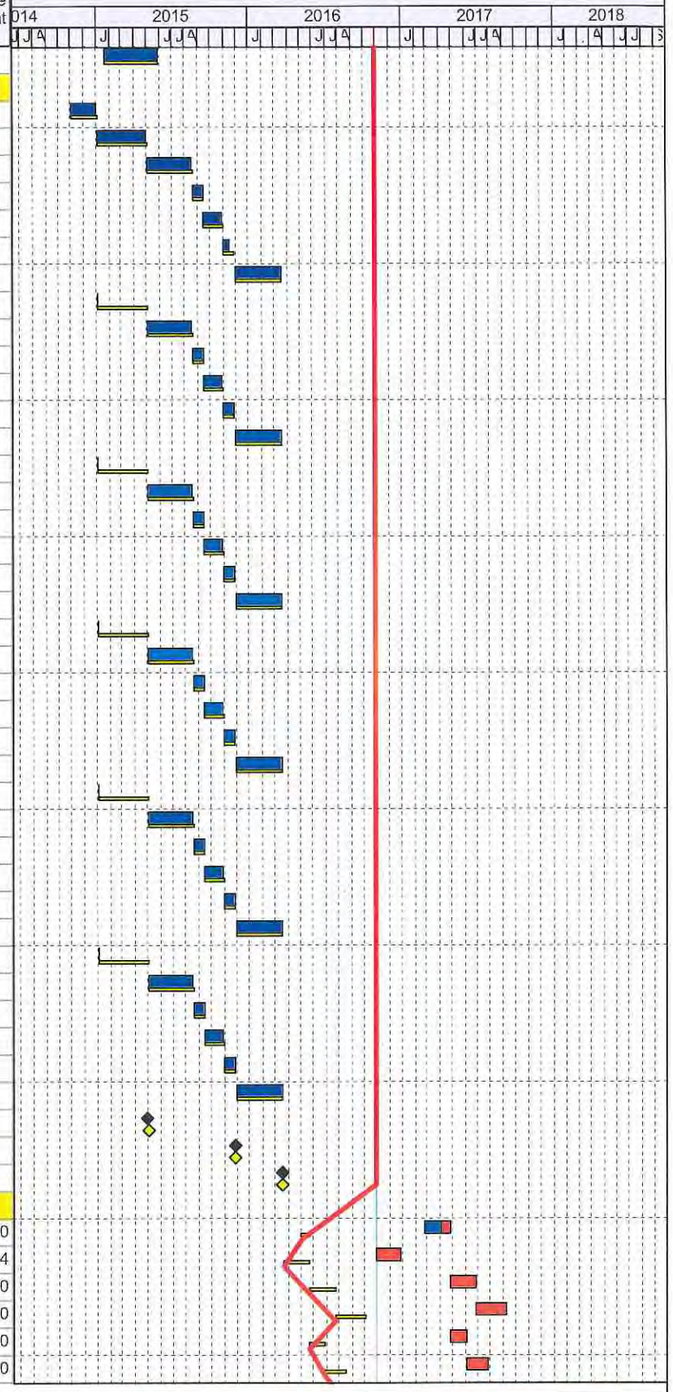
BS.DS_0130	Exchange of Design Information with Designated and Interfacing Contractors	100	24-Jan-15 A	30-May-15 A	31-Jul-15	27-Nov-15		
Procurement and Delivery of Materials and Equipments								
BS.PD_0010	All Major building service equipments & materials - Manufacture & fabrication - Procurem	50	03-Nov-14 A	02-Jan-15 A	20-Oct-15	17-Dec-15		
BS.PD_0020	Others Major building service equipments & materials - Place order	95	03-Jan-15 A	02-May-15 A	18-Dec-15	18-Apr-16		
BS.PD_0030	Others Major building service equipments & materials - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	24-Sep-15	14-Jan-16		
BS.PD_0040	Others Major building service equipments & materials - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	01-Feb-16	02-Mar-16		
BS.PD_0050	Others Major building service equipments & materials - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	03-Mar-16	18-Apr-16		
BS.PD_0060	Others Major building service equipments & materials - Factory acceptance (If require)	24	02-Nov-15 A	18-Nov-15 A	19-Apr-16	18-May-16		
BS.PD_0070	Others Major building service equipments & materials - Delivery to site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	19-May-16	02-Sep-16		
BS.PD_0080	Air Handling Unit - Place Order	95	03-Jan-15 A	05-Jan-15 A	18-Dec-15	18-Apr-16		
BS.PD_0090	Air Handling Unit - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	31-Jul-15	16-Nov-15		
BS.PD_0100	Air Handling Unit - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	25-Feb-16	23-Mar-16		
BS.PD_0110	Air Handling Unit - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	24-Mar-16	10-May-16		
BS.PD_0120	Air Handling Unit - Factory acceptance testing (If require)	24	02-Nov-15 A	28-Nov-15 A	11-May-16	08-Jun-16		
BS.PD_0130	Air Handling Unit - Delivery to site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	10-Jun-16	24-Sep-16		
BS.PD_0140	In-line Centrifugal Fan - Place Order	95	03-Jan-15 A	05-Jan-15 A	18-Dec-15	18-Apr-16		
BS.PD_0150	In-line Centrifugal Fan - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	31-Jul-15	16-Nov-15		
BS.PD_0160	In-line Centrifugal Fan - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	25-Feb-16	23-Mar-16		
BS.PD_0170	In-line Centrifugal Fan - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	24-Mar-16	10-May-16		
BS.PD_0180	In-line Centrifugal Fan - Factory acceptance testing (If require)	24	02-Nov-15 A	28-Nov-15 A	11-May-16	08-Jun-16		
BS.PD_0190	In-line Centrifugal Fan - Delivery to Site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	10-Jun-16	24-Sep-16		
BS.PD_0200	Smoke Extraction Fan - Place Order	95	03-Jan-15 A	05-Jan-15 A	18-Dec-15	18-Apr-16		
BS.PD_0210	Smoke Extraction Fan - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	31-Jul-15	16-Nov-15		
BS.PD_0220	Smoke Extraction Fan - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	25-Feb-16	23-Mar-16		
BS.PD_0230	Smoke Extraction Fan - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	24-Mar-16	10-May-16		
BS.PD_0240	Smoke Extraction Fan - Factory acceptance testing (If require)	24	02-Nov-15 A	28-Nov-15 A	11-May-16	08-Jun-16		
BS.PD_0250	Smoke Extraction Fan - Delivery to site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	10-Jun-16	24-Sep-16		
BS.PD_0260	Fan Coil Unit - Place order	95	03-Jan-15 A	05-Jan-15 A	18-Dec-15	18-Apr-16		
BS.PD_0270	Fan Coil Unit - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	31-Jul-15	16-Nov-15		
BS.PD_0280	Fan Coil Unit - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	25-Feb-16	23-Mar-16		
BS.PD_0290	Fan Coil Unit - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	24-Mar-16	10-May-16		
BS.PD_0300	Fan Coil Unit - Factory acceptance testing (If require)	24	02-Nov-15 A	28-Nov-15 A	11-May-16	08-Jun-16		
BS.PD_0310	Fan Coil Unit - Delivery to site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	10-Jun-16	24-Sep-16		
BS.PD_0320	Motorized Smoke & Fire damper - Place order	95	03-Jan-15 A	05-Jan-15 A	18-Dec-15	18-Apr-16		
BS.PD_0330	Motorized Smoke & Fire damper - Manufacture & fabrication	90	04-May-15 A	19-Aug-15 A	31-Jul-15	16-Nov-15		
BS.PD_0340	Motorized Smoke & Fire damper - Factory acceptance testing	24	20-Aug-15 A	16-Sep-15 A	25-Feb-16	23-Mar-16		
BS.PD_0350	Motorized Smoke & Fire damper - Remedial works (If require)	36	17-Sep-15 A	31-Oct-15 A	24-Mar-16	10-May-16		
BS.PD_0360	Motorized Smoke & Fire damper - Factory acceptance testing (If require)	24	02-Nov-15 A	28-Nov-15 A	11-May-16	08-Jun-16		
BS.PD_0370	Motorized Smoke & Fire damper - Delivery to site/ ECS Room	90	30-Nov-15 A	19-Mar-16 A	10-Jun-16	24-Sep-16		
BS.PD_0380	All Major equipment BS equipment & materials - Completed placing orders	0		02-May-15 A		31-Mar-16		
BS.PD_0390	All Major equipment BS equipment & materials - Completed all factory acceptance testin	0		28-Nov-15 A		31-Mar-16		
BS.PD_0400	All Major equipment BS equipment & materials - Completed delivery to ECS room	0		19-Mar-16 A		04-Jun-16		
Installation of Building Services								
BS.I_0009	Installation of trucking, cable for the whole subway linking between H15 and WAC statio	17	22-Feb-17 A	27-Apr-17	22-Feb-17	14-Mar-17	-275	0
BS.I_0010	Electrical - Within Stn, Distribution equip. 16 nr, cable tray & trunk 420m, lighting fitting 8	49	31-Oct-16	28-Dec-16	31-Oct-16	28-Dec-16	-181	94
BS.I_0020	Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth	50	27-Apr-17	28-Jun-17	27-Apr-17	28-Jun-17	-275	0
BS.I_0030	Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth	60	28-Jun-17	07-Sep-17	28-Jun-17	07-Sep-17	-275	0
BS.I_0040	ECS - Within WAC Stn, Grille 6 nr, air duct 115m2, damper 7 nr.	30	27-Apr-17	05-Jun-17	27-Apr-17	05-Jun-17	-261	0
BS.I_0050	ECS - Subway, Pipe/insul.75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, dampe	42	05-Jun-17	25-Jul-17	05-Jun-17	25-Jul-17	-261	0



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

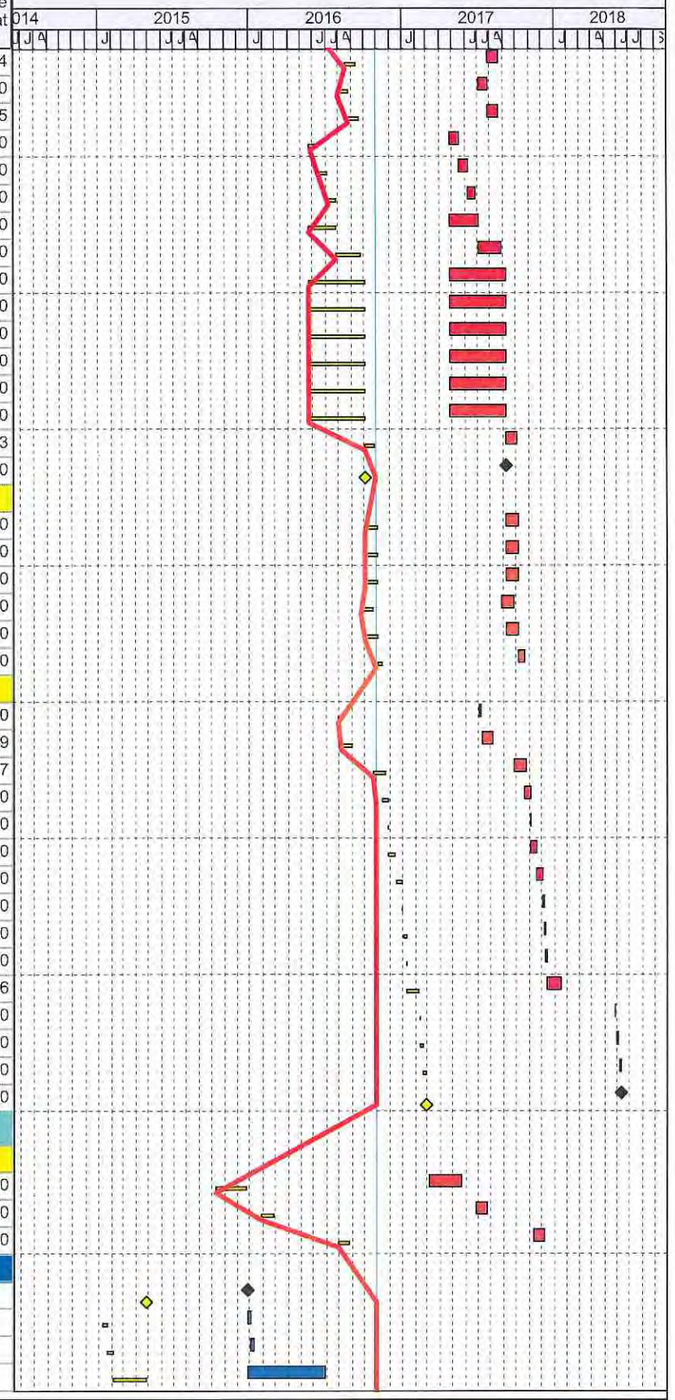
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
BS.I_0060	ECS - Subway, Pipe/insul.75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, dampe	24	25-Jul-17	22-Aug-17	25-Jul-17	22-Aug-17	-261	14
BS.I_0070	FS Works - Within H15, Pipe 59m, dectector 7 nr, hose reel 1 nr	21	03-Jul-17	26-Jul-17	03-Jul-17	26-Jul-17	-260	0
BS.I_0080	FS Works - Subway, Pipe 155m, valve 2 nr, detectors 38 nr, hose reel 1 nr, fire extinguis	21	27-Jul-17	19-Aug-17	27-Jul-17	19-Aug-17	-260	15
BS.I_0090	Drainage System - Waste - Existing WSC Stn, 35 m pipe, 2 valve, 4 pit, 1 switch/ control	18	27-Apr-17 A	18-May-17	27-Apr-17	20-May-17	-215	0
BS.I_0100	Drainage System - Waste - Subway, Pipe DI/CI 257+18m, 7 joint, 6 OTC	18	20-May-17 A	07-Jun-17	20-May-17	12-Jun-17	-215	0
BS.I_0110	Drainage System - Rainwater Discharge, CI pipe, 8+18m above/below ground, 2 manhc	18	12-Jun-17 A	26-Jun-17	12-Jun-17	04-Jul-17	-215	0
BS.I_0120	Cleansing Water System - Within WAC Station, 137m copper pipe, 3 gate valve, 2 stopc	54	27-Apr-17	04-Jul-17	27-Apr-17	04-Jul-17	-268	0
BS.I_0130	Cleansing Water System - Subway, 87m copper pipe, 1 gate valve, 1 joint	48	04-Jul-17	29-Aug-17	04-Jul-17	29-Aug-17	-268	0
BS.I_0140	Installation of Air Handling Unit	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0150	Installation of In-line Centrifugal Fan	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0160	Installation of Smoke Extraction Fan	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0170	Installation of Fan Coil Unit	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0180	Installation of Motorized Smoke & Fire damper	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0190	Installation & integration of control system	110	27-Apr-17	07-Sep-17	27-Apr-17	07-Sep-17	-275	0
BS.I_0200	Remaining BS Works	21	07-Sep-17	03-Oct-17	07-Sep-17	03-Oct-17	-272	3
INF.SAMSp	Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'	0		07-Sep-17		07-Sep-17	-192	0
Testing and Commissioning								
BS.TC_0010	T&C ECS - Tests on Ventilation Fans, Air Balancing, Equipment & System, Control, Nois	24	07-Sep-17	07-Oct-17	07-Sep-17	07-Oct-17	-275	0
BS.TC_0020	T&C - SAT of HV Sw Boards/ TX, LV Sw Boards & MCC, Lighting Control, etc.	24	07-Sep-17	07-Oct-17	07-Sep-17	07-Oct-17	-275	0
BS.TC_0030	T&C Fire Services - Performance Test/ FH & HR System/ Auto Fire Alam System	24	07-Sep-17	07-Oct-17	07-Sep-17	07-Oct-17	-275	0
BS.TC_0040	T&C Plumbing and Drainage - P&D Pumps, Control System	24	29-Aug-17	26-Sep-17	29-Aug-17	26-Sep-17	-268	0
BS.TC_0050	T&C ELV System - Contol Systems	24	07-Sep-17	07-Oct-17	07-Sep-17	07-Oct-17	-275	0
FSI	FSI - Integrated Test	11	07-Oct-17	20-Oct-17	07-Oct-17	20-Oct-17	-275	0
Statutory Inspection and Approval								
BS.SIA_0010	Submit BA14 for completion of breakthrough	6	03-Jul-17	08-Jul-17	03-Jul-17	08-Jul-17	-130	0
BS.SIA_0020	BD's acknowledgementletter obtained	24	10-Jul-17	05-Aug-17	10-Jul-17	05-Aug-17	-130	289
BS.SIA_0030	DSD/ WSD Inspection and Connection	24	26-Sep-17	26-Oct-17	26-Sep-17	26-Oct-17	-268	7
BS.SIA_0040	Connection for electricity	12	20-Oct-17	04-Nov-17	20-Oct-17	04-Nov-17	-275	0
BS.SIA_0050	Submit Form 1 and Form 2	1	04-Nov-17	06-Nov-17	04-Nov-17	06-Nov-17	-275	0
BS.SIA_0060	FS Inpection / Re-inspection	12	06-Nov-17	20-Nov-17	06-Nov-17	20-Nov-17	-275	0
BS.SIA_0070	FS Defect Rectification and Approval	12	21-Nov-17	05-Dec-17	21-Nov-17	05-Dec-17	-275	0
BS.SIA_0080	Form 3 Obtained	1	05-Dec-17	06-Dec-17	05-Dec-17	06-Dec-17	-275	0
BS.SIA_0090	BD Inpection/ Re-inspection	6	06-Dec-17	13-Dec-17	06-Dec-17	13-Dec-17	-275	0
BS.SIA_0100	EMSD-RB Pre-Inspection by MTRC Ops Team	1	13-Dec-17	14-Dec-17	13-Dec-17	14-Dec-17	-275	0
BS.SIA_0110	Remedial Works	24	14-Dec-17	15-Jan-18	14-Dec-17	15-Jan-18	-275	106
BS.SIA_0120	EMSD-RB Formal Inspection	1	29-May-18	29-May-18	29-May-18	29-May-18	-381	0
BS.SIA_0130	Remedial Works & Re-Inspection (If Require)	6	30-May-18	05-Jun-18	30-May-18	05-Jun-18	-381	0
BS.SIA_0140	EMSD Letter of "No Objection" Obtained/ Ready to Open	6	06-Jun-18	12-Jun-18	06-Jun-18	12-Jun-18	-381	0
BS.SIA_Comp	Complete & pass all statutory, joint Inspection & handover to Operation Team for the BS	0		12-Jun-18		12-Jun-18	-471	0
D: WAC Modification Works (Part B Works)								
WAC Station Modification Works								
WMW_0010	Install New Telephone Booth and associated works (NTH)	60	06-Mar-17	20-May-17	06-Mar-17	20-May-17	-381	30
WMW_0020	Relocate 4 Advertising Panels (NTH)	21	27-Jun-17	21-Jul-17	27-Jun-17	21-Jul-17	-392	0
WMW_0030	Finishing, Remedial works & site cleaning	24	13-Nov-17	09-Dec-17	13-Nov-17	09-Dec-17	-381	0
AFC Audit Room								
INF.AFCp	Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Le	0		28-Dec-15 A		27-Feb-16		
WMW.AFC_0010	Preparation works for works in WAC station	10	28-Dec-15 A	02-Jan-16 A	10-Oct-15	22-Oct-15		
WMW.AFC_0020	Internal Hoarding in WAC station (NTH)	12	04-Jan-16 A	09-Jan-16 A	30-Nov-15	12-Dec-15		
WMW.AFC_0030	Construct new AFC/Audit Room next to Entrance B1, B2, ABWF & BS Works (NTH)	60	28-Dec-15 A	30-Jun-16 A	01-Feb-16	18-Apr-16		



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

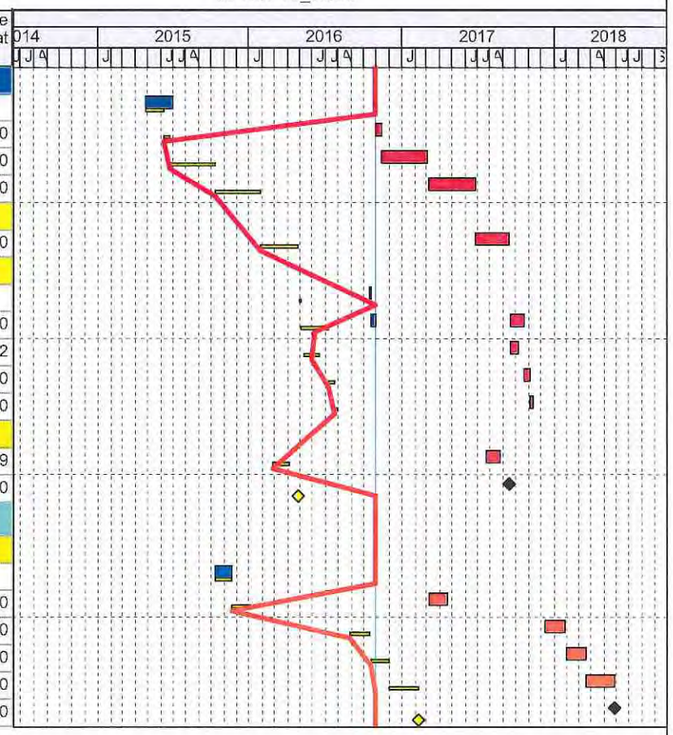
Contract C6593-13C Wan Chai Station Lee Tung Street Subway

Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Activity ID	Activity Name	Original Duration	Start	Finish	BL Project Start	BL Project Finish	Total Float	Free Float
Existing AFC Aduit Room, Maxim's & Circle K Kiosks								
WMW.K_0010	Liaison with MTR/ relevance parties for modification works of existing Kiosks & Audit Roo	36	27-Apr-15 A	30-Jun-15 A	05-Jul-16	15-Aug-16		
WMW.K_0020	Internal Hoarding in WAC station (NTH)	12	31-Oct-16	12-Nov-16	31-Oct-16	12-Nov-16	-411	0
WMW.K_0030	Modification Works to existing AFC/Audit, Store & Kiosk 3 & 5 (NTH)	90	14-Nov-16	04-Mar-17	14-Nov-16	04-Mar-17	-411	0
WMW.K_0040	Modification to existing Kiosk 2 (NTH)	90	06-Mar-17	26-Jun-17	06-Mar-17	26-Jun-17	-411	0
ABWF Works & Misc Works								
WMW.ABWF_0010	ABWF - Plaster & titling 29 m2, baffling ceiling 10 m2, metal cladding 9 m2	70	27-Jun-17	16-Sep-17	27-Jun-17	16-Sep-17	-411	0
Breaking Out WAC Station								
WMW.BO_0010	Installation protection measurement for break through	2	17-Oct-16 A	19-Oct-16 A	22-Jul-17	24-Jul-17		
WMW.BO_0020	Breaking out WAC Station - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m	54	19-Oct-16 A	20-Oct-17	18-Sep-17	22-Nov-17	-381	0
WMW.BO_0030	Breaking out WAC Station - Installation of temporary steel proping	30	23-Sep-17 A	06-Oct-17	23-Sep-17	31-Oct-17	-369	12
WMW.BO_0040	Breaking out WAC Station - Construct the portal frame	12	21-Oct-17	04-Nov-17	21-Oct-17	04-Nov-17	-381	0
WMW.BO_0050	Demolish the propping steel members	6	06-Nov-17	11-Nov-17	06-Nov-17	11-Nov-17	-381	0
Testing and Commissioning								
WMW.C_0010	Testing and Commissioning	30	22-Jul-17	25-Aug-17	22-Jul-17	25-Aug-17	-392	19
WMW.K_Comp	Specified Part 2B - Complete all works at the 2 new Shop Kiosks and hand over to the E	0		16-Sep-17		16-Sep-17	-503	0
E. WAC Station Imporvement Works (Part C Works)								
Improvement Works to WAC Station								
WIW_0010	Modify, provide & install new glass barrier to suit new AFC gates (NTH)	34	12-Oct-15 A	20-Nov-15 A	01-Nov-16	09-Dec-16		
WIW_0020	Provide and install additional AFC gates (NTH)	34	06-Mar-17	18-Apr-17	06-Mar-17	18-Apr-17	-40	0
WIW_0030	Provide builder works for TIMS relocation (NTH)	40	11-Dec-17	29-Jan-18	11-Dec-17	29-Jan-18	-381	0
WIW_0040	T&C by Designated Contractor for TIMS (NTH)	40	30-Jan-18	20-Mar-18	30-Jan-18	20-Mar-18	-381	0
WIW_0050	Make Good builder works for TIMS (NTH)	53	21-Mar-18	28-May-18	21-Mar-18	28-May-18	-381	0
WIW_Comp	E3- All works in milestone E completed - Programmed	0		28-May-18		28-May-18	-472	0



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

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

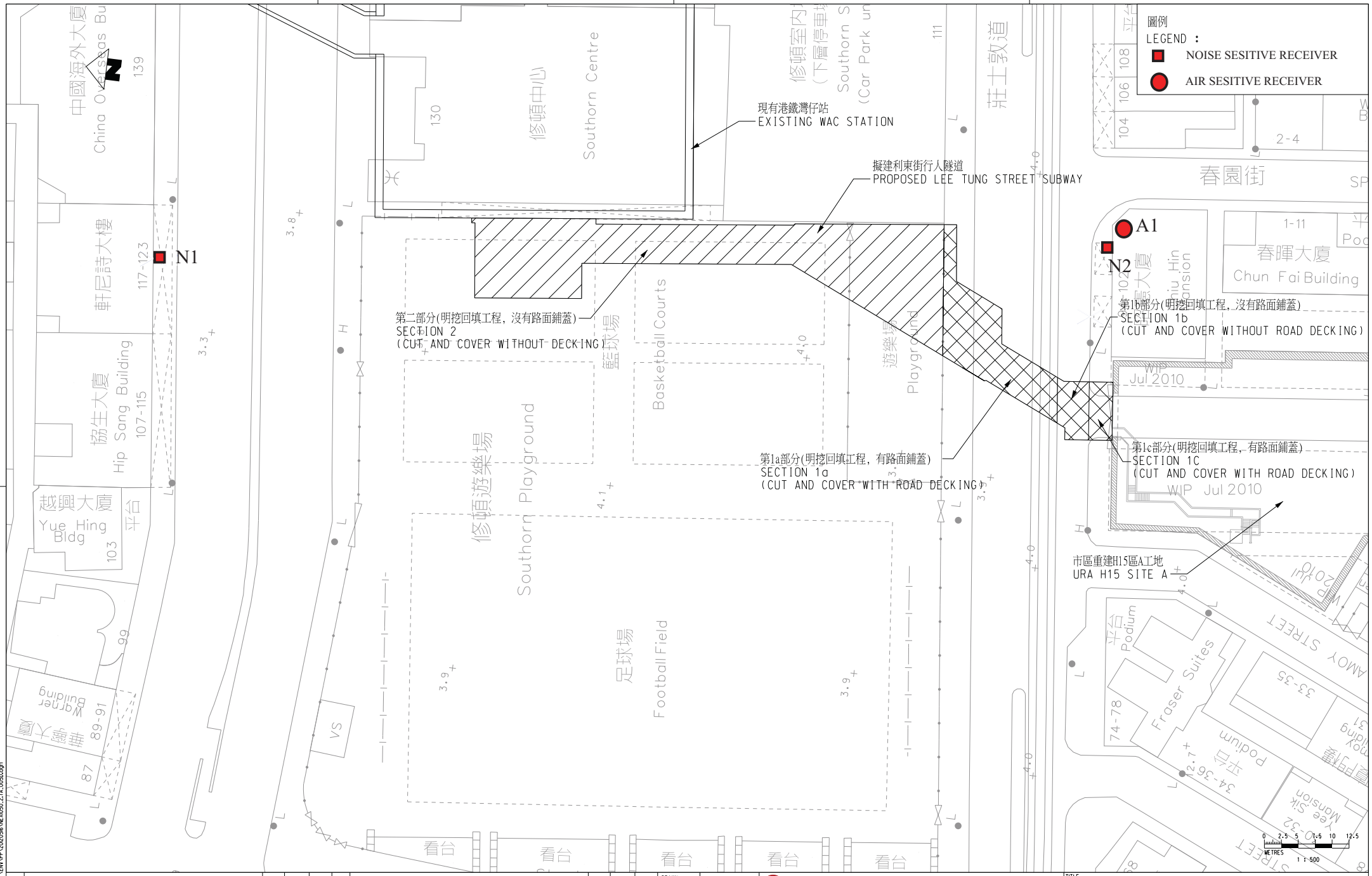
Master Program (Rev.C)

Progress vs Program (Updated Ending Oct'16)

Kaden 基利

Appendix C

Monitoring Locations



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

DRAWN
DESIGNED
CHECKED
APPROVED
DATE

MTR

WAC STATION LEE TUNG STREET SUBWAY

ORIGINATOR

Mott MacDonald

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

CADD REF.

TITLE

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

SCALE 1:500 (A3)

DRAWING NO.

REV.

PLOT DRV: C:\ProgramData\Bentley\MicroStation V8i (SELECTseries1 WorkSpace\System\plotcfg\WTR_PDF_BW_COL_300DPI.plt
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Appendix D

Calibration Certificate of Monitoring Equipment

Location : Chiu Hin Mansion
Location ID : A1

Date of Calibration: 13-Oct-16
Next Calibration Date: 13-Dec-16
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1013.5	Corrected Pressure (mm Hg)	760.125
Temperature (°C)	26.0	Temperature (K)	299

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.3	5.3	10.6	1.637	51	50.83	Slope = 38.9659
13	4	4	8	1.424	45	44.85	Intercept = -11.8329
10	3.1	3.1	6.2	1.256	38	37.88	Corr. coeff. = 0.9961
7	2.5	2.5	5	1.129	32	31.90	
5	1.6	1.6	3.2	0.906	23	22.92	

Calculations :

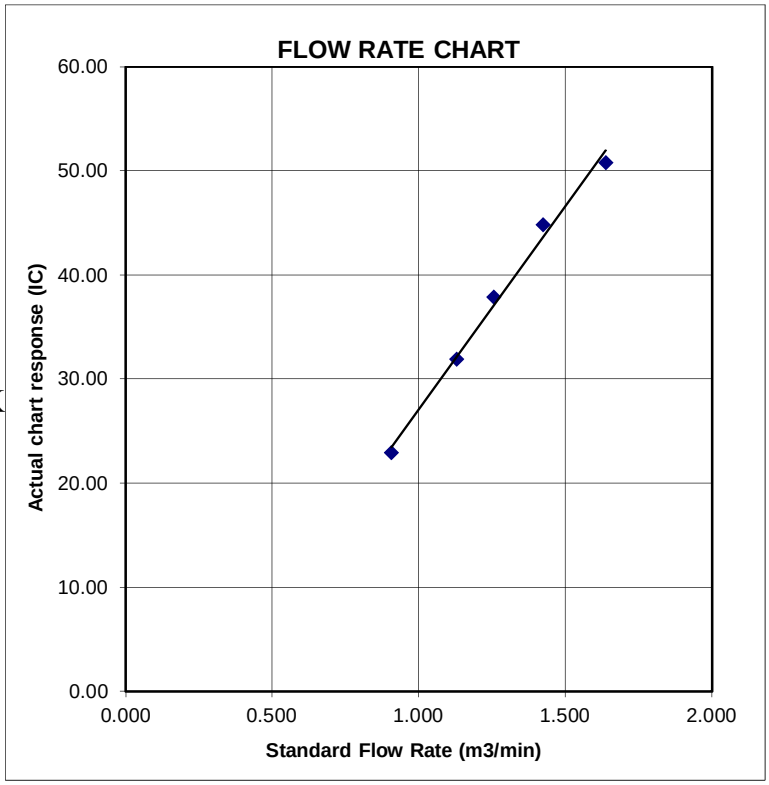
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



Location : Chiu Hin Mansion
Location ID : A1

Date of Calibration: 13-Dec-16
Next Calibration Date: 13-Feb-17
Technician: Mr. Ip Ka Hing

CONDITIONS

Sea Level Pressure (hPa)	1014.5	Corrected Pressure (mm Hg)	760.875
Temperature (°C)	22.9	Temperature (K)	296

CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.00411
Model->	5025A	Qstd Intercept ->	-0.03059
Serial # ->	1612		

CALIBRATION

Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.4	5.4	10.8	1.662	52	52.40	Slope = 37.3070
13	4.2	4.2	8.4	1.467	46	46.35	Intercept = -9.1706
10	3.1	3.1	6.2	1.263	38	38.29	Corr. coeff. = 0.9977
7	2.4	2.4	4.8	1.113	31	31.24	
5	1.5	1.5	3	0.883	24	24.18	

Calculations :

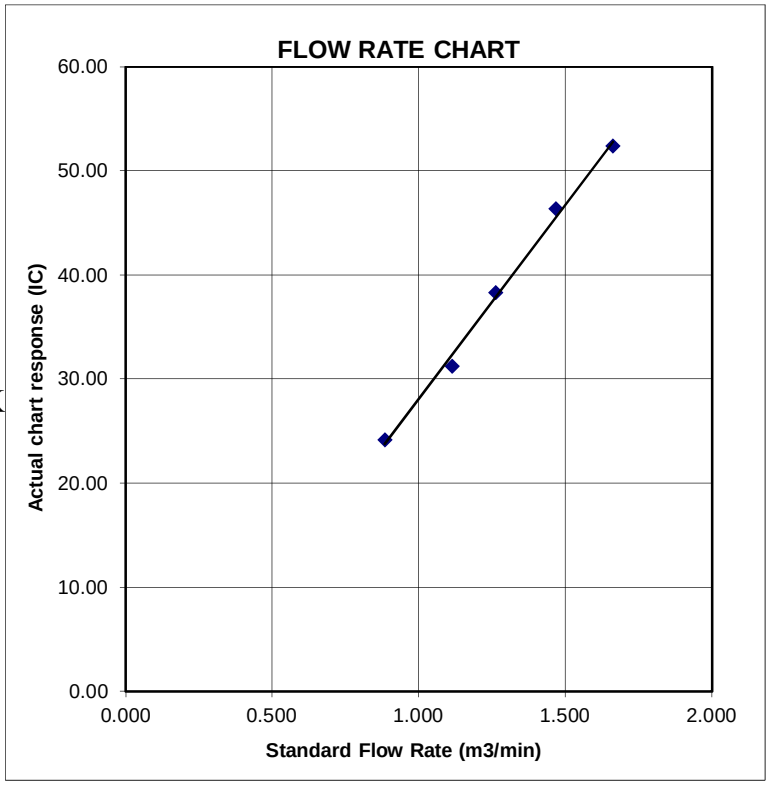
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]
IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

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

For subsequent calculation of sampler flow:

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

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



TISCH Environmental

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

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 14, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
Operator Tisch Orifice I.D. - 1612 Pa (mm) - 745.49

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3770	3.2	2.00
2	NA	NA	1.00	0.9710	6.4	4.00
3	NA	NA	1.00	0.8710	7.8	5.00
4	NA	NA	1.00	0.8310	8.7	5.50
5	NA	NA	1.00	0.6860	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)
0.9866	0.7165	1.4078
0.9824	1.0117	1.9909
0.9804	1.1256	2.2259
0.9793	1.1785	2.3345
0.9741	1.4200	2.8155

Qstd slope (m) = 2.00411
intercept (b) = -0.03059
coefficient (r) = 0.99995

y axis = SQRT[H2O(Pa/760)(298/Ta)]

Va	(x axis) Qa	(y axis)
0.9957	0.7231	0.8896
0.9914	1.0210	1.2581
0.9894	1.1360	1.4066
0.9883	1.1893	1.4753
0.9830	1.4330	1.7792

Qa slope (m) = 1.25494
intercept (b) = -0.01933
coefficient (r) = 0.99995

y axis = SQRT[H2O(Ta/Pa)]

CALCULATIONS

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

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

For subsequent flow rate calculations:

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

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

Certificate of Calibration
校正證書

Certificate No. : C164098
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-0843) Date of Receipt / 收件日期 : 15 July 2016

Description / 儀器名稱 : Sound Level Calibrator (EQ085)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NC-73
Serial No. / 編號 : 10655561
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 27 July 2016

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification & user's specified acceptance criteria. (after adjustment)
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 28 July 2016

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

Certificate of Calibration
校正證書

Certificate No. : C164098
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C163709
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

5.1.1 Before Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	* 93.4	± 0.5	± 0.2

* Out of Mfr's Spec.

5.1.2 After Adjustment

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.5	± 0.2

5.2 Frequency Accuracy

5.2.1 Before Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	User's Spec.	Uncertainty of Measured Value (Hz)
1	0.955	1 kHz ± 6 %	± 1

5.2.2 After Adjustment

UUT Nominal Value (kHz)	Measured Value (kHz)	User's Spec.	Uncertainty of Measured Value (Hz)
1	0.954	1 kHz ± 6 %	± 1

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Certificate of Calibration
校正證書

Certificate No. : C164098
證書編號

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

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

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Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C162125
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-0843) Date of Receipt / 收件日期 : 14 April 2016

Description / 儀器名稱 : Acoustical Calibrator (EQ082)
Manufacturer / 製造商 : Brüel & Kjær
Model No. / 型號 : 4231
Serial No. / 編號 : 2713428
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 22 April 2016

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 25 April 2016

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
輝創工程有限公司 – 校正及檢測實驗所
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Certificate of Calibration
校正證書

Certificate No. : C162125
證書編號

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

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

3. Test equipment :

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C153519
CL281	Multifunction Acoustic Calibrator	PA160023
TST150A	Measuring Amplifier	C161175

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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c/o 香港新界屯門興安里一號青山灣機樓四樓
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輝創工程有限公司
Sun Creation Engineering Limited
Calibration and Testing Laboratory

Certificate of Calibration
校正證書

Certificate No. : C161796
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-0662) Date of Receipt / 收件日期 : 22 March 2016

Description / 儀器名稱 : Sound Level Meter (EQ015)
Manufacturer / 製造商 : Rion
Model No. / 型號 : NL-52
Serial No. / 編號 : 00142581
Supplied By / 委託者 : Action-United Environmental Services and Consulting
Unit A, 20/F., Gold King Industrial Building,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 6 April 2016

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong
Technical Officer

Certified By 核證 : K C Lee
Project Engineer

Date of Issue 簽發日期 : 7 April 2016

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

Certificate of Calibration
校正證書

Certificate No. : C161796
證書編號

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

2. Self-calibration was performed before the test.

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C160077
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.4	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 130	L_A	A	Fast	94.00	1	94.4 (Ref.)
				104.00		104.4
				114.00		114.4

IEC 61672 Class 1 Spec. : ± 0.6 dB per 10 dB step and ± 1.1 dB for overall different.

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 130	L_A	A	Fast	94.00	1	94.4	Ref.
			Slow			94.4	± 0.3

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c/o 香港新界屯門興安里一號青山灣機樓四樓
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Certificate of Calibration
校正證書

Certificate No. : C161796
證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_A	A	Fast	94.00	63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.2	-16.1 ± 1.5
					250 Hz	85.7	-8.6 ± 1.4
					500 Hz	91.1	-3.2 ± 1.4
					1 kHz	94.4	Ref.
					2 kHz	95.6	+1.2 ± 1.6
					4 kHz	95.4	+1.0 ± 1.6
					8 kHz	93.3	-1.1 (+2.1 ; -3.1)
					12.5 kHz	89.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Function	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 130	L_C	C	Fast	94.00	63 Hz	93.5	-0.8 ± 1.5
					125 Hz	94.2	-0.2 ± 1.5
					250 Hz	94.3	0.0 ± 1.4
					500 Hz	94.4	0.0 ± 1.4
					1 kHz	94.4	Ref.
					2 kHz	94.2	-0.2 ± 1.6
					4 kHz	93.6	-0.8 ± 1.6
					8 kHz	91.4	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.0	-6.2 (+3.0 ; -6.0)

Remarks : - UUT Microphone Model No. : UC-59 & S/N : 06015

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB :	63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)

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

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

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

Certificate of Calibration
校正證書

Certificate No. : C162177
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC16-0843) Date of Receipt / 收件日期 : 14 April 2016

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

TEST CONDITIONS / 測試條件

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

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 25 April 2016

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.
The results do not exceed manufacturer's specification.
The results are detailed in the subsequent page(s).

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

Tested By 測試 : H T Wong, Technical Officer

Certified By 核證 : K C Lee, Project Engineer

Date of Issue 簽發日期 : 27 April 2016

Sun Creation Engineering Limited – Calibration & Testing Laboratory
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
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Certificate of Calibration
校正證書

Certificate No. : C162177
證書編號

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

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

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

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C160077
CL281	Multifunction Acoustic Calibrator	PA160023

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

6.1.1.1 Before Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.2

6.1.1.2 After Self-calibration

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L_{AFP}	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

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

Certificate of Calibration
校正證書

Certificate No. : C162177
證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L_{AFP}	A	F	94.00	1	94.0	Ref.
	L_{ASP}		S			94.0	± 0.1
	L_{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L_{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L_{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L_{ASP}		S		Continuous	106.0	Ref.
	L_{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{AFP}	A	F	94.00	31.5 Hz	55.1	-39.4 ± 1.5
					63 Hz	67.9	-26.2 ± 1.5
					125 Hz	77.9	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	91.0	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

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Certificate of Calibration
校正證書

Certificate No. : C162177
證書編號

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L_{CFP}	C	F	94.00	31.5 Hz	91.5	-3.0 ± 1.5
					63 Hz	93.4	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					250 Hz	94.1	0.0 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.1	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	92.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.9	-6.2 (+3.0 ; -6.0)

6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)		
30 - 110	L_{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						$1/10^2$		90	89.9	± 0.5
			60 sec.			$1/10^3$		80	79.2	± 1.0
			5 min.			$1/10^4$		70	69.2	± 1.0

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

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

- Uncertainties of Applied Value :

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

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory
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輝創工程有限公司 – 校正及檢測實驗所
c/o 香港新界屯門興安里一號青山灣機樓四樓
Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

Appendix E

HOKLAS-Accreditation Certificate of the Testing Laboratory

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

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

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

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

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

Environmental Testing
環境測試

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

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

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

Registration Number : HOKLAS 066
註冊號碼：

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

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

L 000552

Appendix F

Event and Action Plan

Event and Action Plan for Construction Noise

Event	Action			
	ET	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and Contractor. 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
Action Level				
Exceedance for one sample	1. Identify source; 2. If valid, inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and EPD; 3. Repeat measurements to 1. confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial action required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervisor implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial Measure properly implemented.	1. Submit proposals for remedial action to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.
Limit Level				
Exceedance for one sample	1. Identify source; 2. Inform ER and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and the Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify sources; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and 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 failure in writing; 2. Notify Contractor; 3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures 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 notification; 3. Implement the agreed proposals; 4. 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.

Appendix G

Monitoring Schedule

Monitoring Schedule in the Reporting Period – December 2016

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

✓	Monitoring Day
	Sunday or Public Holiday

Air Quality Monitoring Location

A1 - balcony at 1/F of Chiu Hin Mansion

Construction Noise Monitoring Location:

N1 - 2/F floor of Hennessey Building

N2 - balcony at 1/F of Chiu Hin Mansion

Monitoring Schedule for the Coming Month – January 2017

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

✓	Monitoring Day
	Sunday or Public Holiday

Remarks:

Designated Location for Impact noise measurement:

- N1 Hennessey Building; and
- N2 Chiu Hin Mansion

Designated Location for Impact air quality monitoring

- A1 Chiu Hin Mansion

Appendix H

Database of Monitoring Results

Result of 24-hour TSP Monitoring

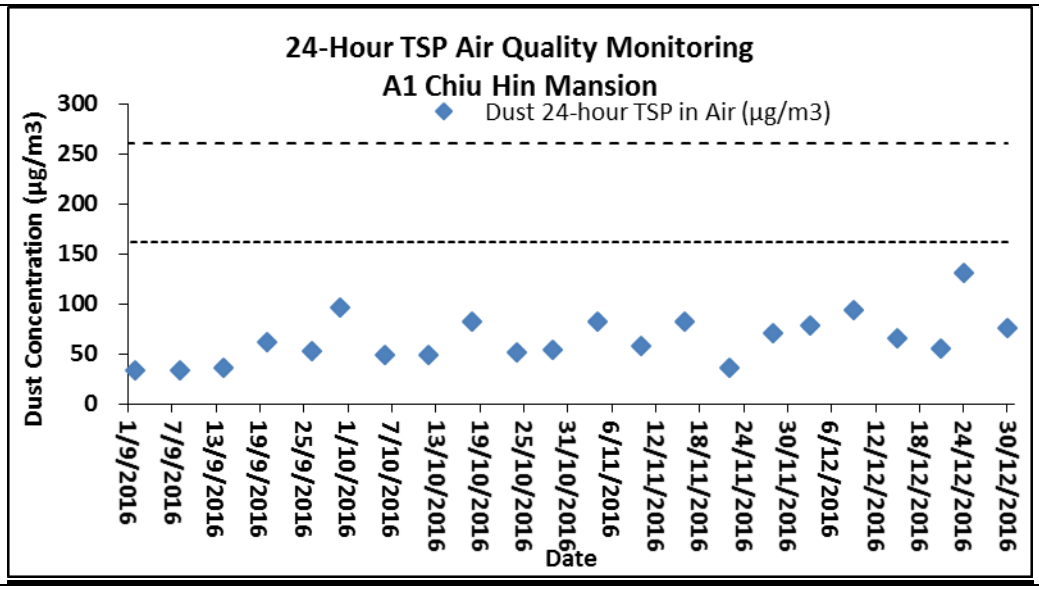
Location: A1 (balcony at 1/F of Chiu Hin Mansion)

Date	Sample Number	Elapsed Time			Chart Reading			Ave. Temp. (℃)	Standard			Filter Weight (g)		Weight Dust Collected (g)	Dust 24-hour TSP in Air (μg/m³)
		Initial	Final	Actual (min)	Min	Max	Ave		Ave. Press. (hPa)	Flow Rate (m³/min)	Air Volume (std m³)	Initial	Final		
3-Dec-16	20239	18734.96	18759.04	1444.80	40	40	40.0	17.8	1020.9	1.35	1946	2.8443	2.9962	0.1519	78
9-Dec-16	20254	18759.04	18783.16	1447.20	41	41	41.0	19.4	1015.4	1.37	1978	2.8408	3.0250	0.1842	93
15-Dec-16	20302	18783.16	18807.27	1446.60	40	40	40.0	18	1022.6	1.34	1932	2.8201	2.9459	0.1258	65
21-Dec-16	20347	18807.27	18831.37	1446.00	39	40	39.5	21.9	1016.8	1.31	1897	2.8121	2.9166	0.1045	55
24-Dec-16	29942	18831.37	18855.27	1434.00	39	41	40.0	16.9	1020.5	1.34	1917	2.8008	3.0507	0.2499	131
30-Dec-16	20413	18855.27	18879.36	1445.40	40	40	40.0	16.6	1024.2	1.34	1936	2.8255	2.9731	0.1476	76

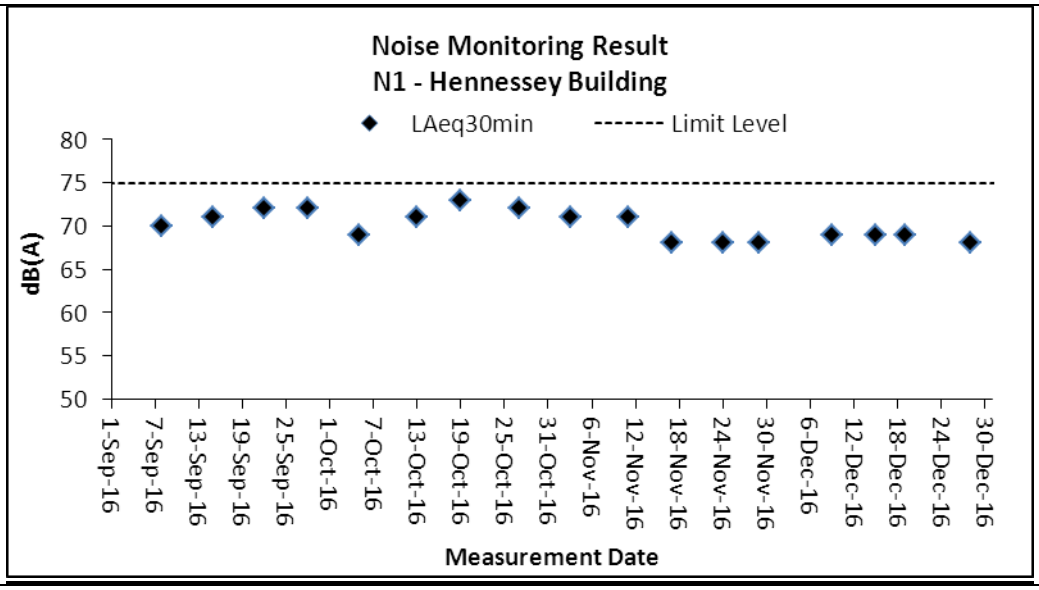
Appendix I

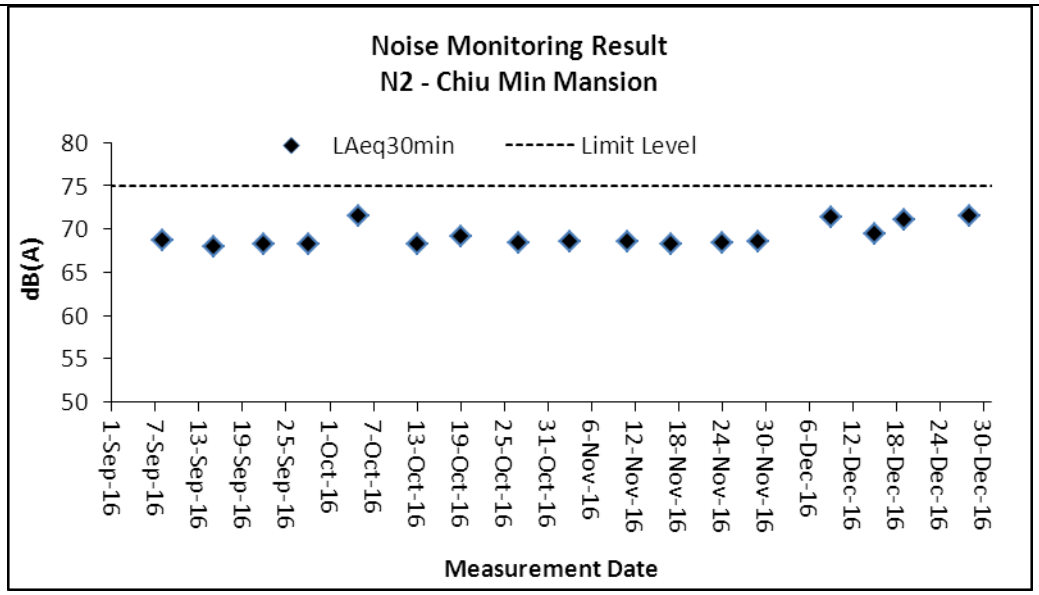
Graphical Plots

Air Quality



Construction Noise





Appendix J

Meteorological Information

Meteorological Data downloaded from HKO in the Reporting Period							
Date		Weather	Total Rainfall (mm)	Kings Park Station			
				Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Dec-16	Thu	Fine and dry. Moderate northerly winds.	0	20.1	6	58.7	NE
2-Dec-16	Fri	Fine and dry. Moderate northerly winds.	0	20.5	6.1	66.7	E/NE
3-Dec-16	Sat	Mainly fine and dry. Moderate northeasterly winds.	0	19.7	4.2	75	SE
4-Dec-16	Sun	Fine and dry. Moderate northerly winds.	Trace	23.3	6.4	86	SE
5-Dec-16	Mon	Fine and dry. Moderate northerly winds.	0	24.3	5.2	80	E/SE
6-Dec-16	Tue	Mainly fine and dry. Moderate northeasterly winds.	Trace	20.8	13	52.5	NE
7-Dec-16	Wed	Mainly fine and dry. Moderate northeasterly winds.	Trace	20.2	5.6	53.7	N/NE
8-Dec-16	Thu	Fine and dry. Light to moderate northeasterly winds.	0	19.6	7	54.2	SE
9-Dec-16	Fri	Sunny periods. Moderate easterly winds.	0	19.6	9	57.2	E/SE
10-Dec-16	Sat	Sunny periods. Moderate easterly winds.	0	21.3	8	63.5	SE
11-Dec-16	Sun	Sunny periods. Moderate easterly winds.	Trace	20.5	17.1	71.7	E/SE
12-Dec-16	Mon	Sunny periods. Moderate easterly winds.	Trace	21.6	8.7	70.7	E/SE
13-Dec-16	Tue	Sunny periods. Moderate easterly winds.	Trace	23.7	4.5	66	E/SE
14-Dec-16	Wed	Sunny periods. Moderate easterly winds.	Trace	20.8	10.8	56.7	N/NE
15-Dec-16	Thu	Sunny periods. Moderate easterly winds.	0	17.1	10.5	58	N/NE
16-Dec-16	Fri	Mainly fine. Moderate easterly winds.	0	14.9	9	53.7	N/NE
17-Dec-16	Sat	Mainly fine. Moderate easterly winds.	0	15.9	8	51	SE
18-Dec-16	Sun	Mainly fine. Moderate easterly winds.	0	19.4	8	71.5	E/SE
19-Dec-16	Mon	Mainly fine. Moderate easterly winds.	0	20.8	9.5	68	E/SE
20-Dec-16	Tue	Sunny periods. Moderate easterly winds.	0	22	12	78	E/SE
21-Dec-16	Wed	Mainly fine. Moderate easterly winds.	2.8	21.4	9	86.7	E/SE
22-Dec-16	Thu	Sunny periods. Moderate easterly winds.	0.2	22.5	7.6	72	NE
23-Dec-16	Fri	Moderate easterly winds, strengthening gradually.	Trace	20.7	8	66.7	E/SE
24-Dec-16	Sat	Mainly fine. Moderate easterly winds.	3.7	17.2	9	68.0	N/NE
25-Dec-16	Sun	Mainly fine. Moderate easterly winds.	Trace	19.1	7	77.0	E/SE
26-Dec-16	Mon	Sunny periods. Moderate easterly winds.	0	21.8	8	65	N/NE
27-Dec-16	Tue	Mainly fine. Moderate easterly winds.	0	16.7	16.4	48	N/NE
28-Dec-16	Wed	Sunny periods. Moderate easterly winds.	0	12.8	7.7	48.5	N/NE
29-Dec-16	Thu	Moderate easterly winds, strengthening gradually.	0	15.4	9.5	48.2	N/NE
30-Dec-16	Fri	Mainly fine. Moderate easterly winds.	0	16.5	7.5	50	NE
31-Dec-16	Sat	Mainly fine. Moderate easterly winds.	0	18.5	6	60	NE

Appendix K

Monthly Summary Waste Flow Table

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

Monthly Summary Waste Flow Table for 2016

Name of Employer: MTR Corporation Limited																Contract No.: C65931-13C				
Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of Non-Inert C&D Wastes Generated Monthly					Actual Quantities of Non-Inert C&D Wastes Generated Monthly				
	Total Quantity Generated	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Slurry	Rock	Soil	Reused in this Project	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m^3)	(in m3/ Litre)	(in m^3)	(in ton)	(in ton)	(in ton)	(in Litre)	(in ton)
Jan	45.59	0	0	0	0	0	0	0	15.59	0	0	0	0	0	30	0	0	0	0	0
Feb	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0
Mar	51.85	0	0	0	0	0	0	0	36.85	0	0	0	0	0	15	0	0	0	0	0
Apr	38.99	0	0	0	0	0	0	0	33.99	0	0	0	0	0	5	0	0	0	1.2	0
May	106.71	0	0	0	0	0	0	0	91.71	0	0	0	0	0	15	0	0	0	0	0
Jun	914.81	0	0	0	0	0	0	0	909.81	0	0	0	0	0	5	0	0	0	0	0
Jul	379.11	0	0	0	0	0	0	0	364.11	0	0	0	0	0	15	0	0	0	0	0
Aug	123.77	0	0	0	0	0	0	0	123.77	0	0	0	0	0	0	0	0	0	0	0
Sep	144.55	0	0	0	0	0	0	0	134.55	0	0	0	0	0	10	0	0	0	0	0
Oct	264.95	0	0	0	0	0	0	0	264.95	0	0	0	0	0	0	0	0	0	0	0
Nov	625.15	0	0	0	0	0	0	0	615.15	0	0	0	0	0	10	0	0	0	0	0
Dec	1041	0	0	0	0	0	0	0	1036	0	0	0	0	0	5	0	0	0	0	0
Total	3746.48	0	0	0	0	0	0	0	3626.48	0	0	0	0	0	120	0	0	0	1.2	0

Appendix L

Implementation Schedule for Environmental Mitigation Measures (ISEMM)

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
NOISE IMPACT						
S.5.1.1	**Use of quieter plant**	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance
S.5.1.1	**Use of noise enclosure and movable barrier** • movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME; • noise enclosure can achieve 15dB(A) reduction for PME; • 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; • 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; • Barrier material of surface mass in excess of 7kg/m^2 shall be required to achieve the maximum screening effect (and minimum 10kg/m^2 for noise enclosure); • The length of barrier should generally be at least five times greater than its height and the minimum height of a barrier should be such that no part of the noise source will be visible from the noise sensitive receiver being protected.	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93, Noise Control Ordinance and EIAO Guidance Note NO. 9/2010
S.5.1.1	**General Construction Noise Control Measures** • 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; • The statutory and non-statutory requirements and guidelines shall be complied with; • Approval for the method of working, equipment and noise mitigation measures intended to be used at the site shall be granted from the Project Engineer before commencing any work;	To minimize construction noise emissions	Contractor	Work site	Construction Stage	ProPECC PN2/93 and Noise Control Ordinance

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

Project Profile Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Parties	Location of the measure	When to implement the measure	Relevant requirements or standards for the measure to achieve
WATER QUALITY IMPACT						
S.5.1.3	**Construction Water Quality Impact Measures** • Collection of wastewater into a sedimentation tank for treatment before discharge into the public drainage system; • 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; • Installation of wheel washing facilities to minimize muddy runoff; • Regular maintenance and inspection of drainage systems and erosion control and silt removal facilities; • Management and monitoring of sewage treatment facilities (if any); • 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; • Coverage of stockpiles of C&D materials (if any) during rainstorms; and • Site toilet facilities, if needed, should be chemical toilets or should have the sewage discharge directed to a foul sewer.	To reduce water quality impact induced by the construction work	Contractor	Work site	Construction Stage	ProPECC PN1/94; Water Pollution Control Ordinance
WASTE MANAGEMENT						
S.5.1.4	**Construction Waste Management Measures** • Scrap metals or abandoned equipment should be recycled if possible; • Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner; • The Contractor should adopt a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill. Independent audits of the Contractor and resident site staff will be undertaken to ensure that the correct procedures are being followed; • Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes; and	To adopt waste management measures in the way of avoiding, minimizing, reusing and recycling so as to reduce waste generation	Contractor	Work site	Construction Stage	Waste Disposal Ordinance (Cap. 354); Waste Disposal (Chemical Waste) (General) Regulation; DEVB TCW No. 6/2010; ETWB TCW No. 19/2005.

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