

AUES PROJECT NO. TCS/00704/14

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

9th Environmental Monitoring and Audit (EM&A) Monthly Report – May 2015

PREPARED FOR KADEN CONSTRUCTION LIMITED

Quality Index

Date	Reference No.	Prepared By	Approved By
11 May 2015	11 May 2015 TCS00704/14/600/R0052v2		Shum
			T.W. Tam
		Nicola Hon	Environmental Team
		Environmental Consultant	Leader

Version	Date	Description
1	9 May 2015	First Submission
2	11 May 2015	Amended against the IEC's comments on 10 May 2015



AECOM 38/F Metroplaza Tower 1 223 Hing Fong Road Kwai Fong, Hong Kong 香港葵芳興芳路223號 新都會廣場第一辦公大樓38樓 www.aecom.com +852 2428 8866 tel +852 2428 9922 fax

12 June 2015

By Email and Post

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

Our Ref.:

40032976/441587

Attention: Mr. Kenneth Chow / Environmental Engineer II

Dear Sir,

Consultancy Agreement A130-13
Independent Environmental Checker for CRS and LTS
LTS - Verification for Ninth Monthly Environmental Monitoring and
Audit (EM&A) Report (May 2015) (Report No.: TCS00704/14/600/R0052v2)

We refer to the Ninth Monthly EM&A Report (May 2015) received under cover of the email from the Environmental Team, AUES, dated on 9 June 2015.

Further to our comments provided on 10 June 2015 and subsequent revision of the Report by AUES on 11 June 2015, we have no further comment and have verified the captioned report (Report No.: TCS00704/14/600/R0052v2).

Should you have any queries, please feel free to contact the undersigned at 2410 3750 or our Dr. Alex Cheung at 2410 3796.

Yours faithfully

AECOM Consulting Services Ltd

Rodney Ip

Independent Environmental Checker

ACWH/wwsc

cc Kaden Construction Limited

AUES

(Attn.: Mr. Ronald Fung) via email

(Attn.: Ms. Nicola Hon)

via email



EXECUTIVE SUMMARY

ES01 This is the 9th monthly EM&A Report presenting the monitoring results and inspection findings for the period from 1 to 31 May 2015 (hereinafter 'the Reporting Period').

SUMMARY OF ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

		Reporting Period		
Environmental Aspect	Environmental Monitoring Parameters / Inspection	Number of Monitoring Location	Total Occasions	
Air Quality	24-hour TSP	1	5	
Construction Noise	L _{eq(30min)} Daytime	2	8	
Site Inspection /	Joint with ET, the Contractor and RE		4	
Audit	Joint with IEC, ET, the Contractor and RE		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	Manitaning	Action Level		Event & Action		
Environmental Aspect	Monitoring Parameters			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 7, 14, 21 and 28 May 2015 and the IEC was joined the site inspection on 21 May 2015. No non-compliance was observed during the site inspection.

FUTURE KEY ISSUES

- ES08 Construction noise is the key environmental issue during construction work of the Project as there are residential buildings nearby. Noise mitigation measures should be fully implemented in accordance with the EM&A requirement.
- ES09 Special attention should be paid on the potential construction dust impact as the construction site is located near the residential area. The Contractor should fully implement the construction dust mitigation measures properly.
- ES010 The Contractor should prevent muddy water and other water pollutants via site surface water runoff get into public areas and implement water quality mitigation measures properly. Any discharge water should be strictly complied with wastewater discharge license requirement.



TABLE OF CONTENTS

1	INTRODUCTION PROJECT BACKGROUND REPORT STRUCTURE	1 1 1
2	PROJECT ORGANIZATION AND SUBMISSION PROJECT ORGANIZATION SUMMARY OF ENVIRONMENTAL SUBMISSIONS	2 2 3
3	ENVIRONMENTAL IMPACT MONITORING REQUIREMENT MONITORING PARAMETERS MONITORING LOCATIONS MONITORING FREQUENCY AND PERIOD MONITORING EQUIPMENT MONITORING METHODOLOGY DERIVATION OF ACTION/LIMIT (A/L) LEVELS DATA MANAGEMENT AND DATA QA/QC CONTROL	5 5 5 6 7 8 8
4	MONITORING RESULTS 24-HOUR TSP AIR QUALITY MONITORING RESULTS NOISE MONITORING RESULTS	9 9
5	WASTE MANAGEMENT GENERAL WASTE MANAGEMENT RECORDS OF WASTE QUANTITIES	11 11 11
6	SITE INSPECTION FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH	12 12
7	ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION	13 13
8	IMPLEMENTATION STATUS OF MITIGATION MEASURES GENERAL REQUIREMENTS KEY ISSUES FOR THE COMING MONTH	14 14 15
9	CONCLUSIONS AND RECOMMENDATIONS CONCLUSION RECOMMENDATIONS	16 16 16
LIST OF	<u>FTABLES</u>	
TABLE 2-	SUBMISSION/SET-UP STATUS OF THE EP REQUIREMENTS	
TABLE 2-		
TABLE 3-		
TABLE 4-	SUMMARY OF 24-HOUR TSP MONITORING RESULTS – A1	
TABLE 4-	Noise Monitoring Results of N1 (2/F floor of Hennessey Building), (dB(A))	
TABLE 4-		
TABLE 4-	, , ,	
TABLE 5-		
TABLE 5-	SUMMARY OF QUANTITIES OF NON-INERT C&D WASTES	

Contract No. MTRC6593-13C – Wan Chai Station Lee Tung Street Subway 9th Environmental Monitoring and Audit Monthly Report – May 2015



TABLE 6-1	SITE OBSERVATIONS
TABLE 7-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 7-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 7-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 8-1	ENVIRONMENTAL MITIGATION MEASURES

LIST OF APPENDICES

LIST OF APP	ENDICES
APPENDIX A	PROJECT SITE LAYOUT PLAN
APPENDIX B	ORGANIZATION OF THE PROJECT AND MASTER CONSTRUCTION PROGRAMME
APPENDIX C	MONITORING LOCATIONS
APPENDIX D	CALIBRATION CERTIFICATE OF MONITORING EQUIPMENT
APPENDIX E	HOKLAS-ACCREDITATION CERTIFICATE OF THE TESTING LABORATORY
APPENDIX F	EVENT AND ACTION PLAN
APPENDIX G	MONITORING SCHEDULE
APPENDIX H	DATABASE OF MONITORING RESULTS
APPENDIX I	GRAPHICAL PLOTS
APPENDIX J	METEOROLOGICAL INFORMATION
APPENDIX K	MONTHLY SUMMARY WASTE FLOW TABLE
APPENDIX L	IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)



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 9th monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from 1 to 31 May 2015.

REPORT STRUCTURE

- 1.07 This Report is structured into the following sections:-
 - Section 1 Introduction
 - **Section 2** Project Organization
 - Section 3 Environmental Impact Monitoring Requirement
 - **Section 4** Monitoring Results
 - Section 5 Waste Management
 - **Section 6** Site Inspections
 - Section 7 Environmental Complaint and Non-Compliance
 - **Section 8** Implementation Status of Mitigation Measures
 - Section 9 Conclusions and Recommendations



2 PROJECT ORGANIZATION AND SUBMISSION

PROJECT ORGANIZATION

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

MTR Corporation Limited (MTRCL)

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

Environmental Protection Department (EPD)

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

Resident Engineer (RE)

- 2.04 The RE is responsible for overseeing the construction works and for ensuring that the works are undertaken by the Contractor in accordance with the specification and contract requirements. The duties and responsibilities of the ER with respect to EM&A are:
 - Monitor the Contractor's compliance with Contract Specifications, including the effective implementation and operation of the environmental mitigation measures;
 - Inform the Contractor when action is required to reduce impacts in accordance with the Event and Action Plans:
 - Participate in site inspections undertaken by the ET; and
 - Co-operate with the ET in providing all the necessary information and assistance for completion of the complaint investigation works.

Independent Environmental Checker (IEC)

- 2.05 The IEC should advise the ET and RE on environmental issues related to the project. The IEC should audit from an independent viewpoint on the environmental performance during the construction of the project. The IEC should be a person who has relevant professional qualifications in environmental control and at least 7 years' experience in EM&A and environmental management. The duties and responsibilities of the IEC are:
 - Review and audit in an independent, objective and professional manner in all aspects of the EM&A programme;
 - Validate and confirm the accuracy of monitoring results, appropriateness of monitoring equipment, monitoring locations with reference to the locations of the nearby sensitive receivers, and monitoring procedures;
 - Carry out random sample check and audit on monitoring data and sampling procedures, etc;
 - Conduct random site inspection;
 - Review the effectiveness of environmental mitigation measures and project environmental performance;
 - On an as-need basis, verify and certify the environmental acceptability of the construction methodology (both temporary and permanent works), relevant design plans and submissions under the environmental permit. Where necessary, the IEC should agree in consultation with the ET and the Contractor least impact alternative;
 - Check complaint cases and the effectiveness of corrective measures;
 - Verify EM&A report certified by the ET Leader; and
 - Feedback audit results to RE/ET according to the Event/Action Plan.

Environmental Team (ET)

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



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

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

The Contractor

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

SUMMARY OF ENVIRONMENTAL SUBMISSIONS

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

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

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

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

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

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



Item	Description	License/Permit Status
5	Construction Noise Permit under Noise Control	GW-RS0290-15 obtained on 18
	Ordinance	March 2015
		Valid from 19:00 of 19 March 2015
		to 07:00 of 11 September 2015
		GW-RS1453-14 obtained on 24
		December 2014
		Valid from 19:00 of 27 December
		2014 to 06:00 of 23 June 2015
		GW-RS1249-14 obtained on 10
		November 2014
		Valid from 01:30 of 17 November
		2014 to 04:30 of 16 May 2015

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*.
 - Excavation works on tram tracks.
 - Concreting
 - Sheet piling on Johnston Road North Footpath.



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:

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	Hennessey Building	N1	2/F floor of Hennessey Building	NSR facing to the Project site
Noise	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.

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



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-5028A			
1- hour TSP				
	TSI Model 8520 DustTrak Aerosol Monitor / Aerocet 531			
Portable Dust Meter	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 or Rion NL-14
Calibrator	Rion NC-73 / B&K Type 4231
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 Lev	vel (μg /m³)	Limit Level (µg/m³)		
Monitoring Station	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

Manitaning Station	0700-1900 hours on normal weekdays			
Monitoring Station	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.
- 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, **5** 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/m³)	Action Level	Limit Level
6-May-15	43		
12-May-15	87		
18-May-18	52		
23-May-15	31	162	260
29-May-15	72		
Average	57		
(Range)	(31-87)		

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	$ m L_{eq30min}$
5-May-15	15:43	74.8	73.5	74.5	73.5	74.9	72.5	74
12-May-15	13:01	73.8	72.1	72.5	71.0	72.1	72.2	72
19-May-15	13:30	67.0	71.0	70.6	66.7	68.5	68.4	69
26-May-15	10:42	75.6	73.3	72.5	73.6	74.5	73.2	74
Limit L Construct		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	$ m L_{eq30min}$
5-May-15	16:20	70.3	77.1	74.5	71.3	71.7	67.6	73
12-May-15	13:39	74.2	73.7	73.7	74.4	74.4	72.4	74
19-May-15	14:07	73.5	73.0	73.6	72.0	73.0	73.2	73
26-May-15	11:15	76.5	75.5	77.7	75.6	73.5	74.0	76
Limit L Construct		75 B(A)						

4.05 Referred to above tables, no noise measurement result is higher than 75dB(A) was recorded at N1, but one occasion of noise measurement result higher than 75dB(A) were recorded at N2. As reviewed the baseline noise monitoring data of N2, high background noise is already exist. In order to find the actual construction noise, the exceeded noise measurement results were adjusted by the baseline monitoring data show in *Table 4-4*.



Table 4-4 Adjustment of Construction Noise Level for N2, dB(A)

Date	Time Period	Leq30min Measurement Record at the Receiver	Average Background Noise at the Receiver	Actual Construction Noise of the Project
26-May-15	11:15	76	71 (11:00 – 12:00)	74

Equation of Adjustment: $C = 10\log(10^{A/10} - 10^{B/10})$

Whore

- A is noise level measurement at the receiver position;
- B is average background noise at the measurement time at the receiver position; and
- C is actual construction noise.
- 4.06 After the correction, the construction noise of the Project were indicated not exceed 75dB. No Notifications of Exceedances (NOEs) therefore was issued to the RE, IEC and the Main Contractor.
- 4.07 Furthermore, there is no noise complaint (Action Level exceedance) received by the MTRC and Contractor or EPD in the Reporting Period.
- 4.08 The meteorological data during the impact monitoring days are shown in *Appendix J*.



5 WASTE MANAGEMENT

GENERAL WASTE MANAGEMENT

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

RECORDS OF WASTE QUANTITIES

- 5.02 All types of waste arising from the construction work are classified into the following:
 - Construction & Demolition (C&D) Material;
 - Chemical Waste;
 - General Refuse; and
 - Excavated Soil.
- 5.03 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 5-1* and *5-2* and the Monthly Summary Waste Flow Table is shown in *Appendix K*.

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

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

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

Type of Waste	Quantity	Disposal Location
Recycled Metal (m ³)	0	-
Recycled Paper / Cardboard Packing (m ³)	0	-
Recycled Plastic (m ³)	0	-
Chemical Wastes (m ³ /L)	0	-
General Refuses (m ³)	0.14593	SENT Landfill

- 5.04 In the Reporting Period, effluent generated from the Project was discharged in accordance with the Wastewater Discharge License.
- 5.05 Moreover, it is reminded that C&D materials would be reused on-site as far as practicable.



6 SITE INSPECTION

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

FINDINGS / DEFICIENCIES DURING THE REPORTING MONTH

- 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 **7**, **14**, **21** and **28 May 2015** and the IEC was joined the site inspection on **21 May 2015**.
- 6.03 No non-compliance was noted. However, three (3) observations and one (1) reminder were recorded by the ET. The findings / deficiencies observed during the weekly site inspections are listed in *Table 6-1*.

Table 6-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
7 May 2015	No specific findings were observed.	NA
14 May 2015	• Uncovered sand stockpile was observed, the Contractor should cover the stockpile with tarpaulin sheet properly to minimize fugitive dust.	The sand stockpile has been removed.
21 May 2015	 The protective fence of the retained tree was damaged after rainstorm. The Contractor should repair the fence a.s.a.p. Oil drums without drip tray were observed, the Contractor should remove the oil drums or place drip tray underneath to prevent land contamination. A scratch due to machinery movement was observed on the retained tree, the Contractor was reminded to arrange tree specialist to check the condition of the 	 The protective fence of the retained tree was repaired. The oil drums has disposal at before site inspection 4 June 2015. Only Reminder
28 May 2015	tree. No specific findings were observed.	NA

- 6.04 In the Reporting Period, the Contractor was reminded regular checking and maintenance wastewater treatment facilities ensure compliance with the currently Discharge License stipulation.
- 6.05 No site inspection was undertaken by external parties i.e. EPD in this Reporting Month.



7 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

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

Table 7-1 Statistical Summary of Environmental Complaints

	Environmental Complaint Statistics					
Reporting Period	Engage and Computations		Complaint Nature			
	Frequency Cumulative	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 30 Apr 2015	0	0	NA	NA	NA	NA
1–31 May 2015	0	0	NA	NA	NA	NA

Table 7-2 Statistical Summary of Environmental Summons

		Environme	ental Sumn	nons Statis	tics	
Reporting Period	Evenuenav	Cumulativa		Complain	nt Nature	
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 30 Apr 2015	0	0	NA	NA	NA	NA
1–31 May 2015	0	0	NA	NA	NA	NA

Table 7-3 Statistical Summary of Environmental Prosecution

		Environme	ntal Prosec	ution Stati	stics	
Reporting Period	Evaguanav	Cumulativa		Complair	nt Nature	
	Frequency	Cumulative	Air	Noise	Water	Others
28 Aug 2014 – 30 Apr 2015	0	0	NA	NA	NA	NA
1–31 May 2015	0	0	NA	NA	NA	NA



8 IMPLEMENTATION STATUS OF MITIGATION MEASURES

GENERAL REQUIREMENTS

- 8.01 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the EMAP covered the issues of dust, noise, water and waste and they are summarized presented in *Appendix L*.
- 8.02 The Works under the Project shall be implementing the required environmental mitigation measures according to the EMAP as subject to the site condition. Environmental mitigation measures generally to be implemented by the Contractor is listed in *Table 8-1*.

Table 8-1 Environmental Mitigation Measures

	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 •	Wastewater were appropriately treated by treatment facilities;
Quality •	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.
	y

TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

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



- Bay 3A RC
- Bay 3B RC
- Reinstatement of Southern Basketball Court
- Excavation on tram tracks & Tram Track RC Deck
- Sheet Piling of Stages 2 ELS
- Grout Curtain of Stage 2 ELS
- Temp. Traffic Deck of Stage 2 ELS
- Closure of Northern Basketball Court and hoarding

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 9th monthly EM&A report presenting the monitoring results and inspection findings in the Reporting Period from 1 to 31 April 2015.
- 9.02 In the Reporting Period, **5** 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, a total of **8** occasions of noise measurement was conducted at N1 and N2. No noise measurement result is higher than 75dB(A) was recorded at N1, but one occasion of noise measurement result higher than 75dB(A) were recorded at N2. As reviewed the baseline noise monitoring data of N2, high background noise is already exist. In order to find the actual construction noise, the exceeded noise measurement results were adjusted by the baseline monitoring data. After correction, the construction noise levels of the Project were indicated below 75dB(A). No Notifications of Exceedances (NOEs) or the associated corrective actions were therefore issued. Furthermore, no noise complaint (which is an Action Level exceedance) was received.
- 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 7, 14, 21 and 28 May 2015 and the IEC was joined the site inspection 21 May 2015. No non-compliance was noted but three (3) observations and one (1) reminder were recorded by the ET.
- 9.06 In the Reporting Period, no site inspection was undertaken by external parties i.e. EPD.

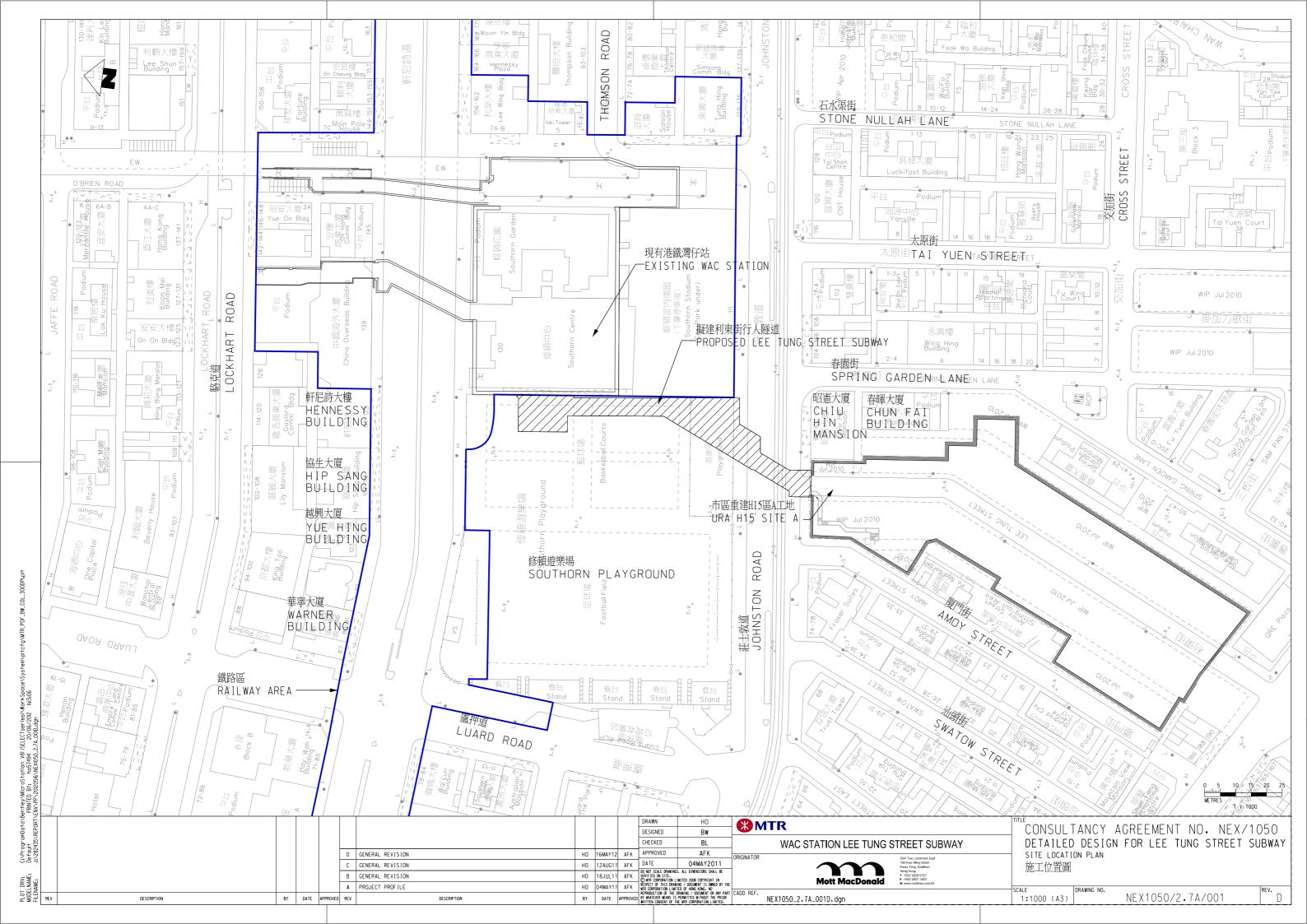
RECOMMENDATIONS

- 9.07 Construction noise is the key environmental issue during construction work of the Project as there are residential buildings nearby. Noise mitigation measures should be fully implemented in accordance with the EM&A requirement.
- 9.08 Also, special attention should be paid on the potential construction dust impact as the construction site is located near the residential area. The Contractor should fully implement the construction dust mitigation measures properly.
- 9.09 The Contractor should also prevent muddy water and other water pollutants via site surface water runoff get into public areas. Any discharge water should be strictly complied with wastewater discharge license requirement. As a reminder, water quality mitigation measures should be properly implemented in accordance with the EM&A requirement.
- 9.10 As a reminder, the Contractor should be regular checking and maintenance wastewater treatment facilities ensure compliance with the currently Discharge License stipulation. A warning sign should be provided all the retained trees as remind the workers prevent scratch the trees. In addition, mosquito control should be kept to prevent mosquito breeding on site.



Appendix A

Project Site Layout Plan

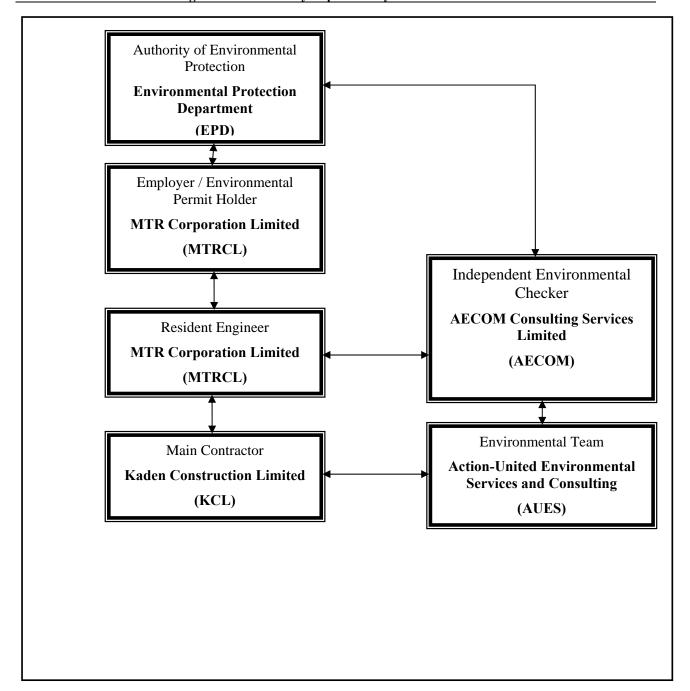




Appendix B

Organization of the Project and Master Construction Programme







Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
MTRCL	Resident Engineer	Mr. Raymond Lee	3547 0002	3547 0090
AECOM	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
KCL	Project Manager	Mr. Vincent, Kwan Chun Yin	9833 1313	2770 4278
KCL	Site Agent	Mr. Chan Kam Chuen	6462 8910	2770 4278
KCL	Environmental Officer	Ms. Ricci Poon Wai Tin	9533 1115	2770 4278
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Mr. Ben Tam	2959 6059	2959 6079

Legend:

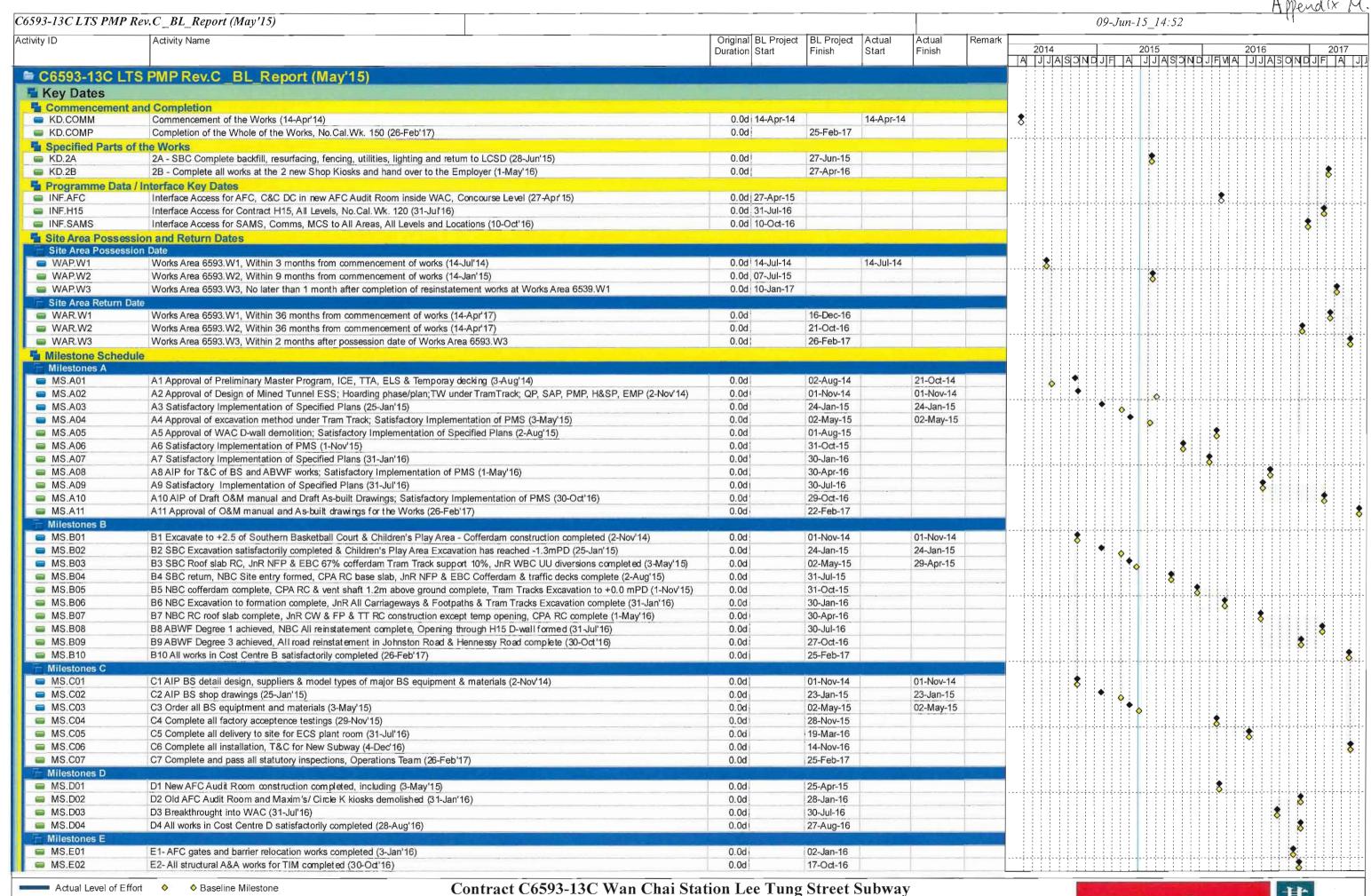
MTRCL (Employer) – MTR Corporation Limited

MTRCL (Resident Engineer) – MTR Corporation Limited

KCL (Main Contractor) – Kaden Construction Limited

AECOM (IEC) – AECOM Consulting Services Limited

AUES (ET) – Action-United Environmental Services & Consulting



Kaden ^基利

Preliminary Master Program (Rev.C)

Primary Baseline

Critical Remaining Work

Actual Work

Remaining Work

◆ Milestone

y ID	Activity Name	Original BL Project Duration Start	BL Project Finish		Actual Rem Finish	2014			2015		201		Τ-
- MO 500	FO. All and the invalid that Forest Indian (OC Feb 147)	0.0d	09-Feb-17	Otall	7 11.1011	AJJ	DINCISIA	JF P	AJJJA	SONDI	FMA 1	JASON	미기
MS.E03	E3-All works in milestone E completed (26-Feb'17)	0.00	03-1 60-17										
The second second second	ries and General Items												
THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	Milestone Schedules Preliminary Master Program, ICE, TTA, ELS & Temporay decking (3-Aug'14)				-								
A01_0010	Approval of Preliminary Master Program (3-Aug'14)	0.0d	02-Aug-14		21-Oct-14			1-1-1-1-	11-11-11				1111
A01_0020	Approval of Specified Plans (3-Aug'14)	0.0d	01-Aug-14		01-Aug-14								
A01_0030	Approval of Independent Checking Engineer (3-Aug'14)	0.0d	01-Aug-14		01-Aug-14								
A01_0040	Approval of the TTM Scheme by the Relevant Authorities (3-Aug'14)	0.0d	27-Jun-14		27-Jun-14	*							
A01_0050	Approval for the design of ELS systems for cofferdams & temporary decking (3-Aug'14)	0.0d	01-Aug-14		03-Mar-15			•					
	sign of Mined Tunnel ESS; Hoarding phase/plan; QP, SAP, PMP, H&SP, EMP (2-Nov'14)				THE PARTY OF								
A02_0010	Approval for the design of excavation support systems of the mined tunnel section (2-Nov'14)	0.0d	01-Nov-14		16-Jan-15			•					
A02_0020	Approval of all phasing plans & hoarding arrangements (2-Nov'14)	0.0d	28-Oct-14		28-Oct-14		8						
A02_0030	Approval of all method statements for Part B works (2-Nov'14)	0.0d	30-Oct-14		30-Oct-14		8						
A02_0040	Engineer's confirmation of satisfactory implementation of Quality Plan (2-Nov'14)	0.0d	01-Nov-14		01-Nov-14		8						
A02_0050	Engineer's confirmation of satisfactory implementation of System Assurance Plan (2-Nov'14)	0.0d	01-Nov-14		01-Nov-14		8						
A02_0060	Engineer's confirmation of satisfactory implementation of Programming Management System (2-Nov'14)	0.0d	01-Nov-14		01-Nov-14		8						
A02_0070	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (2-Nov'14)	0.0d	01-Nov-14		01-Nov-14		8						
A02_0080	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (2-Nov'14)	0.0d	01-Nov-14		01-Nov-14		8						
	mplementation of Specified Plans (25-Jan'15)												
A03_0010	Engineer's confirmation of satisfactory implementation of System Assurance Plan (25-Jan'15)	0.0d	24-Jan-15		24-Jan-15			\$					
A03_0020	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (25-Jan'15)	0.0d	24-Jan-15		24-Jan-15			8					
A03_0030	Engineer's confirmation of satisfactory implementation of Quality Plan (25-Jan'15)	0.0d	24-Jan-15		24-Jan-15			\$					
A03_0040	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (25-Jan'15)	0.0d	24-Jan-15		24-Jan-15			8					
A4 Approval of e	excavation method under Tram Track; Satisfactory Implementation of PMS (3-May'15)												
A04_0010	Approval for method of excavation & support for mined tunnel section beneath tram tracks (3-May'15)	0.0d	02-May-15		21-Apr-15			'					
A04_0020	Engineer's confirmation of satisfactory implementation of Programming Management System (3-May'15)	0.0d	02-May-15		02-May-15			1111 '	•				
A5 Approval of V	VAC D-wall demolition; Satisfactory Implementation of Specified Plans (2-Aug'15)	THE RESERVE TO SERVE THE PARTY OF THE PARTY											
A05_0010	Approval for method for demolition of WAC Diaphragm Wall (2-Aug'15)	0.0d	01-Aug-15								\$		
A05_0020	Engineer's confirmation of satisfactory implementation of Specified Plans (2-Aug'15)	0.0d	01-Aug-15					4-1-1-1-	&		4-4-4-4-4	-1-1-1-1-1	1
A6 Satisfactory I	mplementation of PMS (1-Nov'15)												
A06_0010	Engineer's confirmation of satisfactory implementation of Programming Management System (1-Nov'15)	0.0d	31-Od-15							\$ 1000			
the same of the sa	mplementation of Specified Plans (31-Jan'16)												
A07_0010	Engineer's confirm ation of satisfactory implementation of Specified Plans (31-Jan'16)	0.0d	:30-Jan-16							8			
A8 AIP for T&C o	of BS and ABWF works; Satisfactory Implementation of PMS (1-May'16)											-1-1-1-1-1	
A08_0010	Engineer's confirmation of satisfactory implementation of Programming Management System (1-May'16)	0.0d	30-Apr-16								<u>\$</u>		
A08_0020	Approval in principle of all procedures for Testing & Commissioning of all Building Services (1-May'16)	0.0d	27-Apr-16									×	
A08_0030	Approval in principle of all acceptance procedures of all of the ABWF works (1-May 16)	0.0d	27-Apr-16									×.	1 1
	Implementation of Specified Plans (31-Jul'16)			,									
A09_0010	Engineer's confirmation of satisfactory implementation of System Assurance Plan (31-Jul'16)	0.0d	:30-Jul-16	-					44-4-4-4			×.	
A09_0020	Engineer's confirmation of satisfactory implementation of Health & Safety Plan (31-Jul'16)	0.0d	30-Jul-16									Š.	
A09_0030	Engineer's confirmation of satisfactory implementation of Quality Plan (31-Jul'16)		30-Jul-16									Š.	
A09_0040	Engineer's confirmation of satisfactory implementation of Environmental Management Plan (31-Jul'16)	0.0d	30-Jul-16									&	
	M manual & Draft As-built Drawings; Satisfactory Implementation of PMS (30-Oct'16)		20.0.1.12										
A10_0010	Engineer's confirmation of satisfactory implementation of Programming Management System (30-Oct'16)	0.0d	29-Oct-16										
A10_0020	Approval in principle of draft Operating & Maintenance Manuals for the Whole Works (30-Oct 16)	0.0d	27-Oct-16										
A10_0030	Approval in principle of draft As-built Drawings for the Whole Works (30-Oct 16)	0.0d	27-Oct-16										
	O&M manual and As-built drawings for the Works (26-Feb'17)		00 5-1-17										
A11_0010	Approval of Operating & Maintenance Manual for Whole Works (26-Feb'17)	0.0d	22-Feb-17										
A11_0020	Approval of As-built drawings for Whole Works (26-Feb'17)	0.0d	22-Feb-17						++				
	Preliminaries and General Items				-								
	omission and Approval												
	ILG Submission and Approval	4 00 1 4 4 4 4 4 4 4	17 6	44 4-44	17 Apr 14	-							
D.I.T_0010	TTMS - Submission to Members of TMLG for Approval, ref. ITT 6.2	4.0d 14-Apr-14 55.0d 22-Apr-14											
D.I.T_0020	TTMS - TMLG Meetings and Approval, Resubmission if required, RMO Applicataions	55.Ud ZZ-Apir-14	27-Jun-14	22-ADI-14	27-Juli-14								
	Submission and Approval	20.04.4.4.4.4.4	22 May 44	14 Apr 14	11 Aug 14	1111							: ! !
D.I.T_0030	A1 - ELS & Temporary Decking - Design, ICE, Submission to BD for Approval	30.0d 14-Apr-14											
D.I.T_0040	A1 - ELS & Temporary Decking - Review the submission	30.0d :24-May-14											
D.I.T_0050	A1 - ELS & Temporary Decking - Preparation of re-submission (If Require)			17-Sep-14			11111						
D.I.T_0060	A1 -IELS & Temporary Decking - BD Review, Resubmission if required, and Approval (If Require)	Party Company	77.15 44	24-Sep-14	The second second		green () 1	rejuj	++				
D.I.T_0070	A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE			29-Jul-14	The state of the s								
D.I.T_0080	A1 - ELS - Verification (based on 4 additinal SI. AD-01 to AD-04), ICE, Submission & Approval	24.0d 1.8-Aug-14	15-Sep-14	10-Aug-14	10-5ep-14				<u> : II. i i i i</u>	<u> </u>	<u> </u>	<u> </u>	<u>- i i</u>

Kaden 基

Primary Baseline

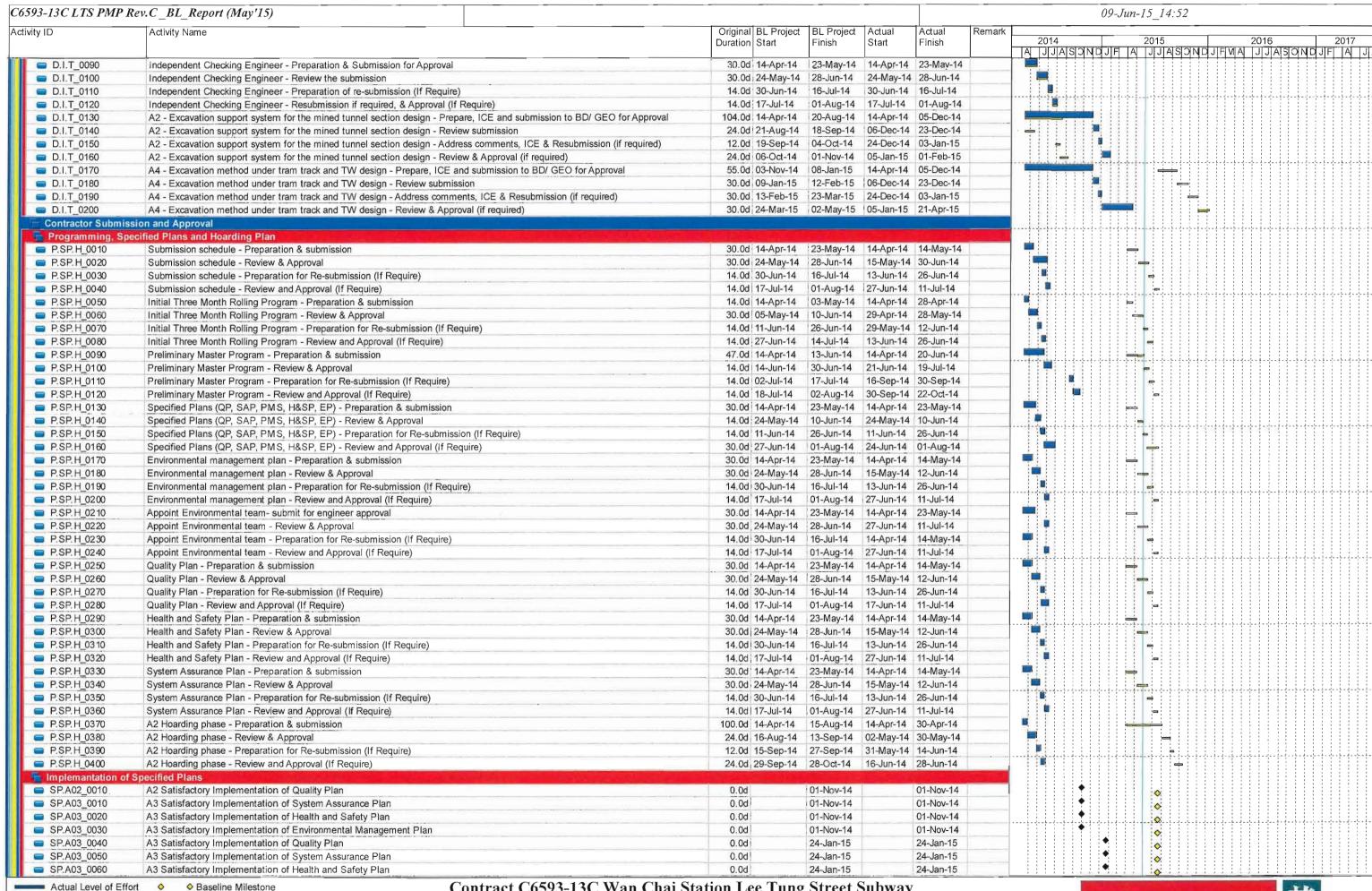
Actual Work

Remaining Work

Critical Remaining Work

♦ Milestone

Preliminary Master Program (Rev.C)



Kaden ^基利

Primary Baseline

Critical Remaining Work

Actual Work

Remaining Work

♦ Milestone

ty ID	Activity Name	Original BL Project	t BL Project	ect Actual	Actual	Remark	Α Τ							
		Duration Start	Finish	Start	Finish		20	2014	2240		2015		2016	ממאה זובו
SP.A03_0070	A3 Satisfactory Implementation of Environmental Management Plan	0.0d	24-Jan-15	5	24-Jan-15	5	1715	13/10	14114.	- 11 11 11 11 11 11 11 11	10000	DNDJFMA	1 Januar	AMAAL
SP.A05_0010	A5 Satisfactory Implementation of Quality Plan	0.0d	01-Aug-15				A TO	1-1-1-	1-1-1-1-		Ž			
SP.A05_0020	A5 Satisfactory Implementation of System Assurance Plan	0.0d	01-Aug-15							. ! ! ! !				
SP.A05_0030	A5 Satisfactory Implementation of Health and Safety Plan	0.0d	01-Aug-15				4 11			.				
SP.A05_0040	A5 Satisfactory Implementation of Environmental Management Plan	0.0d	01-Aug-15			4	4 11			.	2			
SP.A05_0040 SP.A07_0010	The second section is a second section in the second section in the second section is a second section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section in the section is a section in the section is a section in the section		The same of the same of the same of			-					\Q			
	A7 Satisfactory Implementation of Quality Plan	0.0d	30-Jan-16				4						4-4-4-4-4-4	
SP.A07_0020	A7 Satisfactory Implementation of System Assurance Plan	0.0d	30-Jan-16				4 :::			.	$\mathbf{d} \sqcup \sqcup \square$	₹		
SP.A07_0030	A7 Satisfactory Implementation of Health and Safety Plan	0.0d	30-Jan-16				A = 1			,	$A \cap A \cap A$	8		
SP.A07_0040	A7 Satisfactory Implementation of Environmental Management Plan	0.0d	30-Jan-16				4 11			.		8		
SP.A09_0010	A9 Satisfactory Implementation of Quality Plan	0.0d	30-Jul-16		4	4	4 11			. 7			8	
SP.A09_0020	A9 Satisfactory Implementation of System Assurance Plan	0.0d	30-Jul-16				$4 \dots$				4 1 1 1 1 1		8	
SP.A09_0030	A9 Satisfactory Implementation of Health and Safety Plan	0.0d	30-Jul-16				4						8	
SP.A09_0040	A9 Satisfactory Implementation of Environmental Management Plan	0.0d	30-Jul-16							.			¥	
Implementation of P	Programming Management System	are a compared to the second					4 11			.	Aiiiii'		· · · · · · · · · · · · · · · · · · ·	
PMS.A02_0010	A2 Satisfactory Implementation of Programming Management System	0.0d	01-Nov-14	4	01-Nov-14	4	4 '		•		♦			
PMS.A04_0010	A4 Satisfactory Implementation of Programming Management System	0.0d	02-May-15		02-May-15		4 11				• •			
PMS.A06_0010	A6 Satisfactory Implementation of Programming Management System	0.0d	31-Oct-15		02 11.0,		4	11111	+		4	*		
PMS.A08_0010	As Satisfactory Implementation of Programming Management System As Satisfactory Implementation of Programming Management System										1	4	4	
		0.0d	30-Apr-16				$A + \mathbb{P}^2$	1111			41111	⋄	5	: [] [] [
PMS.A10_0010	A10 Satisfactory Implementation of Programming Management System	0.0d	29-Oct-16				4 :::				41111		AA + + +	. 8
Other Submissions		20.04.44.4-44	The stand	A STATE OF THE PARTY OF THE PAR	12211			411			4			
OS.OM_0010	Hoarding Installation Method Statement - Preparation & Submission	30.0d 14-Apr-14	1000		-		4	البليلة	11111					
OS.OM_0020	Hoarding Installation Method Statement - Review & Approval	12.0d 24-May-14												. 111111
OS.OM_0030	Hoarding Installation Method Statement - Preparation for Re-submission (if required)	12.0d 09-Jun-14			14 21-Jun-14			$A \cdot $			4			. ! ! ! ! !
OS.OM_0040	Hoarding Installation Method Statement - Re-submission (if required) & Approval	12.0d 23-Jun-14			14 23-Jun-14		4	4						
OS.OM_0050	Site Investigation Works Method Statement - Preparation & Submission	30.0d 14-Apr-14					A	41 '						
OS.OM_0060	Site Investigation Works Method Statement - Review & Approval	12.0d 24-May-14					A 1 1	$A \Vdash \Gamma'$.411111			.
OS.OM 0070	Site Investigation Works Method Statement - Preparation for Re-submission (if required)						4	48444			.4			
		12.0d 09-Jun-14		The same of the sa		-	4	4 1			. "			
OS.OM_0080	Site Investigation Works Method Statement - Re-submission (if required) & Approval	12.0d 23-Jun-14			14 07-Jul-14		4 11						1 3 1 1 1	
OS.OM_0090	WAC & H15 D-wall demolition Design- ICE, Preparation for design submission	90.0d 03-Nov-14	a IV. Compression - Avion	4.00° "			4 : : :				1.1.1			-
OS.OM_0100	WAC & H15 D-wall demolition- Review & Approval	60.0d 23-Feb-15	The second second				$A + \cdots$	1111				41111	411111	
OS.OM_0110	WAC & H15 D-wall demolition- Preparation for re-submission (If require)	40.0d 09-May-15	The second second				$A \parallel \parallel \parallel$. $\mathbb{H}_{\mathbb{H}\mathbb{H}}$		dilli	
OS.OM_0120	WAC & H15 D-wall demolition- Review & Approval (If require)	30.0d 27-Jun-15					4							
OS.OM_0130	A8 AIP procedures for T&C of BS and ABWF works (1st Batch)	90.0d 01-Jun-15					4		11111		. 📗 🗎 📂		4 1 1 1 1 1	.
OS.OM_0140	A8 AIP procedures for T&C of BS and ABWF works (1st Batch)	90.0d 16-Sep-15					4 111							
OS.OM_0140	A8 AIP procedures for T&C of BS and ABWF works (Znd Batch) A8 AIP procedures for T&C of BS and ABWF works (Remaining)				-		4 : 5		1111					
		90.0d 06-Jan-16				4	4 17	4111	1111			THE PARTY	THE P	11111
OS.OM_0160	A10 AIP of Draft O&M manual and Draft As-built Drawings	150.0d 28-Apr-16	The state of the s			4-	4	$Aii \vdash i$					dilator	
OS.OM_0170	A11 Approval of O&M manual and As-built drawings for the Works	95.0d 28-Oct-16	The fact that the second	and the state of the state of				4		eav.	. [[]]		11111	1111
OS.OM_0180	RC Works- Preparation of Method Statement- Preparation				15 06-Feb-15		4 1 17	$A \square \square$		4	- 			
OS.OM_0190	RC Works - Preparation of Method Statement- Submission & Approval	12.0d 17-Sep-14					4 117			1111	4			
OS.OM_0200	RC Works - Preparation for Re-submission (if required)	12.0d 03-Oct-14					4 1 1		1111		41112			. :
OS.OM_0210	RC Works - Re-submission (if required) & Approval	12.0d 17-Oct-14					4 187				41111			.
	Sheet pile installation- Preparation of Method Statement- Preparation		14.4	7.5.41			<u></u>	البابلة		. Linkstr		4-1-1-1-1-1-1		
OS.OM_0220		42.0d 14-Apr-14					4 1 17							. 1
OS.OM_0230	Sheet pile installation- Preparation of Method Statement- Submission & Approval	12.0d 09-Jun-14	A CHARLES AND A CO.	and the same of th			4 177	<u> </u>	<u> </u>		4			
OS.OM_0240	Sheet pile installation - Preparation for Re-submission (if required)	12.0d 23-Jun-14	The same state of the same		The second secon		$A = \{ \}^{r}$		<u>- 1</u>		B			
OS.OM_0250	Sheet pile installation - Re-submission (if required) & Approval	12.0d 08-Jul-14	21-Jul-14	23-Oct-1	14 14-Nov-14	A	4 11 1	4 1			4			
OS.OM_0260	Excavation works- Preparation of Method Statement- Preparation.	42.0d 14-Apr-14		The state of the s	A STATE OF THE PARTY OF THE PAR		$A + \mathbb{P}^r$		4111					.
OS.OM_0270	Excavation works- Preparation of Method Statement- Submission & Approval	12.0d 09-Jun-14	The second second second		The Harman State of the Control of t		4			HITT			1 1 1 1 1	
OS.OM_0280	Excavation works- Preparation for Re-submission (if required)	12.0d 23-Jun-14			14 21-Oct-14		4	Π	41111					
OS.OM_0290	Excavation works- Re-submission (if required) & Approval		21-Jul-14		14 21-Oct-14		4 11:							
OS.OM_0300	Work below tram track Method Statement - Preparation				Test 411 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		4 111	1111	11111		† i			
		60.0d 08-Jul-14			15 23-Mar-15	101	4				4			
OS.OM_0310	Work below tram track Method Statement - Submission & Approval	12.9d; 17.Sep-14					4	البابلية	4-1-1-1-1					
OS.OM_0320	Work below tram track Method Statement - Preparation for Re-submission (if required)	12.0d 03-Oct-14		- AAA	5 27-Apr-15	Alessa	4 11:	+			-111			
■ OS.OM_0330	Work below tram track Method Statement - Re-submission (if required) & Approval	12.0d 17-Oct-14	THE STORY DISTRICT TO SELECT			4	4 111							
OS.OM_0340	H15 & WAC Break Through Method Statement - Preparation	60.0d 08-Jul-14	16-Sep-14				$4 \pm \pm \epsilon$. ! ! !						
OS.OM_0350	H15 & WAC Break Through Method Statement - Submission & Approval	12.0d 17-Sep-14					4 + 11	: ! ! !						
OS.OM_0360	H15 & WAC Break Through Method Statement - Preparation for Re-submission (if required)	12.0d 03-Oct-14				1	$A + \Box$	1 1						
OS.OM_0370	H15 & WAC Break Through Method Statement - Preparation for Re-submission (if required) H15 & WAC Break Through Method Statement - Re-submission (if required) & Approval					4	4		1-1-1-1			*		
	BD for consent of H15 break throughs works - Preparation	12.0d 17-Oct-14					A + +				13.5			
OS.OM_0380		90.0d 03-Aug-15				4	$A = \Box \Box$:	11117					
OS.OM_0390	BD for consent of H15 break throughs works - Submission & Approval	60.0d 19-Nov-15		**		4	$4 \pm \pm 1$:	11117					411111
■ OS.OM_0400	BD for consent of H15 break throughs works - Preparation for Re-submission (if required)	30.0d 01-Feb-16	100000000000000000000000000000000000000	5			$A = \Box \Box$				3 8 8			
OS.OM_0410	BD for consent of H15 break throughs works - Re-submission (if required) & Approval	50.0d 10-Mar-16					4	1111				الإرااللة		<i>=</i>
	Submit and obtain AIP for Method Statement, EDOC Draft, Permanent Materials	60.0d 31-Oct-14					A		Annie a bankana			4-4-4-4-4-4-	411111	ATTIT

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

Primary Baseline

Critical Remaining Work

Actual Work

Remaining Work

♦ Milestone

ity ID	Activity Name	Original Duration	BL Project Start	BL Project Finish	Actual Start	Actual Finish	Remark	2014			201		\neg	2016		7 2
		Duration	Otan	1 1111511	Otait	T IIIIIIIII	/	JA JJJ	NCS	DJF			J DJFV	AJJ	ASON	DJF
Mobilization and O Permit Application																
PA_0010	XP Excavtion Permit Application and Permit	70.0d	14-Apr-14	11-Jul-14	14-Apr-14	10-Jun-14									: : : : :	
PA_0020	TRA Tree Removal Application and Permit	6.0d	14-Apr-14	23-Apr-14	14-Apr-14	15-Jul-14					e i					
PA_0030	Liason with all utility service providers on diversions		the second secon	07-Jun-14	195 or 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						_					
PA_0040	Baseline noise monitoring report - Preparation & submission to Engineer and EPD	30.0d	14-Apr-14	23-May-14	23-Jun-14	28-Jun-14										
PA_0050	Baseline noise monitoring report - Review & Approval	30.0d	24-May-14	28-Jun-14	30-Jun-14	09-Jul-14										
PA_0060	Baseline noise monitoring report - Preparation for Re-submission (If Require)	14.0d	30-Jun-14	16-Jul-14	23-Jun-14	28-Jun-14		16			-					
PA_0070	Baseline noise monitoring report - Review and Approval (If Require)	14.0d	17-Jul-14	01-Aug-14	30-Jun-14	09-Jul-14			11111			-! ! ! <u>!</u>				1111
PA_0080	Baseline air monitoring report - Preparation & submission to Engineer and EPD	30.0d	14-Apr-14	23-May-14	23-Jun-14	28-Jun-14		1			=					
PA_0090	Baseline air monitoring report - Review & Approval	30.0d	24-May-14	28-Jun-14	30-Jun-14	09-Jul-14					. == 3					
PA_0100	Baseline air monitoring report - Preparation for Re-submission (If Require)	14.0d	30-Jun-14	16-Jul-14	10-Jul-14	10-Jul-14					==					
PA_0110	Baseline air monitoring report - Review and Approval (If Require)	14.0d	17-Jul-14	01-Aug-14	10-Jun-14	11-Jul-14					-	=				
3 : Civil. Struct	tural and ABWF Works for the New Subway (Part A Works)															
	ilestone Schedules															
	5 of SBC & Children's Play Area Cofferdam completed (2-Nov'14)															
MSB01_01	Southern Basket Ball Court: excavate to +2.5mPD (2-Nov'14)	0.0d		01-Nov-14		01-Nov-14			•			⋄	4411			
MSB01_02	Children's Play Area - Cofferdam construction is completed (2-Nov'14)	0.0d		25-Oct-14		25-Oct-14			•		<u> </u>					
	complete & Children's Play Area Excavation to -1.3mPD (25-Jan'15)		1000										11		,	
MSB02_01	Southern Basket Ball Court: Excavation is satisfactorily completed (25-Jan'15)	0.0d		24-Jan-15		16-Jan-15				•			•			
MSB02_02	Children's Play Area: Excavation has reached -1.3mPD (25-Jan'15)	0.0d		24-Jan-15		24-Jan-15				•	1 1		\Q		.	
B3 SBC RC Roof, J	nR NFP & EBC 67% cofferdam, JnR WBC UU div complete (3-May'15)					and the second second									. ! ! ! !	
MSB03_01	Southern Basket Ball Court: Roof slab construction has been satisfactorily completed (3-May'15)	0.0d		02-May-15		28-Apr-15				6	> 1					
MSB03_02	Johnston Road North Footpath and East-bound Carriageway: 67% of cofferdam installation complete (3-May'15)	0.0d		27-Apr-15		09-May-15					Ø					
MSB03_03	Johnston Road West-bound Carriageway - All utility diversions, where required, satisfactorily completed (3-May'15)	0.0d		21-Mar-15							V V					
MSB03_04	10% completed of tram track support (3-May 15)	0.0d		02-May-15		29-Apr-15			1111		•					
AND RESIDENCE OF THE PARTY OF T	C Site entry, CPA base, JnR NFP & EBC Cofferdam & decks complete (2-Aug 15)					,										
MSB04_01	Southern Basket Ball Court: Playing surface has been returned to LCSD for use (2-Aug'15)	0.0d		27-Jun-15							, k				. ! ! ! !	
MSB04_02	Northern Basket Ball Court: Site entry onto Hennessy Road has been formed (2-Aug'15)	0.0d		31-Jul-15								Δ				
MSB04_03	Children's Play Area: RC construction of the base slab, except at mucking out point, complete (2-Aug'15)	0.0d		31-Jul-15							▼					
MSB04_04	JnR N-Footpath & E-Bound Carriageway: Cofferdam construction complete & all temp traffic decks installed (2-Aug'15)	0.0d		29-Jul-15								Ş.				
	CPA RC & vent shaft 1.2m above GL, Tram Tracks Excavation to +0.0mPD (1-Nov'15)	2.01		00.0.1.15												
MSB05_01	Northern Basket Ball Court: Satisfactorily complete construction of the cofferdam (1-Nov'15)	0.0d		30-Oct-15									\$			
MSB05_02	Children's Play Area: RC construction complete include above ground vent shaft structures 1.2m above ground (1-Nov'15)	0.0d		31-Oct-15		-							4-3	f		
MSB05_03	Tram Tracks - Excavation to +0.0 mPD is satisfactorily completed (1-Nov'15)	0.0d		24-Oct-15								<u>\$</u>	44	11111		
THE RESERVOIR SHAPE OF THE PERSON NAMED IN	to formation, JnR Excavation complete (31-Jan'16)	0.04		00 1 40												
MSB06_01	Northern basket Ball Court - Excavation to final formation has been satisfactorily completed (31-Jan'16)	0.0d		29-Jan-16		-							8	<i>(</i>		
MSB06_02	Johnston Road All Carriageways, Footpaths & Tram Tracks: Excavation is completed (31-Jan'16)	0.0d		30-Jan-16					1111				٥	41111		
	R CW & FP & TT RC construction exp temp opening, CPA RC complete (1-May'16)	0.04		20 100 16	1				-}}					f-f{-}}		++++
MSB07_01	Northern Basket Ball Court: RC construction of the roof slab has been completed (1-May'16)	0.0d		30-Apr-16										• •		
MSB07_02	JnR Carriageways, Footpaths & Tram Tracks: RC construction, except at temporary opening completed (1-May'16)	0.0d		30-Apr-16										•	,	
MSB07_03	Children's Play Area: RC Construction of above ground ventilation shaft structures is completed (1-May'16)	0.00		28-Apr-16										9		
	achieved, NBC All reinstatement, Opening through H15 D-wall complete (31-Jul'16) ABWF to Degree 1 has been achieved for works in this cost centre (31-Jul'16)	0.0d		28-Jul-16											•	
MSB08_01 MSB08_02		0.0d		28-Jul-16											*	++++
MSB08_02 MSB08_03	Northern Basket Ball Court - All re-surfacing works & playing surface reinstatement completed (31-Jul'16) H15 Interface: The opening through H15 diaphragm wall has been formed (31-Jul'16)	0.0d		30-Jul-16			,								8	
	achieved, All road reinstatement in JnR & Hennessy Rd complete (30-Oct'16)	0.007		00-0ui-10												V
MSB09_01	ABWF to Degree 3 has been achieved for works in this cost centre (30-Oct 16)	0.0d		27-Oct-16											•	
MSB09_02	All road reinstatement works in Johnston Road and Hennessy Road have been satisfactorily completed (30-Oct 16)	0.0d		21-Oct-16											×	\$
and the same of th	ost Centre B satisfactorily completed (26-Feb'17)	0.30		21 000 10		SCHOOL SECTION			11:1:1			i i i i i i	1-1-1-1			zaja aliji a aja
MSB10_01	Aff works in this cost centre have been satisfactorily completed (26-Feb'17)	0.0d		25-Feb-17			-							:		
- All the same of	etion for ABWF Works	0.00				-										
ABWF.D1	ABWF Works - Degree 1	0.0d		28-Jul-16											8	
ABWF.D2	ABWF Works - Degree 2	0.0d		23-Sep-16											8	
ABWF.D3	ABWF Works - Degree 3	0.0d		27-Oct-16								TITT			8	
ABWF Works - Deg			T. COMM	ESTAT	THE REAL PROPERTY.										3 %	
ABWF.D1_1.010	1.1- Structure and building complete, clean, dry and weather proof	0.0d		28-Jul-16										*		
ABWF.D1_1.020	1.2- Blockwalls and partition walls complete, except on plant access route	0.0d		28-Jul-16	,									Ž		
ABWF.D1_1.030	1.3- Plastering, undercoat painting, floor screeding including plinths & upstands complete	0.0d		28-Jul-16										<u> </u>		
ABWF.D1_1.040	1.4- Equipment delivery routes & access openings available for Designated Contractors or Interface Contractors	0.0d		28-Jul-16										Ž	, HTTI	
ABWF.D1_1.050	1.5- Cast-in items & subframe installed; niches, recesses and box outs formed; cable troughs, ducts & risers complete	0.0d		28-Jul-16										i i 🍹		
	The state of the s				·-	11							$\overline{}$			

Kaden 基

Primary Baseline

Actual Work

Remaining Work
Critical Remaining Work

♦ Milestone

Preliminary Master Program (Rev.C)

ity ID	Rev. C_BL_Report (May'15) Activity Name	Original BL	_ Proiect E	BL Project	Actual	Actual	Remark								
ny 10	Activity (Marile)	Duration Sta		Finish	Start	Finish		201 [Al IJ]		DJIFLI	2015 Al IJIJIA	DINCISI	2016 기타에서 [J]		DJIFI
■ ABWF.D1_1.060	1.6- Structure as-built survey accepted	0.0d	12	28-Jul-16					1.10101.1	-10111	1 1 1 1 1 1	1-1-1-1-			1-1-1
BWF.D1_1.070	1.7- Structural & blockwork E&M openings formed & survey complete	0.0d	2	28-Jul-16											
ABWF.D1_1.080	1.8- Movement joints & stitch strips complete	0.0d	2	28-Jul-16											
■ ABWF.D1_1.090	1.9- Drainage system & discharge connections complete with temporary pumps operational	0.0d	2	27-Jul-16										*	
ABWF.D1_1.100	1.10- Escalator zones & pits complete; survey reference lines accepted	0.0d		28-Jul-16				1 1 1		1 1 1 1			111111	: i	1 1
ABWF.D1_1.110	1.11- Earthing mat, earthing rods & earthing pits complete & test results accepted	0.0d		28-Jul-16									1 1 1 1 1 3		
ABWF.D1_1.110	1.12- Underground pipework complete including manholes, ductworks & drawpits	0.0d		28-Jul-16				1 1 1		1 1 1 1			1111111		
		0.0d		14-Apr-14	-)	
ABWF.D1_1.130	1.13- Civil & building provisions for designated & interfacing contractors complete	0.00		14-Api-14					<u> </u>						
ABWF Works - Degr		0.04	1	E Can 16		-				: : : :				•	: :
ABWF.D2_2.010	2.1- Permanent door frames installed with temporary doors and locks	0.0d		15-Sep-16	-	-								Q	
ABWF.D2_2.020	2.2- Floor finishes & wall tilling in plant rooms for Designated Contractors complete	0.0d		23-Sep-16	-									<u> </u>	
ABWF.D2_2.030	2.3- Glazing & Balustrade support installed	0.0d		11-Aug-16			_			: : : :				§ .	: :
BWF.D2_2.040	2.4- Metal staircases, cat-ladders & catwalks complete	0.0d		5-Sep-16										<u> </u>	44.
BWF.D2_2.050	2.5- External louvers installed	0.0d	1	15-Sep-16										8	
ABWF.D2_2.060	2.6- Framework for final finishes installed	0.0d	1	5-Sep-16										8	
ABWF.D2_2.070	2.7- Water tightness testing to water tanks passed	0.0d	1	5-Sep-16										8	1 1
ABWF Works - Degr		CONTROL OF THE PARTY OF THE PAR													
ABWF.D3_3.010	3.1- All finishes complete including permanent doors, ironmongery	0.0d		27-Oct-16											
ABWF.D3_3.020	3.2- Balustrade installed	0.0d		27-Oct-16										Ĭ .	1
BWF.D3_3.030	3.3- Signage hangers & supports installed	0.0d		24-Oct-16										\$	
BWF.D3_3.040	3.4- Roller shutters, fire shutters & smoke barriers installed	0.0d		24-Oct-16										\$	
ABWF.D3_3.050	3.5- Acoustic treatment applied	0.0d	2	24-Oct-16										8	
BWF.D3_3.060	3.6- Louvres & grilles installed	0.0d	2	4-Oct-16										8	
ABWF.D3_3.070	3.7- All openings & Penetrations sealed	0.0d	2	4-Oct-16										8	
	und Reprovision works													1 1 1	
RW_0010	LCSD handover Northern Basket Ball Court 1	1.0d 17-	-Dec-16 1	7-Dec-16											
RW_0020	Fence off the site	2.0d:19-	-Dec-16 2	0-Dec-16				1 1 1		1111					: :
RW_0030	Expose the surface	6.0d 21-	-Dec-16 2	9-Dec-16											
RW_0040	Resurfacing works	14.0d! 30-	-Dec-16 1	6-Jan-17						1111		E TO FOL			7.1.
RW_0050	Hand over to LCSD, additional remedial if require		-Jan-17 2					1 1 1		+111					
RW_0060	LCSD handover Southern Basket Ball Court 2		-Jan-17 2												
RW_0070	Fence off the site		-Jan-17 2												111
			-Jan-17 0												
RW_0080	Expose the surface		-Feb-17 2		-								1-1-1-1-1-1-1		4-1-2
RW_0090	Resurfacing works														
RW_0100	Hand over to LCSD, additional remedial if require	5.00 21-	-Feb-17 2	o-reb-17		L	4								iii
B.RC_Comp	rt A Works, Civil and Structural Works for the New Subway RC Structure completed for the new subway	0.0d		0-Apr-16			1						•		
Site Preliminary Wo		0.00		o Apr 10											
SPW_0010	LCSD handover SBC & Play's Area	3.0d 14-	-Apr-14 1	6-Apr-14	14-Apr-14	16-Apr-14									1
SPW_0020	Fence off the Site area for SBC & Play's Area		-Apr-14 2				1								
			-Apr-14 2				1	1		1111					111
SPW_0030	Employ security guard & security booth delivery					05-May-14	-			1111					
SPW_0040	Removal of existing furniture for SBC & Play's Area as require														
SPW_0050	Trial trenches and expose existing UU service in SBC & Play's area		-Apr-14 0				1								+
SPW_0060	Setting up site office & misc.		-May-14 0		07-May-14		1								
SPW_0070	Form site access for vehicle	12.0d 07-			07-Jul-14						A=				1 1
SPW_0080	Diversion of existing utilities & misc. works if require for SBC & Play's Area		-Jun-14 0		09-Jun-14		-	-			=				
SPW_0090	Erect hoarding for SBC	12.0d 08-		1-Jul-14	16-Jul-14						, to				
SPW_0100	Ground/ Site Investigation in SBC & Play's Area	18.0d 08-	-Jul-14 2	8-Jul-14	08-Jul-14	28-Jul-14				الأعلاطيل					
SPW_0110	Transplant and tree removal	72.0d 24-	-Apr-14 2	1-Jul-14	24-Apr-14	:21-Jul-14				THE					
Northern Basket Bal						1						All III			
NBC_0010	Liaison with relevance parties for TTM		-Apr-15 1				-				1012				
NBC_0020	LCSD handover Northern Basket Ball Court for LTS construction works		-Jun-15 0				1								
■ NBC_0030	Preparation works for NBC site access	4. 0d 07-		0-Jul-15							4-4-3-3-3				
NBC_0040	Implementation of TTM	3.0d 14-		6-Jul-15								Al III			
NBC_0050	Relocation of metal fence access door for public	6.0d 11-		7-Jul-15			-								1 1
NBC_0060	Hoarding installation, installation of site entry on Hennessy Road	12.0d 18-		1-Jul-15								A 3 3 3			
NBC_0070	Expose UU & trial trench for sheet piles works	12.0d 01-	-Aug-15 1	4-Aug-15											
NBC_0080	Phase 3 ELS- Sheet Piles Installation [104 no. x 24m]		-Aug-15 1								1 1 1 1				
NBC_0090	Curtain Grouting and remedial works for sheet piles not reaching to design toe level		-Oct-15 3												
NBC_0100	Phase 3 ELS- Pumping Test preparation works		-Oct-15 2							1111					
NBC_0100	Phase 3 ELS-Pumping Test		-Oct-15 0												
NBC_0120	Phase 3 ELS- Pumping Test Report Preparation and submission to BD	6.0d 07-		_							111113			0 0 0 0 0	i i
	LEDISE AT LOS EDUDOUS ESTINEUDO ESTREUSISMON SUO SUODISSION DE DI		-1001/-15	3-1004-15											4 1

Kaden ^基

Preliminary Master Program (Rev.C)

Primary Baseline

Actual Work

Remaining Work
Critical Remaining Work

♦ Milestone

ty ID	Activity Name	Original Duration		BL Project Finish	Actual Start	Actual F Finish	Remark	2014		\top	2015	$\overline{}$		2016	
								AJJ	NCSA	JJF	<u> </u>	DINCS.	JEMA	J ASC	JNDJF
■ NBC_0130	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [500m^3]		14-Nov-15												
■ NBC_0140	Bulk excavation & layer 2 strut & preloading [500m^3]		25-Nov-15		-										
■ NBC_0150	Bulk excavation & layer 3 strut & preloading [500m^3]		12-Dec-15					1 1 1		1 1 1 1		1111			
■ NBC_0160	Bulk excavation & layer 4 strut & preloading [500m^3]		06-Jan-16		-										
■ NBC_0170	Plate load test		30-Jan-16										11 4		
■ NBC_0180	Plate load test- Preparation of report & submission to BD		06-Feb-16						<u> </u>						
■ NBC_0190	Base Slab- Waterproofing & RC construction [Concrete 490m^3] & [Re-Bar 29.5 T]		17-Feb-16												
NBC_0200	Wall- Waterproofing & RC construction [Concrete 300m^3] & [Re-Bar 54 T]	21.0d	05-Mar-16	01-Apr-16											
NBC_0210	Top Slab- Waterproofing & RC construction [Concrete 180m^3] & [Re-Bar 42.7 T]	24.0d	02-Apr-16	30-Apr-16											
NBC_0220	Construction of flood light footing [2 nos.]	12.0d	03-May-16	17-May-16						1 1 1			1111		
NBC_0230	Reinstatement and installation of flood light [2nos.]	6.0d	18-May-16	24-May-16											
NBC_0240	Backfilling for Northern Basketball Court	12.0d	25-May-16	07-Jun-16							. 1 1 1 1			. : 🛛 : :	
NBC_0250	Reinstate hard paving of Northern Basketball Court	18.0d	08-Jun-16	29-Jun-16											
NBC_0260	Reinstate surface coating of Northern Basketball Court	12.0d	30-Jun-16	14-Jul-16						1 1 1	.				
NBC_0270	Hand over to LCSD, additional remedial if require	12.0d	15-Jul-16	28-Jul-16										□ □	
NBC_0280	Reinstate road surface on Hennessy Road		29-Jul-16								.				
Southern Basket															1 1 1 1
SBC_0010	Phase 1 ELS- Sheet Piles Installation [184n. x 24m]		22-Jul-14		22-Jul-14							-			
SBC_0020	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	15.0d	09-Oct-14	25-Oct-14	15-Oct-14	15-Nov-14				1111		+			
SBC_0030	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [800m^3]	21.0d	09-Oct-14	01-Nov-14	09-Oct-14	01-Nov-14				1111	. [-		. ! ! ! ! '	
SBC_0040	Phase 1 ELS- Pumping Test preparation works	15.0d	09-Oct-14	25-Oct-14	16-Oct-14	08-Nov-14						<u> </u>			
SBC_0050	Phase 1 ELS- Pumping Test				17-Nov-14				T E	TITT					
SBC_0060	Phase 1 ELS- Pumping Test Report Preparation and submission to BD				04-Dec-14										
SBC_0070	Bulk excavation & layer 2 strut & preloading [800m^3]				15-Nov-14										
SBC_0080	Bulk excavation & layer 3 strut & preloading [800m^3]				18-Dec-14										
SBC_0090	Plate load test				26-Jan-15					8	. [HT			. ! ! ! ! ! '	
SBC_0090	Temporary Traffic Deck construction				10-Jan-15										11111
				CONTRACTOR OF STREET	12-Feb-15	The state of the s									
SBC_0110	Plate load test- Preparation of report & submission to BD	and the second of the second of the	and the second second	The second second second second second	04-Sep-15				181 18		.				
SBC_0120	Base Slab- Waterproofing & RC construction [Concrete 420m^3] & [Re-Bar 25.3 T]					The state of the s									
SBC_0130	Wall- Waterproofing & RC construction [Concrete 280m^3] & [Re-Bar 50.4 T]				02-Mar-15						11111	: 📆			
SBC_0140	Top Slab- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 50 T]				28-Mar-15			150000		4-1-1-1					+++++
SBC_0150	Construction of flood light footing (2 nos.)				14-May-15			117.73		1 1 1 1					
SBC_0160	Reinstatement and installation of flood light (2nos.)		-		05-Jun-15	05-Jun-15					A				
SBC_0170	Backfilling for Southern Basketball Court		The second second second second		21-May-15						₹				
SBC_0180	Reinstate hard paving of Southern Basketball Court		22-May-15	- make property of the party of											
SBC_0190	Reinstate surface coating of Southern Basketball Court		03-Jun-15							1.1.1.1					
SBC_0200	Hand over to LCSD, additional remedial if require	12.0d	13-Jun-15	27-Jun-15											
Children's Play A		20.00	20 1:134	00.0-1.11	00 1144	de Neu da		2							
CPA_0010	Phase 1 ELS- Sheet Piles Installation [123 No. x 24m]				22-Jul-14						+				
CPA_0020	Curtain Grouting and remedial works for sheet piles not reaching to design toe level		09-Oct-14		15-Oct-14					1 1 1 1	1 -				
CPA_0030	Phase 1 ELS- Pumping Test preparation works				16-Oct-14					4444					
CPA_0040	Bulk Excavation (Removal of hard paving on ground surface) & excavation for layer 1 to +2.5mPD [680m^3]				27-Oct-14						-				
CPA_0050	Phase 1 ELS- Pumping Test				17-Nov-14				. ■	1111	-				
CPA_0060	Phase 1 ELS- Pumping Test Report Preparation and submission to BD	The state of the s			04-Dec-14					#					
CPA_0070	Bulk excavation & layer 2 strut & preloading to -1.3 mPD [680m^3]	30.0d	18-Dec-14	24-Jan-15	18-Dec-14	24-Jan-15			11	-11		-			
CPA_0080	Play's Area Temporary Traffic Deck construction				10-Jan-15							<u> </u>			
CPA_0090	Bulk excavation & layer 3 strut & preloading [680m^3]	40.0d	09-Feb-15	30-Mar-15	09-Feb-15	28-Feb-15									
CPA_0100	Bulk excavation & layer 4 strut & preloading [680m^3]				01-Mar-15							:	=		
CPA_0110	Plate load test				30-Mar-15					111			4		
CPA_0120	Plate load test- Preparation of report & submission to BD				08-Apr-15		1			10	-				
CPA_0130	Base Slab- Waterproofing & RC construction [Concrete 395m^3] & [Re-Bar 23.8 T]		26-Jun-15		23-Apr-15	13-May-15									
CPA_0140	Wall- Waterproofing & RC construction [Concrete 210m^3] & [Re-Bar 37.8 T]		01-Aug-15												1 1 1 1
CPA_0150	Top Slab- Waterproofing & RC construction [Concrete 185m^3] & [Re-Bar 43.8 T]		22-Aug-15												
CPA_0160	Ventilation Shaft Below Ground- Waterproofing & RC construction [Concrete 35m^3] & [Re-Bar 6.3 T]		15-Sep-15												
CPA_0170	Ventilation Shaft 1.2m Above Ground- Waterproofing & RC construction [Concrete 25m^3] & [Re-Bar 4.5 T]		10-Oct-15	The state of the s							i i	וווונ			
CPA_0170	Ventilation Shaft - Waterproofing & RC construction reach +7.40 & +9.50mPD [Concrete 50m^3] & [Re-Bar 9 T]		21-Mar-16				-						11110		
													+++++*	The state of	111111
CPA_0190	Site cleaning for Play Area reinstatement & Landscape works		29-Apr-16		-										
CPA_0200	Reinstatement works for Plays Area		16-May-16										11111	1 2 - 1	
CPA_0210	Landscape works	and the same of th	03-Aug-16	The reserve		-								11117	
CPA_0220	Hand over to LCSD, additional remedial if require	48.0d 2	22-Oct-16	16-Dec-16											
Johnston Road JnR_0010		0.0d			-			i . i . i . j		1.1.1.1		8			

Preliminary Master Program (Rev.C)

Primary Baseline

Actual Work

Remaining Work Critical Remaining Work

♦ Milestone

Kaden ^基利

ity ID	Activity Name		BL Project Finish	Actual Start	Actual Rema	rk		21	015	20	016
		Duration Start	rinish	Start	Finish		ance.	JF A .	NCEPLL		JASONDJ
■ JnR_0020	Phase 2 ELS- Pumping Test 1 for 1st layer	6.0d 10-Sep-15									
■ JnR_0030	Phase 2 ELS- Pumping Test Report for 1st layer Preparation and submission	6.0d 17-Sep-15								. ! ! ! ! ! ! !	
■ JnR_0040	Phase 2 ELS- 1st layer Pumping Test completed & satisfied	0.0d	23-Sep-15						8		
■ JnR_0050	Bulk excavation & layer 1 strut & preloading [570m^3]	24.0d 24-Sep-15									
■ JnR_0060	All grouting and sheet piles achieved to tot level in Johnston Road	0.0d	07-Nov-15						Š.		
■ JnR_0070	Phase 2 ELS- Pumping Test 2 for whole ELS	6.0d 09-Nov-15	-	-		_					
■ JnR_0080	Phase 2 ELS- Pumping Test Report for whole ELS Preparation and submission	6.0d 16-Nov-15	-	-		-				.	
■ JnR_0090	Phase 2 ELS- Pumping test completed & satisfied	0.0d	21-Nov-15	-		_			× ×		
■ JnR_0100	Bulk excavation & layer 2 strut & preloading [570m^3]	18.0d 23-Nov-15	1	-	-						
■ JnR_0110	Bulk excavation & layer 3 strut & preloading [570m^3]	18.0d 14-Dec-15				- ::::					
■ JnR_0120	Bulk excavation & layer 4 strut & preloading [570m^3]	21.0d 07-Jan-16	A CONTRACTOR OF THE PARTY OF TH	-		- !!!!					
■ JnR_0130	Bulk excavation to formation level on JnR	0.0d	30-Jan-16	-						2	
■ JnR_0140	Sump pit- Waterproofing & RC construction [Concrete 250m^3] & [Re-Bar 15 T]	18.0d 01-Feb-16									
■ JnR_0150 ■ JnR_0160	Base Slab- Waterproofing & RC construction [Concrete 265m^3] & [Re-Bar 16 T] Wall- Waterproofing & RC construction [Concrete 70m^3] & [Re-Bar 12.6 T]	17.0d 25-Feb-16 18.0d 16-Mar-16									pi-l-l-l-l-l-l-
■ JnR_0160 ■ JnR_0170	Top Slab- Waterproofing & RC construction [Concrete 125m^3] & [Re-Bar 12.6 T]	18.0d 16-Mar-16								T _i I I	<i>i</i>
■ JnR_0170 ■ JnR_0180	RC structure completed on JnR	0.0d	30-Apr-16 30-Apr-16								
■ JnR_0180 ■ JnR 0190	Removal of temporary traffic decking ,backfill & road reinstatement on JNR	60.0d 03-May-16								<u> </u>	
The second secon	rth Footpath (TTM Stage 1, 2, 2A & 2B)	00.00 03-iviay-16	1-4-Jul- 10	THE RESERVE	THE RESERVE						
JnR.NFP_0010	Liaison, review & acceptance for TTM Stage 1	54.0d 14-Apr-14	21- Jun-14	14-Anr-14	21- Jun-14			<u> </u>			
■ JnR.NFP_0020	Implementation of TTM Stage 1	3.0d 28-Jun-14			and the second s						
■ JnR.NFP_0030	Phase 2 ELS- Sheet Piles Installation [30no. x 24m]	12.0d 26-Jan-15				- :::::					
■ JnR.NFP_0040	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6.0d 09-Feb-15	-	-	The state of the s			N			
■ JnR.NFP 0050	Installation of temporary traffic decking	6.0d 16-Feb-15	_	20 Way-10							
■ JnR.NFP 0060	Sheet piles & Traffic decking completed on North Footpath for TTM Stage 3		25-Feb-15						<u> </u>	-1-1-1-1-1-1	
Johnston Road Eas	The state of the s	0.00	20 1 00-10	Openius.				•			
THE RESIDENCE OF THE PARTY OF T	astbound carriageway North Side (TTM Stage 3)										
The second secon	Implementation of TTM 3	3.0d 30-Mar-15	01-Apr-15	13-Mar-15	14-Mar-15			1			
	Phase 2 ELS- Sheet Piles Installation [25no. x 24m]	12.0d 02-Apr-15		15 11101 10	1						/ 4 4 1 1 1 1 1
	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	6.0d 21-Apr-15							1	++++++++	
	Installation of temporary traffic decking	6.0d 28-Apr-15	The same of the sa						10		
	Sheet Piles & Traffic decking completed on Eastbound Carriageway North Side for TTM Stage 4		05-May-15						*		
	astbound carriageway South Side (TTM Stage 4 & 5)			1							.
The second secon	Implementation of TTM 4	3.0d 09-Jul-15	11-Jul-15						0		
	Phase 2 ELS- Sheet Piles Installation [33no. x 24m]		22-Jul-15						0		
	Curtain Grouting and remedial works for sheet piles not reaching to design toe level		29-Jul-15						•		
	Sheet pile completed on Eastbound Carriageway South Side	0.0d	29-Jul-15						8		
	Coring for minipile No. 1 to reach -56mPD [60m]	8.0d 02-Apr-15							M I		
	Installation of Re-Bar for minipile No.1 [4x 60m T50, 3.7Ton]	5.0d 16-Apr-15						ľ	(
	Groutiong for minipile No.1	1.0d 22-Apr-15						T			
	Coring for minipile No. 2 to reach -56mPD [60m]	8.0d 16-Apr-15	The second secon								
	Installation of Re-Bar for minipile No.2 [4x 60m T50, 3.7Ton]	5.0d 25-Apr-15							4		
	Groutiong for minipile No.2	1.0d 02-May-15									
	m Tracks (TTM Stage 3)	THE RESERVE OF THE PARTY OF THE			HIM TO BUILD						
■ JnR.TT_0010	Implementation of TTM 3	3.0d 30-Mar-15	01-Apr-15	13-Mar-15	14-Mar-15				(Tiviti		
■ JnR.TT_0030	1st layer grouting below tram track (NTH) to -6mPD 28no. 800mm C/C [NTH]	24.0d: 02-Apr-15	05-May-15	15-May-15	04-Jun-15						
■ JnR.TT_0040	1st layer of mini piles below tram tracks completed		05-May-15		-			2			
■ JnR.TT_0050	Expose concrete surface by Tramsway Sub-Con	3.0d 06-May-15		16-Mar-15	18-Mar-15						
■ JnR.TT_0060	Installation of Steel Beam	4.0d 06-May-15									
■ JnR.TT_0070	Leveling of steel Beam by Tramsway Sub-Con (NTH)	4.0d 06-May-15	09-May-15	24-Apr-15	24-Apr-15			111,	\mathbf{IIIIII}		
■ JnR.TT_0080	Installation of temporary steel decking on tram track	4.0d 06-May-15	09-May-15	25-Apr-15	23-May-15						
■ JnR.TT_0090	Expose concrete/ fill below tram track [60m^3]	24.0d 11-May-15						<u> </u>	-		
■ JnR.TT_0100	Installation of Re-bars [Re-Bars 7.6T]	12.0d 09-Jun-15	23-Jun-15	27-Apr-15	23-May-15				6		
■ JnR.TT_0110	Concreting for concrete decking below tram track [Concrete 60m^3]	6.0d 24-Jun-15							>4		
■ JnR.TT_0120	Reinstate the tram track surface	6.0d 02-Jul-15	08-Jul-15	25-May-15	06-Jun-15			1			
■ JnR.TT_0130	Tram track concrete decking & reinstatement works completed ready for Implementation of TTM Stage 4	0.0d	08-Jul-15		06-Jun-15			: i j 🔭 :	\O '		
■ JnR.TT_0140	2nd layer grouting and pipe piles below tram track to -17mPD (16m) 50no. x 324mm dia. 450mm C/C (2 machine)	12.0d 26-Oct-15	07-Nov-15								
	stbound carriageway (TTM Stage 5)	AND THE RESERVE		LESS STATE	CONTRACT OF STREET				1.5 11.15		
JnR.WBC_0010	Implementation of TTM Stage 5	3.0d 13-Aug-15									
■ JnR.WBC_0020	Trial Trench	12.0d 17-Aug-15									
JnR.WBC_0030	Phase 2 ELS- Sheet Piles Installation [20no. x 24m]	6.0d 31-Aug-15	05-Sep-15				. ! ! ! ! !				
■ JnR.WBC_0040	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	3.0d 07-Sep-15									

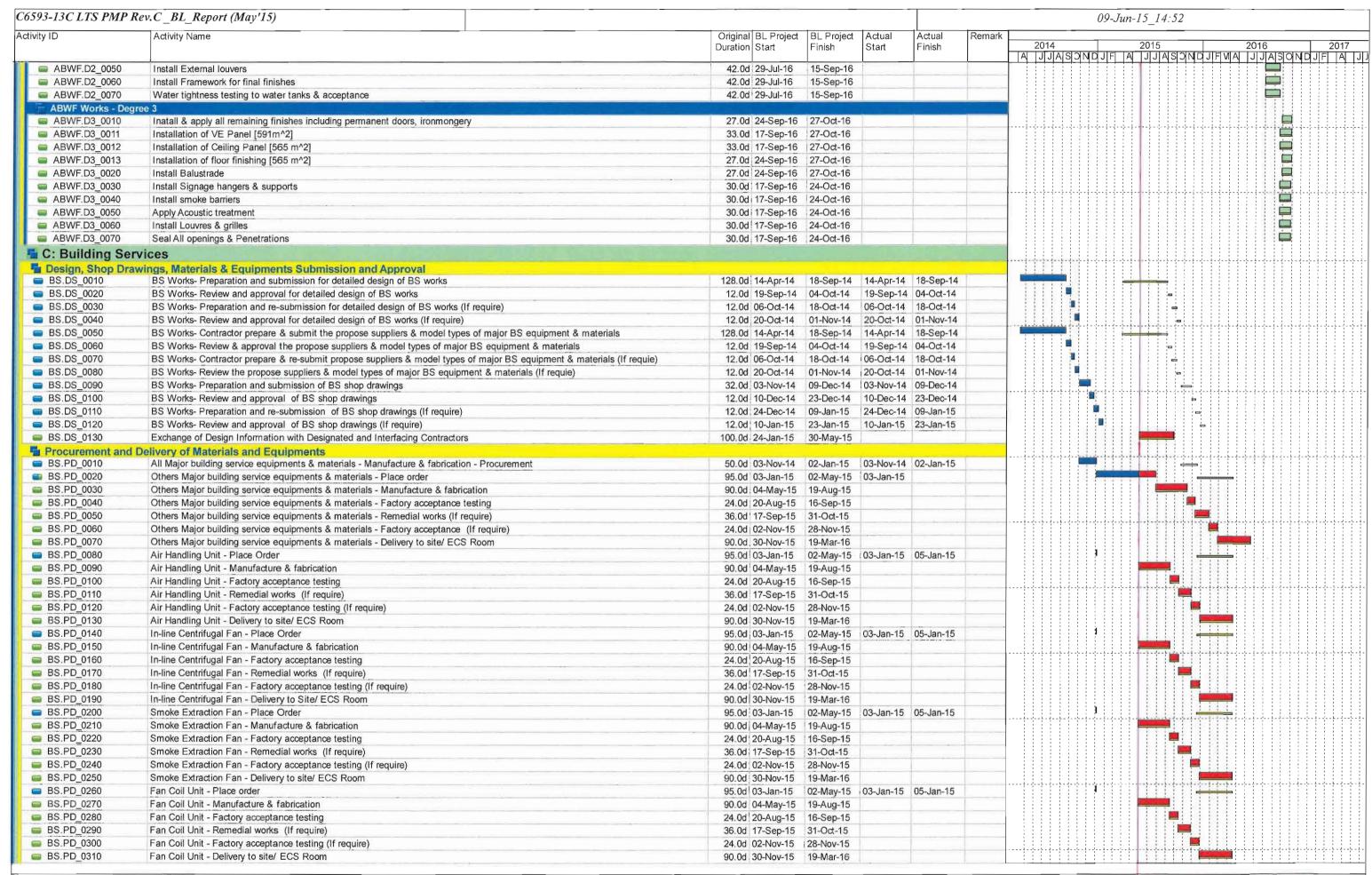
Kaden 基

Preliminary Master Program (Rev.C)

Critical Remaining Work

Actual Work
Remaining Work

	Activity Name	Original BL Project	BL Proiect	Actual	Actual	Remark					n-15_1					
			Finish	Start	Finish)14 J A S 3	DINC	JF IA	2015 A J J		DJFMA	2016 JJJA	SOND	JIFI
	Sheet piles completed on Westbound carriageway		09-Sep-15									8				T
	Coring for minipile No. 3 to reach -56mPD [60m]	8.0d 17-Aug-15					ļi									. ; . ;
	Installation of Re-Bar for minipile No.3 [4x 60m T50, 3.7Ton]	5.0d 26-Aug-15				-						. ₩				
	Groutiong for minipile No.3	1.0d 01-Sep-15					ţ .					11111				
	Coring for minipile No. 4 to reach -56mPD [60m]	8.0d 26-Aug-15					(II.					<u> </u>				
	Installation of Re-Bar for minipile No.4 [4x 60m T50, 3.7Ton]	5.0d 04-Sep-15					(
	Grouting for minipile No.4	1.0d 10-Sep-15					lj								4	
	Re-Bar Installation for minipile location	4.0d 11-Sep-15					l II.								4 1 1 1	1
	Cast Concrete minipile location	2.0d 16-Sep-15	17-Sep-15				\						1 1 1 1 1			
	bound carriageway East Side (TTM Stage 2A)						\									
	Implementation of TTM Stage 2A	3.0d 18-Dec-14	and the second second	The second second			Ų ii:									
JnR.WBC.ES_0020		12.0d 22-Dec-14	07-Jan-15	22-Dec-14	07-Jan-15		<u> </u>				-					
JnR.WBC.ES_0030	UU diversion on JnR Westbound Carriageway East Side	24.0d 08-Jan-15	04-Feb-15	08-Jan-15	04-Feb-15		Ţ					1				17
	Installation of temporary traffic decking	3.0d 05-Feb-15	07-Feb-15	05-Feb-15	07-Feb-15		Ų ii.			1						
	Traffic decking completed on Westbound Carriageway East Side for TTM Stage 2B		07-Feb-15		07-Feb-15		V iii			•		> : : : :				
	bound carriageway West Side (TTM Stage 2B)						١ ! ! :					1				
	Implementation of TTM Stage 2B	3.0d 09-Feb-15	11-Feb-15	09-Feb-15	11-Feb-15		V			1						
JnR.WBC.WS_0020		12.0d 12-Feb-15					· · · · · · · · · · · · · · · · · · ·		tititi		1		111111	111111	iiiiiiiiii	÷÷
	UU diversion on JnR Westbound Carriageway West Side	18.0d 02-Mar-15					\								1111	1
	UU diversion on JnR Westbound Carriageway West Glob	1,000,000,000,000,000	21-Mar-15	COX DE COME DE LA	21-Mar-15		۱ : : :			•						
Total Control	Installation of temporary traffic decking	6.0d 23-Mar-15			Z 1 WIGI-10		۱ i i i			'	V					
	Traffic decking completed on Westbound Carriageway West Side for TTM Stage 3		28-Mar-15				۱									
Johnston Road South		0.00	20-IVIQI-13		ALC: NO		·				0	¥-†-†-†-		 		†
and the second s	Implementation of TTM 4	3.0d 09-Jul-15	11-Jul-15		W-17		۱ ا ا									
	Expose UU		25-Jul-15				\									
The state of the s							۱ ا ا									1
	UU diversion	9.0d 27-Jul-15			-		\									
	Phase 2 ELS- Sheet Piles Installation [15no. x 24m]	6.0d 27-Jul-15						Щ.Д.Ь.	4-1-4-			Walandaria da			4.4.4.4.	
	Curtain Grouting and remedial works for sheet piles not reaching to design toe level	3.0d 03-Aug-15										1 : : : :				
	Installation of Temporary Traffic decking	6.0d 06-Aug-15					1								1111	
	Sheet Piles & Traffic decking completed on South Footpath for TTM Stage 5	0,0d	12-Aug-15				1					8				
H15 Break Through Wo					12.4		'									
H15_0010	Installation protection measurement for break through	3.0d 13-May-16	17-May-16				' <u> </u>								1	
H15_0020	Breaking out to H15 - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m x 1m blocks	48.0d 18-May-16	14-Jul-16													
	Breaking out to H15 - Installation of temporary steel proping	30.0d 24-May-16					1	' i i i								1
	Breaking out to H15 - Construct the portal frame	12.0d 15-Jul-16					1	1							111	1
	Demolish the propping steel members	2.0d 29-Jul-16					1									Ė
	Works, ABWF Works for the New Subway						1									1
	Preparation works for Fire Shutter on GL-L	6.0d 03-May-16	09-May-16						+	1-1-1-				1	1-1-1-1-	Ħ
	Installation of Fire Shutter on GL-L	3.0d 10-May-16	The second section is a second					1						1		1
	Preparation works for Security Shutter on GL-L	6.0d 03-May-16												í		
The state of the s	Installation of Security Shutter on GL-L	3.0d 10-May-16												i		
	Preparation works for Flood Gate on GL-L							1						1		1
	- 	6.0d 03-May-16				-									+	
	Installation for Flood Gate on GL-L	3.0d 10-May-16														
	Completion of Flood Gate, Fire Shutter & Security Shutter on GL-L		12-May-16					1		111				ŏ		
	Remaining ABWF, finishing & Site cleaning works	90.0d 28-Oct-16	16-Feb-17												-77	-
ABWF Works - Degree 1		1 -2 Adiput. 10 1	00 1115	712 171												
	Site Cleaning & dry the internal of Structure & building	72.0d 03-May-16	A CONTRACTOR OF THE PARTY OF TH						4.1.1.	1.1.1.						ļ. ļ.
	Installation of blockwalls & partition wall except on plant access route	72.0d 03-May-16														
	Apply Plastering, undercoat, painting, floor screeding including plinths and upstands	72.0d 03-May-16														
	Forming equipment delivery routes and access openings for DC or Interface Contractors	72.0d 03-May-16	28-Jul-16													
ABWF.D1_0050	Install Cast-in items, subframe; Form niches, recesses & box outs; Install cable troughs, ducts & risers	72.0d 03-May-16	28-Jul-16													
A CANADA	Preparation, submission and approval of Structure as-built survey	72.0d 03-May-16														
	Form Structural & blockwork E&M openings & preparation of survey	72.0d 03-May-16							Tirir	1111						11
	Installation of movement joints & stitch strips	72.0d 03-May-16														
	Form escalator zones & pits complete; survey reference lines for acceptance	72.0d 03-May-16														: i
	Installation of Earthing mat, earthing rods & earthing pits, test & acceptance	72.0d 03-May-16				-										
	Installation of underground pipe work including manholes, ductworks & drawpits	72.0d 03-May-16														
BWF Works - Degree 2		72.00 03-101ay-16	20-Jul- 10						+++-	1-1-4-	+			· Far	1-1-1-4-	}}-
	Permanent door frames installed with temporary doors & locks	42 04 20 F4 40	15 Con 40													
		42.0d, 29-Jul-16				-										
	Installation of Floor finishes & wall tilling in plant rooms for Designated Contractors	36.0d; 12-Aug-16		-										1117		
	Install Glazing & Balustrade support	12.0d 29-Jui-16														
ABWF.D2_0040 I	Install Metal staircases, cat-ladders & catwalks	42.0d 29-Jul-16	15-Sep-16				_ ; ; ; ;						<u> </u>	111-		<u> </u>
Actual Level of Effort	♦ Baseline Milestone Contract C6593-13C War	Chai Station Lee Tung	Street S	Subway							200	10 10 10				
Primary Baseline	A	0		Junnay					-	-						
	Preliminar	y Master Program (Rev. C)										1	944		
Actual Work												YA	eı			
Remaining Work	p	Progress vs Program							100		10				TAIL	



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

Actual Level of Effort

Critical Remaining Work

Primary Baseline

Actual Work

Remaining Work

Baseline Milestone

♦ Milestone



vity ID	Activity Name	Original BL Project	BL Project	Actual	Actual	Remark								
,		Duration Start	Finish	Start	Finish	, , , , , , , , , , , , , , , , , , , ,)14 TITĀTST	JND IIE	20°		2016 J F V A J J A	AISIONID	1 1 2
■ BS.PD_0320	Motorized Smoke & Fire damper - Place order	95.0d 03-Jan-15	02-May-15	03-Jan-15	05-Jan-15		171 10		11901	171	<u> </u>	Oli My Tololy	130113	1911
BS.PD_0330	Motorized Smoke & Fire damper - Manufacture & fabrication	90.0d 04-May-15	19-Aug-15											
■ BS.PD_0340	Motorized Smoke & Fire damper - Factory acceptance testing	24.0d 20-Aug-15	V. No. of the last				1 1							
■ BS.PD_0350	Motorized Smoke & Fire damper - Remedial works (If require)	36.0d 17-Sep-15												
■ BS.PD_0360	Motorized Smoke & Fire damper - Factory acceptance testing (If require)	24.0d 02-Nov-15							111111				-1-1-1-1-1	117
■ BS.PD_0370	Motorized Smoke & Fire damper - Delivery to site/ ECS Room	90.0d 30-Nov-15	100 to 10											
BS.PD_0380	All Major equipment BS equipment & materials - Completed placing orders	0.0d	02-May-15								*			1 1
■ BS.PD_0390	All Major equipment BS equipment & materials - Completed all factory acceptance testing	0.0d	28-Nov-15								Y	*		
BS.PD_0400	All Major equipment BS equipment & materials - Completed delivery to ECS room	0.0d	19-Mar-16									Y	44111	
Installation of Bu			1	-					Titit		-1-1-1-1-1-1		iiiiiii	i i
BS.I_0009	Installation of trucking, cable for the whole subway linking between H15 and WAC station	17.0d 03-May-16	23-May-16						44111				111111	
BS.I_0010	Electrical - Within Stn, Distribution equip. 16 nr, cable tray & trunk 420m, lighting fitting 81nr, earthing tape 276m	49.0d 21-Mar-16												ı i
BS.I_0020	Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr, connection(1)	50.0d 24-May-16					18 183	16						H
BS.I_0030	Electrical - Subway, D.eq.82nr, cable tray&trunk 803m, cable 2200m, light fit 91nr, earth 170m, sign 42nr, connection(2)		03-Oct-16					10						H
BS.I_0040	ECS - Within WAC Stn, Grille 6 nr, air duct 115m2, damper 7 nr.	30.0d 24-May-16						+	44					
BS.I_0050	ECS - Subway, Pipe/insul.75m, fan 12nr, grille 45nr, airduct 1106m2, paint 60m2, damper 36nr, control 4nr, etc. (1st)	42.0d 29-Jun-16					1: (1)					.		
BS.I_0060	ECS - Subway, Pipe/insul.75m, fan 12m, grille 45m, airduct 1106m2, paint 60m2, damper 36m, control 4m, etc. (1st)	24.0d 18-Aug-16		-										1
BS.I_0000 BS.I_0070	FS Works - Within H15, Pipe 59m, dectector 7 nr, hose reel 1 nr												117	. 1
BS.I_0070		21.0d 01-Aug-16							4.53				11111	
	FS Works - Subway, Pipe 155m, valve 2 nr, detectors 38 nr, hose reel 1 nr, fire extinguisher 4 nr, connection, etc.	21.0d 25-Aug-16										M-H-H-H-h	4-1-1-4	f- -
BS.I_0090	Drainage System - Waste - Existing WSC Stn, 35 m pipe, 2 valve, 4 pit, 1 switch/ control panel, 1 power supply system	18.0d 24-May-16					111		1 1 1 1 1 1			. N I I I I I I I T		. 1
BS.I_0100	Drainage System - Waste - Subway, Pipe DI/Cl 257+18m, 7 joint, 6 OTC	18.0d 15-Jun-16												H
BS.I_0110	Drainage System - Rainwater Discharge, CI pipe, 8+18m above/below ground, 2 manholes	18.0d 07-Jul-16		-								.		. 1
BS.I_0120	Cleansing Water System - Within WAC Station, 137m copper pipe, 3 gate valve, 2 stopcock, 2 water meter	54.0d 24-May-16												1
BS.I_0130	Cleansing Water System - Subway, 87m copper pipe, 1 gate valve, 1 joint	48.0d 28-Jul-16	22-Sep-16											- 1
BS.I_0140	Installation of Air Handling Unit	110.0d 24-May-16	03-Oct-16				8 19	111	1111				1 + 1 -	1
BS.I_0150	Installation of In-line Centrifugal Fan	110.0d 24-May-16	03-Oct-16				8 18							
BS.I_0160	Installation of Smoke Extraction Fan	110.0d 24-May-16	03-Oct-16				1134	111	11111					
BS.I_0170	Installation of Fan Coil Unit	110.0d 24-May-16	03-Oct-16											
BS.I_0180	Installation of Motorized Smoke & Fire damper	110.0d 24-May-16	03-Oct-16											П
■ BS.I_0190	Installation & integration of control system	110.0d 24-May-16	03-Oct-16						ППП					H
BS.I_0200	Remaining BS Works	21.0d 04-Oct-16	Committee of the Commit				- 111						11111	i
INF.SAMSp	Interface Access for SAMS, Comms, MCS to All Areas, All Levels and Locations (10-Oct'16)	0.0d	03-Oct-16			_					h k		*	
Testing and Com	missioning						111		11111			1111111		- }
BS.TC_0010	T&C ECS - Tests on Ventilation Fans, Air Balancing, Equipment & System, Control, Noise & Sound, etc.	24.0d 04-Oct-16	01-Nov-16					3	$\Pi\Pi\Pi$				1111	
BS.TC_0020	T&C - SAT of HV Sw Boards/ TX, LV Sw Boards & MCC, Lighting Control, etc.	24.0d 04-Oct-16	01-Nov-16					1						Œ.
BS.TC_0030	T&C Fire Services - Performance Test/FH & HR System/ Auto Fire Alam System	24.0d 04-Oct-16	01-Nov-16											
BS.TC_0040	T&C Plumbing and Drainage - P&D Pumps, Control System	24.0d 23-Sep-16	T. 1900				111			.				
BS.TC_0050	T&C ELV System - Contol Systems	24.0d 04-Oct-16						3					1 1	
FSI	FSI - Integrated Test	11.0d 02-Nov-16						1	11111					
	tion and Approval	11100 021101 10				-		1	111111	P				7
BS.SIA_0010	Submit BA14 for completion of breakthrough	6.0d 01-Aug-16	06-Aug-16											l lo
BS.SIA_0020	BD's acknowledgementletter obtained	24.0d 08-Aug-16												
BS.SIA_0030	DSD/ WSD Inspection and Connection	24.0d 24-Oct-16	100											
BS.SIA_0040	Connection for electricity	12.0d 15-Nov-16						4						di.
BS.SIA_0050	Submit Form 1 and Form 2	1.0d 29-Nov-16	n=				1 1 1							;
BS.SIA_0060	FS Inpection / Re-inspection	12.0d 30-Nov-16												
BS.SIA_0070	FS Defect Rectification and Approval	12.0d 15-Dec-16					1.1.7							:
BS.SIA_0080	Form 3 Obtained	1.0d 31-Dec-16					1) (8)							
BS.SIA_0090	BD Inpection/ Re-inspection	6.0d 03-Jan-17						.1.1.1.	1.11.11.1.1					
BS.SIA_0100	EMSD-RB Pre-Inspection by MTRC Ops Team	1.0d 10-Jan-17					27.788							'n
BS.SIA_0110	Remedial Works	24.0d 11-Jan-17	-											į.
BS.SIA_0120	EMSD-RB Formal Inspection	1.0d 11-Feb-17	11-Feb-17		l l									
BS.SIA_0130	Remedial Works & Re-Inspection (If Require)	6.0d 13-Feb-17	18-Feb-17											
BS.SIA_0140	EMSD Letter of "No Objection" Obtained/ Ready to Open	6.0d 20-Feb-17	25-Feb-17				!!!			22022				
BS.SIA_Comp	Complete & pass all statutory, joint Inspection & handover to Operation Team for the BS of new Subway- Programmed	0.0d	25-Feb-17											
D: WAC Modifi	cation Works (Part B Works)							18 1						-
WAC Station Mod									4 I I I I I					d
WMW 0010	Install New Telephone Booth and associated works (NTH)	60.0d 12-Oct-15	21-Dec-15						41111			-		
WMW_0020	Relocate 4 Advertising Panels (NTH)	21.0d 29-Jan-16	The Party Street of the last					1 1				1	(F F 🕍	
WMW_0030	Finishing, Remedial works & site cleaning	24.0d: 01-Aug-16	The second second							A topological				
DCDO FAINIAA	I wasning, remedial works a site dealing	74 UC U -AUC-16	/ / -HID- 10					1 1 1	4 1 1 1 E	6.1				

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

♦ Milestone

Primary Baseline

Critical Remaining Work

Actual Work

Remaining Work



	ev.C_BL_Report (May'15)	1			1	- I m					5_14:52					
tivity ID	Activity Name	Original BL Proj	ct BL Projec	t Actual	Actual Finish	Remark	2014				2015		2016		2017	
		Duration Start	Finish	Start	Finish				IL DIVICI	FIA	JUJAS	NO JE			JIFI	
■ INF.AFCp	Interface Access for AFC, C&C DC in new AFC Audit Room inside WAC, Concourse Level (3-May'15)	0.0d	25-Apr-15				11.1	1919/19	91.1-101		9191.191	8		1715151715	191.1	
■ WMW.AFC_0010	Preparation works for works in WAC station	10.0d 13-Jan-	5 23-Jan-15	01-Nov-14						Name of Street		. 1 Y				
■ WMW.AFC_0020	Internal Hoarding in WAC station (NTH)	12.0d 24-Jan-	5 06-Feb-15													
■ WMW.AFC_0030	Construct new AFC/Audit Room next to Entrance B1, B2, ABWF & BS Works (NTH)	60.0d 07-Feb-	5 25-Apr-15				1									
Existing AFC Aduit F	Room, Maxim's & Circle K Kiosks															
■ WMW.K_0010	Liaison with MTR/ relevance parties for modification works of existing Kiosks & Audit Room	36.0d 27-Apr-	5 09-Jun-15													
WMW.K_0020	Internal Hoarding in WAC station (NTH)	12.0d 10-Jun-	5 24-Jun-15													
■ WMW.K_0030	Modification Works to existing AFC/Audit, Store & Kiosk 3 & 5 (NTH)	90.0d 25-Jun-	5 10-Oct-15													
■ WMW.K_0040	Modification to existing Kiosk 2 (NTH)	90.0d 12-Oct-	5 28-Jan-16											Access to the		
ABWF Works & Mis	sc Works															
WMW.ABWF_0010	ABWF - Plaster & titling 29 m2, baffling ceiling 10 m2, metal cladding 9 m2	70.0d 29-Jan-	5 27-Apr-16													
Breaking Out WAC	Station															
■ WMW.BO_0010	Installation protection measurement for break through	2.0d 03-May-	6 04-May-16	6									I I			
■ WMW.BO_0020	Breaking out WAC Station - Form opening, core holes & wire cut, 60 no. x 0.9m x 0.9m x 1m blocks	54.0d 05-May-	6 09-Jul-16													
■ WMW.BO_0030	Breaking out WAC Station - Installation of temporary steel proping	30.0d 11-May-	6 16-Jun-16													
■ WMW.BO_0040	Breaking out WAC Station - Construct the portal frame	12.0d 11-Jul-10	23-Jul-16													
■ WMW.BO_0050	Demolish the propping steel members	6.0d 25-Jul-1	30-Jul-16							111			11111	1		
Testing and Comm	issioning															
■ WMW.C_0010	Testing and Commissioning	30.0d 26-Feb-	6 05-Apr-16													
WMW.K_Comp	Specified Part 2B - Complete all works at the 2 new Shop Kiosks and hand over to the Employer - Programmed	0.0d	27-Apr-16												8	
E. WAC Station	mporvement Works (Part C Works)															
Improvement Work										1111						
■ WIW_0010	Modify, provide & install new glass barrier to suit new AFC gates (NTH)	34.0d 12-Oct-1	20-Nov-15													
■ WIW_0020	Provide and install additional AFC gates (NTH)	34.0d 21-Nov-	5 02-Jan-16												M	
■ WIW_0030	Provide builder works for TIMS relocation (NTH)	40.0d 29-Aug-	6 17-Oct-16			-				1111						
■ WIW_0040	T&C by Designated Contractor for TIMS (NTH)	40.0d 18-Oct-1	THE RESERVE TO THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW													
■ WIW_0050	Make Good builder works for TIMS (NTH)	53.0d 03-Dec-	6 09-Feb-17													
WIW_Comp	E3- All works in milestone E completed - Programmed	0.0d	09-Feb-17				1			1111					1117	





◆ Milestone

Primary Baseline

Critical Remaining Work

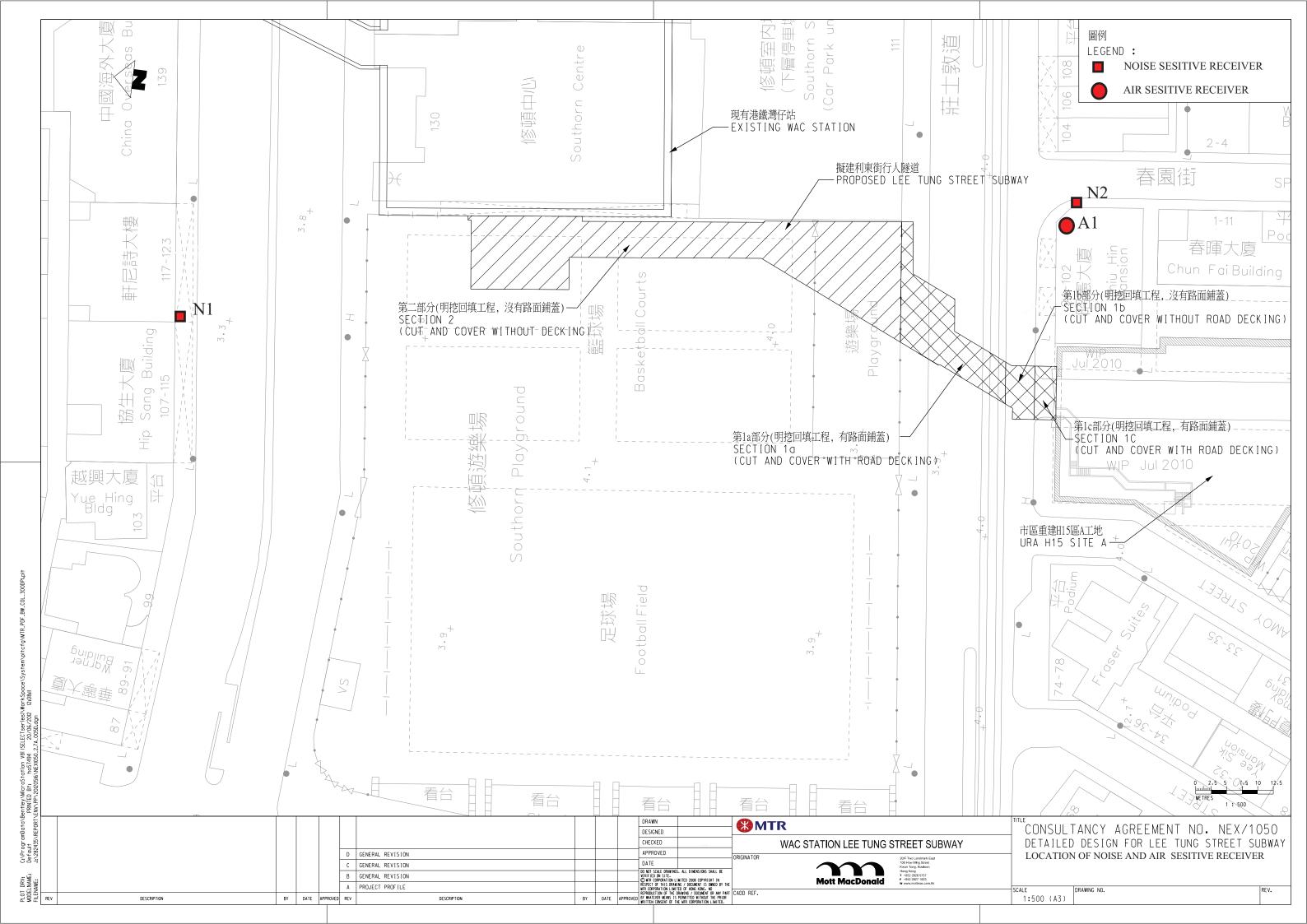
Actual Work

Remaining Work



Appendix C

Monitoring Locations





Appendix D

Calibration Certificate of Monitoring Equipment

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location: Chiu Hin Mansion

Date of Calibration: 9-Apr-15

Location ID: A1

Next Calibration Date: 9-Jun-15

Technician: Mr. Ben Tam

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C)

1017.8
18.0

Corrected Pressure (mm Hg)
Temperature (K)

291

CALIBRATION ORIFICE

Make->	TISCH
Model->	5025A
Serial # ->	1941

Qstd Slope -> Qstd Intercept ->

2.10265

CALIBRATION

L		,						T
	Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
	No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
	18	6.2	6.2	12.4	1.700	51	52.34	Slope = 28.2117
	13	4.7	4.7	9.4	1.480	46	47.21	Intercept = 4.8749
	10	3.5	3.5	7	1.278	40	41.05	Corr. coeff. = 0.9992
	7	2.6	2.6	5.2	1.101	35	35.92	
	5	1.3	1.3	2.6	0.779	26	26.68	

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)

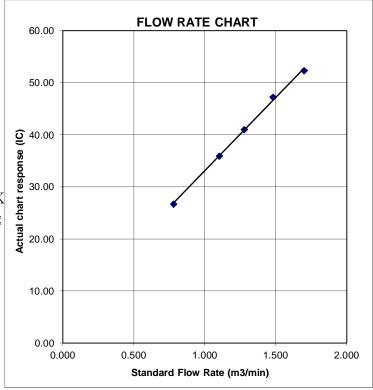
m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature

Pav = daily average pressure





TISCH ENVIRONMENTAL, 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 - Ma Operator		Rootsmeter Orifice I.I	-/	438320 1941	Ta (K) - Pa (mm) -	292 756.92
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA	1.00 1.00 1.00 1.00	1.4880 1.0510 0.9360 0.8920 0.7360	3.2 6.4 7.9 8.8 12.7	2.00 4.00 5.00 5.50 8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0121 1.0078 1.0057 1.0046 0.9993	0.6802 0.9589 1.0745 1.1262 1.3578	1.4258 2.0163 2.2543 2.3644 2.8515	0.9958 0.9916 0.9895 0.9884 0.9832	0.6692 0.9434 1.0571 1.1080 1.3358	0.8784 1.2422 1.3888 1.4566 1.7568
Ostd slo intercep coeffici	t (b) = ent (r) =	2.10265 -0.00335 0.99999	Qa slor intercer coeffici	ot (b) =	1.31664 -0.00206 0.99999

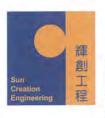
CALCULATIONS

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 = $1/m\{ [SQRT H2O (Ta/Pa)] - b\}$



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

Certificate No.: C151969

證書編號

Date of Receipt / 收件日期: 24 March 2015

校正證書

Description / 儀器名稱

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC15-0720)

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

Relative Humidity / 相對濕度: Temperature / 温度 : $(23 \pm 2)^{\circ}C$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 11 April 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

K C/Lee

Certified By

核證

Project Engineer

Engineer

Date of Issue 簽發日期 KM WII

14 April 2015

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C151969

證書編號

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

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

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

4. Test equipment:

Equipment ID

Description

Certificate No.

CL280 CL281 40 MHz Arbitrary Waveform Generator Multifunction Acoustic Calibrator

C150014 DC130171

Test procedure: MA101N. 5.

6. Results:

6.1 Sound Pressure Level

Reference Sound Pressure Level 6.1.1

6.1.1.1 Before Self-calibration

	UUT	Setting	Applied	UUT			
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	
50 - 130	LAFP	A	F	94.00	1	94.3	

6.1.1.2 After Self-calibration

	UUT	Setting		Applie	d Value	UUT	IEC 60651
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
50 - 130	LAFP	A	F	94.00	1	94.1	± 0.7

6.1.2 Linearity

	UU	Γ Setting		Applied	UUT	
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
50 - 130	L _{AFP}	A	F	94.00	1	94.1 (Ref.)
	5.14.0	4		104.00		104.0
				114.00		114.0

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No.: C151969

證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

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

6.2.2 Tone Burst Signal (2 kHz)

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

6.3 Frequency Weighting

6.3.1 A-Weighting

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory. 本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

Certificate No.: C151969

證書編號

C-Weighting 6.3.2

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

6.4 Time Averaging

	UUT	[Setting		Applied Value			UUT	IEC 60804		
Range (dB)	Parameter	Frequency Weighting	Integrating Time	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
30 - 110	LAcq	A	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
						1/10 ²		90	90.1	± 0,5
			60 sec.			1/103		80	79.4	± 1.0
			5 min.			1/104		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

94 dB : 31.5 Hz - 125 Hz : \pm 0.35 dB - Uncertainties of Applied Value:

250 Hz - 500 Hz : ± 0.30 dB 1 kHz $: \pm 0.20 \text{ dB}$ 2 kHz - 4 kHz : ± 0.35 dB 8 kHz : ± 0.45 dB : ± 0.70 dB 12.5 kHz

104 dB: 1 kHz $: \pm 0.10 \text{ dB (Ref. 94 dB)}$ 114 dB: 1 kHz : ± 0.10 dB (Ref. 94 dB) Burst equivalent level : ± 0.2 dB (Ref. 110 dB

continuous sound level)

The 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.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書儒先獲本實驗所書面批准。

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 解創工程有限公司 —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

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No.: C151967

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC15-0720)

Date of Receipt / 收件日期: 24 March 2015

Description / 儀器名稱 Sound Level Calibrator (EQ084) Manufacturer / 製造商

Cesva

Model No. / 型號

CB-5

Serial No. / 編號

030023

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 : (23 ± 2)°C

Relative Humidity / 相對濕度 : (55 ± 20)%

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期 : 11 April 2015

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

All results are within manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

K C Lee Project Engineer

Certified By 核證

K M Wu Engineer Date of Issue 簽發日期

14 April 2015

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C151967

證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment:

Equipment ID CL130 CL281 TST150A

Description Universal Counter Multifunction Acoustic Calibrator Measuring Amplifier

Certificate No. C143868 DC130171 C141558

- 4. Test procedure: MA100N.
- 5. Results:
- 5.1 Sound Level Accuracy

5.1.1 Before Adjustment

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

Out of Mfr's Spec.

5.1.2 After Adjustment

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

5.2 Frequency Accuracy

5.2.1 Before Adjustment

UUT Nominal	Measured Value	Mfr's	Uncertainty of Measured Value (Hz)
Value (kHz)	(kHz)	Spec.	
1	1,002	1 kHz ± 1.5 %	± 1

5.2.2 After Adjustment

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C151967

證書編號

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

Note:

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



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 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, of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as 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 listed in the HOKLAS Directory of Accredited Laboratories within the test category of 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 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 quality management system (see joint IAF-ILAC-ISO Communiqué). (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



Appendix F

Event and Action Plan



Event and Action Plan for Construction Noise

Enant	Action						
Event	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.	Submit noise mitigation proposals to IEC 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

E4		Action		
Event	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	Check monitoring data submitted by ET; 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		<u> </u>	i	+
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 – April 2015

	DATE	AIR QUALITY	Noise
		24-HOUR TSP	L_{EO} 30MIN
Fri	1-MAY-15		
SAT	2-MAY-15		
SUN	3-MAY-15		
Mon	4-MAY-15		
TUE	5-MAY-15		✓
WED	6-MAY-15	✓	
THU	7-MAY-15		
Fri	8-MAY-15		
SAT	9-May-15		
Sun	10-MAY-15		
Mon	11-MAY-15		
TUE	12-MAY-15	✓	✓
WED	13-MAY-15		
THU	14-MAY-15		
Fri	15-MAY-15		
SAT	16-MAY-15		
Sun	17-MAY-15		
Mon	18-MAY-15	✓	
TUE	19-MAY-15		✓
WED	20-MAY-15		
THU	21-MAY-15		
Fri	22-MAY-15		
SAT	23-MAY-15	✓	
SUN	24-MAY-15		
Mon	25-MAY-15		
TUE	26-MAY-15		
WED	27-MAY-15		✓
THU	28-MAY-15		
Fri	29-MAY-15	✓	
SAT	30-MAY-15		
SUN	31-MAY-15		

✓	Monitoring Day
	Sunday or Public Holiday

Air Quality Monitoring Location

A1 - balcony at 1/F of Chiu Hin Mansion

Construction Noise Monitoring Location:

N1 - 2/F floor of Hennessey Building

N2 - balcony at 1/F of Chiu Hin Mansion



Monitoring Schedule for the Coming Month - May 2015

	DATE	AIR QUALITY	Noise
		24-HOUR TSP	L _{eq} 30min
Mon	1-JUNE-15		
TUE	2-June-15		✓
WED	3-JUNE-15		
THU	4-June-15	✓	
Fri	5-June-15		
SAT	6-June-15		
SUN	7-June-15		
Mon	8-June-15		
TUE	9-June-15		✓
WED	10-June-15	✓	
THU	11-June-15		
Fri	12-June-15		
SAT	13-JUNE-15		
SUN	14-June-15		
Mon	15-JUNE-15		
TUE	16-JUNE-15	✓	
WED	17-June-15		
THU	18-June-15		✓
Fri	19-JUNE-15		
SAT	20-June-15		
SUN	21-JUNE-15		
Mon	22-June-15	✓	
TUE	23-JUNE-15		✓
WED	24-June-15		
THU	25-June-15		
Fri	26-June-15		
SAT	27-June-15	✓	
SUN	28-JUNE-15		
Mon	29-June-15		
TUE	30-June-15		

✓	Monitoring Day
	Sunday or Public Holiday

Air Quality Monitoring Location

A1 - balcony at 1/F of Chiu Hin Mansion

Construction Noise Monitoring Location:

N1 - 2/F floor of Hennessey Building

N2 - balcony at 1/F of Chiu Hin Mansion



Appendix H

Database of Monitoring Results



Result of 24-hour TSP Monitoring

Location: A		Ī	Chiu Hin M Clapsed Time	,	Cł	ıart Rea	ding	Ave.	Standard Filter Weight (g)			Filter Weight		Weight	Dust 24-hour
Date	Sample Number	Initial	Final	Actual (min)	Min	Max	Ave	Temp.	Ave. Press. (hPa)	Flow Rate (m³/min)	Air Volume (std m ³)	Initial	Final	Dust Collected (g)	TSP in Air (μg/m³)
6-May-15	27962	16246.68	16270.58	1434.00	40	41	40.5	25.0	1010.5	1.26	1808	2.8855	2.9620	0.0765	43
12-May-15	27971	16270.58	16294.67	1445.40	40	41	40.5	26.0	1010.2	1.26	1819	2.8241	2.9816	0.1575	87
18-May-18	28014	16294.67	16318.90	1453.80	40	41	40.5	26.1	1009.1	1.26	1828	2.7751	2.8684	0.0933	52
23-May-15	28010	16318.90	16343.10	1452.00	40	41	40.5	26.2	1008.2	1.26	1824	2.7786	2.8341	0.0555	31
29-May-15	28029	16343.10	16367.33	1453.80	40	41	40.5	26.8	1007.6	1.25	1824	2.8263	2.9574	0.1311	72

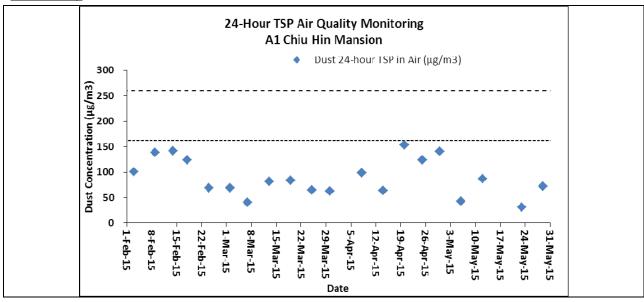


Appendix I

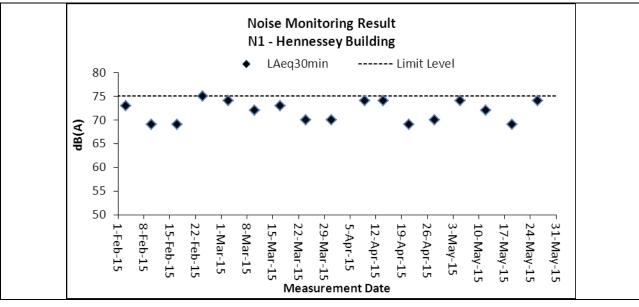
Graphical Plots

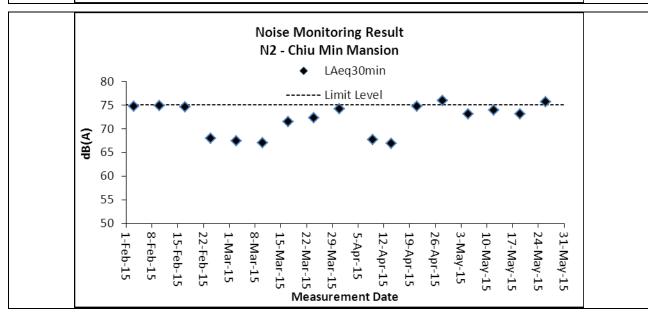


Air Quality



Construction Noise







Appendix J

Meteorological Information



		Meteorological Data downloaded from H	KO in the	Reporting			
			Total			Park Station	T
Date		Weather	Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	
1-May-15	Fri	Hot with sunny periods in the afternoon. Mainly cloudy with a few showers tonight. Moderate southerly winds.	0.5	27	7.5	80	E/SE
2-May-15	Sat	Sunny periods in the morning. A few showers later. Moderate south to southeasterly winds	Trace	27.6	8.4	77	E.SE
3-May-15	Sun	Sunny periods in the morning. A few showers later. Moderate south to southeasterly winds	Trace	28.7	7	76.5	W/SW
4-May-15	Mon	Sunny periods in the morning. A few showers later. Moderate south to southeasterly winds	Trace	28.5	6.9	76.7	W/NW
5-May-15	Tue	Mainly cloudy with isolated showers. Moderate south to southeasterly winds.	3.9	26.7	7.6	79.7	S/SW
6-May-15	Wed	Mainly cloudy. Light to moderate southerly winds.	0.6	26.3	7.5	84.7	E/SE
7-May-15	Thu	Mainly cloudy with isolated showers. Moderate southerly winds.	0.3	28.3	7.4	81.5	S/SW
8-May-15	Fri	Mainly cloudy with isolated showers. Moderate southerly winds.	0	28.3	11.2	77.2	S/SW
9-May-15	Sat	Mainly cloudy with isolated showers. Moderate southerly winds.	7.3	27	9.5	82	W/SW
10-May-15	Sun	Mainly cloudy with isolated showers. Moderate southerly winds.	20.1	26.3	6.5	87.5	E/SE
11-May-15	Mon	Mainly cloudy with a few showers. Moderate east to southeasterly winds.	51	25.7	11.3	86.5	E/SE
12-May-15	Tue	Sunny periods during the day. Cloudy tonight. Moderate northerly winds.	0	25.6	6	77.2	W/NW
13-May-15	Wed	Mainly cloudy with isolated showers. Moderate easterly winds, becoming southerlies later.	0	26.4	9	81.2	E/SE
14-May-15	Thu	Mainly cloudy. Hot with sunny periods in the afternoon. Moderate south to southeasterly winds.	Trace	28.6	8	77	S/SW
15-May-15	Fri	Mainly cloudy with a few showers. Moderate south to southwesterly winds.	0	28.9	7.5	76.7	S/SW
16-May-15	Sat	Mainly cloudy with a few showers. Moderate south to southwesterly winds.	18.4	26.4	5.5	88	W/NW
17-May-15	Sun	Cloudy to overcast with rain and squally thunderstorms. Moderate south to southwesterly winds.	5.7	26.9	12.9	84.2	S/SW
18-May-15	Mon	Mainly cloudy with a few showers. Moderate south to southwesterly winds.	0.9	27.5	8.9	84	SW
19-May-15	Tue	Cloudy to overcast with rain and squally thunderstorms. Moderate south to southwesterly winds.	1.2	28.1	12.5	85.5	SW
20-May-15	Wed	Cloudy to overcast with rain and squally thunderstorms. Moderate south to southwesterly winds.	107.7	27.2	12.7	87.5	W/SW
21-May-15	Thu	Cloudy with showers. There will be a few thunderstorms later. Fresh easterly winds, strong offshore.	12.6	23.7	12.5	91.2	E/SE
22-May-15	Fri	Cloudy with a few showers. Showers will be more frequent tonight. Moderate easterly winds, fresh at times.	0.7	22.9	12.9	92.5	E/SE
23-May-15	Sat	Cloudy with a few showers. Isolated thunderstorms at first. Light to moderate southerly winds.	169.4	25	9	97.5	E/SE
24-May-15	Sun	Cloudy with a few showers. Isolated thunderstorms at first. Light to moderate southerly winds.	8.2	26	5.7	89.5	W/NW
25-May-15	Mon	Cloudy with a few showers. Isolated thunderstorms at first. Light to moderate southerly winds.	29.4	28.5	8	82	S
26-May-15	Tue	Mainly cloudy with isolated showers. Moderate south to southwesterly winds.	64.6	25.9	11.2	93.7	S/SW
27-May-15	Wed	Mainly cloudy with isolated showers. Moderate south to southwesterly winds.	0.2	29.3	9	84.5	SW
28-May-15	Thu	Mainly fine and very hot during the day . Moderate south to southwesterly winds.	1.4	30	8.2	80.5	W/SW
29-May-15	Fri	Mainly fine apart from isolated showers. Very hot in the afternoon. Moderate south to southwesterly winds.	0	30.5	8.2	77.2	W/SW
30-May-15	Sat	Hot with sunny intervals. There will be a few showers. Moderate southerly winds.	7	29.2	8.5	80.5	W/SW
31-May-15	Sun	Hot with sunny intervals. There will be a few showers. Moderate southerly winds.	1.9	29.2	6.5	81.5	W/NW



Appendix K

Monthly Summary Waste Flow Table

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

Monthly Summary Waste Flow Table for 2015

Name of Emp	oloyer: MTR Co	rporation Limited									Contract No.:	C65931-13C			
			Ac	tual Quantities	of Inert C&D	Materials Gene	rated Monthly				Actual Qu	Actual Quantities of Non-Inert C&D Wastes Generated Monthly			
Month	Total Quantity	Broken Concrete	Building Debris	Mixed Rock & Soil	Bentonite	Rubbish	Slurry	Rock	Soil	Reused in this Project	Metals	Paper/ cardboard	Plastics	Chemical Waste	Others, e.g. general
	(in m ³)	(in m³)	(in m ³)	(in m ³)	(in m ³)	(in m3/ Litre)	(in m ³)								
Jan	1.69784	0	0	0	0	0	0	0	1.69784	0	0	0	0	0	0.0009
Feb	1.14858	0	0	0	0	0	0	0	1.14848	0	0	0	0	0	0.0001
Mar	1.65921	0	0	0	0	0	0	0	1.65921	0	0	0	0	0	0.0009
Apr	0.07772	0.06172	0	0	0	0	0	0	0.016	0	0	0	0	0	0.04404
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14593
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4.58335	0.06172	0	0	0	0	0	0	4.52153	0	0	0	0	0	0.19187



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 IM	·					
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	To minimize	Contractor	Work site	Construction	ProPECC PN2/93,
	• movable barrier can achieve a 5 dB(A) reduction for movable PME and 10 dB(A) reduction for stationary PME;	construction noise emissions			Stage	Noise Control Ordinance and EIAO Guidance
	• noise enclosure can achieve 15dB(A) reduction for PME;					Note NO. 9/2010
	 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/m² shall be required to achieve the maximum screening effect (and minimum 10kg/m² 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.					
S.5.1.1	General Construction Noise Control Measures	To minimize	Contractor	Work site	Construction	ProPECC PN2/93
	• 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;	construction noise emissions			Stage	and Noise Control Ordinance
	• 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;					



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 QUAL	ITY IMPACT	l				
S.5.1.2	Construction Dust Control Measures	To minimize the dust	Contractor	Work site	Construction	Air Pollution
	• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;	impacts arising from the construction works			Stage	Control (Construction Dust) Regulation
	• 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					



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 Q	UALITY IMPACT					
S.5.1.3	Construction Water Quality Impact Measures	To reduce water	Contractor	Work site	Construction	ProPECC PN1/94;
	Collection of wastewater into a sedimentation tank for treatment before discharge into the public drainage system;	quality impact induced by the construction work			Stage	Water Pollution Control Ordinance
	• 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.					
WASTE M	ANAGEMENT		ı			
S.5.1.4	Construction Waste Management Measures	To adopt waste	Contractor	Work site	Construction	Waste Disposal
	Scrap metals or abandoned equipment should be recycled if possible;	management measures in the way			Stage	Ordinance (Cap. 354); Waste
	Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;	of avoiding, minimizing, reusing				Disposal (Chemical Waste) (General)
	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;	and recycling so as to reduce waste generation				Regulation; DEVB TCW No. 6/2010; ETWB TCW No. 19/2005.
	Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes; and					



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. 					
LANDSCA	PE AND VISUAL IMPACT		1			
S.5.1.5	Landscape and Visual Measures Clear demarcation of works area to prevent damages to existing trees in close proximity;	To reduce landscape and visual impact by construction works.	Contractor	Work Site and nearby playground	Construction Stage	EIAO; ETWB TCW No. 3/2006.
	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 colours.					