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QUARTERLY EM&A REPORT

December 2017 – February 2018

Client	**:**	Civil Engineering and Development Department, HKSAR
Contract No.	**:**	KLN/2015/07
Contract Name	**:**	Environmental Monitoring Works for Contract KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Report No.	**:**	0405/15/ED/0998A
EP-337/2009		New Distributor Roads Serving the Planned Kai Tak Development Area
EP-339/2009/A		Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport
EP-451/2013		Trunk Road T2

Prepared by	**:**	Janet W. T. Yu
Reviewed by	**:**	Alfred Y. S. Lam
Certified by	**:**	

Colin K. L. Yung
Environmental Team Leader
MateriaLab Consultants Limited

Ref.: CEDKTDS3EM00_0_0279L.18

11 April 2018

Hyder-Meinhardt Joint Venture
20/F., AXA Tower,
Landmark East,
100 How Ming Street,
Kwun Tong,
Kowloon, Hong Kong

By Post and Email

Attention: Mr. Wong W K, Chris

Dear Mr. Wong,

Re: Contract No. KL/2014/03 – Kai Tak Development – Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway
Quarterly EM&A Report for December 2017 to February 2018

Reference is made to the Environmental Team's submission of the Quarterly EM&A Report for December 2017 to February 2018 (Report No. 0405_15_ED_0998A) we received by e-mail on 10 April 2018.

Please be informed that we have no adverse comment on the captioned report.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Environ Hong Kong Limited

F. C. Tsang
Independent Environmental Checker

c.c.	CEDD	Attn.:	Ms. Amy Chu	Fax: 2369 4980
	MateriaLab	Attn.:	Mr. Colin K. L. Yung	Fax: 2450 8032
	CRBC	Attn.:	Mr. Arnold Chan	Fax: 2283 1689

Q:\Projects\CEDKTDS3EM00\02_Proj_Mgt\02_Corr\2017\CEDKTDS3EM00_0_0279L.18.docx

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EXECUTIVE SUMMARY

i. The Civil Engineering and Development Department HKSAR has appointed MateriaLab Consultants Limited (MCL) to undertake the Environmental Team services for the Project and implement the EM&A works.

ii. This is the eighth Quarterly EM&A Report presents the environmental monitoring and audit works for the period between 1 December 2017 and 28 February 2017. As informed by the Contractor, major activities in the reporting period included:

December 2017	January 2018	February 2018
• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; and • Excavation and ELS construction.	• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; and • Excavation and ELS construction.	• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; and • Excavation and ELS construction.

Breaches of the Action and Limit Levels

iii. No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations.

Complaint, Notification of Summons and Successful Prosecution

iv. No environmental complaint and no notification of summons and successful prosecution were received in the reporting period.

1. INTRODUCTION

1.1 Background

1.1.1 The Kai Tak Development is located in the south-eastern part of Kowloon Peninsula of the HKSAR, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling.

1.1.2 Contract No. KL/2014/03 is the works package to construct an approximately 420m long supporting underground structure (SUS) underneath Shing Cheong Road and Cheung Yip Street. The EM&A programme under this Contract is governed by three EPs (EP-337/2009, EP-339/2009/A and EP-451/2013) and two EM&A Manuals (AEIAR-130/2009 and AEIAR-174/2013). The Works to be executed under this Contract and corresponding EPs include but not be limited to the following main items:

EP-451/2013 – Trunk Road T2

(i) Construction of approximately 420m long supporting underground structure (SUS) including diaphragm walls, barrettes, piled foundation, top and bottom slabs, end wall and adits underneath Shing Cheong Road and Cheung Yip Street;

EP-337/2009 – New Distributor Roads Serving the Planned Kai Tak Development

(ii) Widening and re-alignment of Cheung Yip Street of approximately 330m long and associated footpaths;
(iii) Demolition, reconstruction and widening of Shing Cheong Road of approximately 410m long and associated footpaths;
(iv) Construction of drainage outfall and modification of existing seawall;
(v) Construction of ancillary works including surface drainage, sewerage, water, fire fighting, street lighting, street furniture, road marking, road signage, utilities and services, irrigation and landscape works.

EP-339/2009/A – Decommissioning of the Remaining Parts (Ex-GFS Building, Radar Station and Hong Kong Aviation Club) of the former Kai Tak Airport

(vi) Demolition of RADAR Tower and guard house;

Other works not covered by any EP

(vii) Construction of two subways between Phase II of New Acute Hospital (Site A) and Hong Kong Children's Hospital (Site C), and between Phase I of New Acute Hospital (Site B) and Site C;
(viii) Construction of District Cooling System (DCS) along Cheung Yip Street and Shing Cheong Road

1.1.3 The location and boundary of the site is shown in **Figure 1**.

1.1.4 This Quarterly EM&A report is required under Section 16.1.2 and 16.7.1 of the EM&A Manual AEIAR-130/2009. It is to report the results and findings of the EM&A programme required in the EM&A Manual.

1.1.5 This is the eighth Quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project within the period between 1 December 2017 and 28 February 2018.

1.2 Project Organization

1.2.1 The project proponent was the Civil Engineering and Development Department, HKSAR (CEDD). Hyder Meinhardt Joint Venture (HMJV) was commissioned by CEDD as the Engineer for the Project. Ramboll Hong Kong Limited was commissioned as the Independent Environmental Checker (IEC). China Road and Bridge Corporation (Hong Kong) (CRBC) was appointed as the main contractor for the construction works under the contract KL/2014/03. MateriaLab Consultants Limited (MCL) was appointed as the Environmental Team (ET) by CEDD to implement the EM&A programme for the Project.

1.2.2 The organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Project Proponent (CEDD)	Co-ordinator	Ms. Amy Chu	3106 3172	2369 4980
Engineer's Representative (HMJV)	Chief Resident Engineer	Mr. W. K., Chris Wong	3742 3803	3742 3899
IEC (Ramboll Hong Kong Limited)	Independent Environmental Checker	Mr. F. C. Tsang	3465 2851	3465 2899
Main Contractor (CRBC)	Site Agent	Mr. Chan See Wai, Arnold	9380 4110	2283 1689
	Environmental Officer	Mr. Calvin So	9724 6254	2283 1689
ET (MCL)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

1.3 Construction Programme and Activities

1.3.1 The construction of the Project commenced in February 2016 and is expected to complete in 2020. The construction programme is shown in **Appendix A**. A summary of the major construction activities undertaken in the reporting period were:

December 2017	January 2018	February 2018
• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; and • Excavation and ELS construction.	• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; • Excavation and ELS construction.	• Excavation and laying of drainage pipe and manhole; • Seawall modification works; • Construction of tunnel box structure; • D-wall construction works; • Pumping test; • Excavation and ELS construction.

2. SUMMARY OF EM&A REQUIREMENTS AND MONITORING RESULTS

2.1 Monitoring Requirement

In accordance with the approved EM&A Manuals, 24-hour Total Suspended Particulates (TSP) level and Leq (30min) at the designated monitoring stations is required. Impact 24-hour TSP monitoring should be carried out at least once every 6 days. In case of complaints, 1-hour TSP monitoring should be carried out at least 3 times per 6 days when the highest dust impacts are likely to occur. Leq (30min) monitoring is conducted for at least once a week during the construction phase between 0700 and 1900 on normal weekdays. The Action and Limit Levels of the air quality monitoring and noise monitoring are given in **Appendix C**

2.2 Monitoring Locations

2.2.1 According to the EM&A Manual, three monitoring locations for air quality monitoring and noise monitoring, namely KTD1, KTD2 and KER1, are covered by this Contract within the South Apron Area of Former Kai Tak Airport. The other two air quality monitoring locations and two noise monitoring locations which are identified in Cha Kwo Ling area, are farther than 500m and 300m away from the site boundary respectively and thus not covered by this Contract. The monitoring works in Cha Kwo Ling area are covered by other Contract(s) respectively.

2.2.2 According to the approved alternative baseline air quality and noise monitoring locations (EPD reference: EP2/K19/A/21 Pt.5), the original monitoring locations (KTD1, KTD2 and KER1) are proposed to be replaced by alternative monitoring locations (KTD1a, KTD2a and KER1b), they are summarized in **Table 2.1** and shown in **Figure 2**.

Table 2.1 Location of Air Quality Monitoring and Noise Monitoring Station

Monitoring Station	Location
KTD1a	Centre of Excellence in Paediatrics (Children's Hospital)
KTD2a	G/IC Zone next to Kwun Tong Bypass (Future Hospital at Site 3C1)
KER1b	Site Boundary at Cheung Yip Street

2.3 Results and Observations

2.3.1 No Action and Limit Level exceedance for 24-hr TSP was recorded in the reporting period at all monitoring stations.

2.3.2 No Action / Limit Level exceedance for construction noise was recorded in the reporting period at all monitoring stations.

2.3.3 No raining and wind with speed over 5 m/s was observed during noise monitoring according to the onsite observation.

2.3.4 During the reporting period, major dust sources including loading and unloading of C&D wastes, vehicles movement were observed in the site. Major noise sources including noise emission from plant & PME and some other construction activities, travel of vehicles, loading and unloading of C&D waste were observed in the site. Non-project related construction activities at the nearby construction site and road traffic along Shing Cheong Road, Cheung Yip Street and the Kwun Tong By-pass were observed. The above factors may affect the monitoring results.

2.3.5 Graphical presentation of the monitoring data in the reporting period is presented in **Appendix D**.

2.4 Comparison of Monitoring Results with EIA Predictions

2.4.1 The monitoring data was compared with the EIA predictions as summarized in **Table 2.4** and **Table 2.5**.

Table 2.4 Comparison of 24-hr TSP data with EIA predictions

Monitoring Station	Receiver Reference	Predicted Maximum 24-hour TSP Concentration (μg/m³)	24-hour TSP concentration in Reporting Period (μg/ m³)			Average 24-hour TSP concentration in Reporting Period (μg/ m³)		
			Dec 2017	Jan 2018	Feb 2018	Dec 2017	Jan 2018	Feb 2018
KTD1a	KTD3	126	91 - 157	32 - 167	59 - 136	123	114	108
KTD2a	-	-	32 - 93	60 - 89	40 - 67	67	75	50
KER1b	KTD6	169	38 - 98	37 - 90	14 - 68	61	60	39

Note:
For KTD2a, there was no receiver reference in the EIA report, EIAR-174/2013.
Predicted Maximum TSP Concentration extracted from Table 4.14 of EIA Report, EIAR-174/2013.

Table 2.5 Comparison of Noise Monitoring data with EIA predictions

Monitoring Station	Receiver Reference	Maximum Predicted Mitigated Construction Noise Level, dB(A)	Leq (30min) dB(A) in Reporting Period		
			Dec 2017	Jan 2018	Feb 2018
KTD1a	KTD1	74	65 - 74	65 - 74	68 - 73
KTD2a	KTD2	75	60 - 69	62 - 68	54 - 66
KER1b	KER1	75	64 - 68	66 - 71	61 - 71

Note:
Maximum Predicted Mitigated Construction Noise Level extracted from Table 5.13 of EIA Report, EIAR-174/2013.

2.4.2 The 24-hour TSP monitoring result of KTD1a on 7, 13 and 22 December 2017, 3 and 26 January 2018 and 6 and 21 February 2018 exceeded the prediction in the approved EIA report. No project-related dust source was observed during the site monitoring. The discrepancy between the 24-hour TSP concentration and EIA Prediction in KTD1a is considered due to dust source from the non-project related construction activities near the monitoring station and the road traffic along Shing Fung Road.

2.4.3 The noise monitoring results in the reporting months did not exceed the Maximum Predicted Mitigated Construction Noise Level in the approved Environmental Impact Assessment (EIA) Report and no Action / Limit Level exceedance was recorded in the reporting period.

3. LANDSCAPE AND VISUAL

3.1 Results and Observations

3.1.1 To monitor and audit the implementation of landscape and visual mitigation measures, 12 weekly Landscape and Visual Site audits were carried out and 6 of them were carried out by a Registered Landscape Architect. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009). During the Site audit on 1 March 2018, Contractor was reminded that stockpile at Portion H should be properly covered.

3.1.2 During the Site audit on 11 January 2018, it was observed that broken concrete should be removed promptly in Zone 1. During the Site audit on 14 February 2018, it was observed that stockpiling at the end of zone 4 were not properly covered, contractor should cover the stockpile ASAP for the holiday.

3.1.3 No non-compliance was recorded in the weekly Landscape and Visual Site audits in the reporting period.

3.1.4 Observations and recommendations during site audits are summarized in **Table 5.1**.

4. WASTE MANAGEMENT

4.1 Results and Observations

4.1.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

4.1.2 The amount of wastes generated by the site activities in the reporting period is shown in **Appendix E**.

4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

5. SITE INSPECTION

5.1 Site Inspection

5.1.1 Site inspections were carried out weekly to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix F**.

5.1.2 In the reporting quarter, 12 site inspections were carried out. 6 of them were the joint inspections with the IEC, ER, the Contractor and the ET.

5.1.3 No outstanding issues were reported during the reporting period.

5.1.4 All the follow-up actions requested by Contractor's ET and IEC during the site inspections were undertaken as reported by the Contractor and confirmed in the following weekly site inspection conducted during the reporting month.

5.1.5 Details of observations recorded during the site inspections are presented in **Table 5.1**.

Table 5.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	7 December 2017	Open stockpile should be covered with impermeable sheeting to facilitate dust suppression (Portion I). Open stockpile shall be covered with impermeable sheeting Properly.	The item was rectified by the Contractor and inspected on 14 December 2017.
	7 December 2017	Dusty materials have accumulated on the ground surface on Portion I. Regular cleaning should be carried out.	The item was rectified by the Contractor and inspected on 14 December 2017.
	11 January 2018	Broken concrete should be removed promptly (Zone 4).	The item was rectified by the Contractor and inspected on 17 January 2018.
	17 January 2018	The load of dusty materials carried by vehicle leaving the site should be covered by impervious sheeting.	The item was rectified by the Contractor and inspected on 25 January 2018.

Parameters	Date	Observations and Recommendations	Follow-up
	8 February 2018	Contractor was reminded to conduct frequent watering on excavation area to suppress dust (Zone 2).	The item was rectified by the Contractor and inspected on 14 February 2018.
	14 February 2018	Open stockpile were observed (Zone 4). Open stockpile shall be removed or cover properly.	The item was rectified by the Contractor and inspected on 22 February 2018.
Noise	7 December 2017	Acoustic fabric should be used for the operation of breaking tip (Zone 4). Acoustic fabric shall be provided to reduce noise.	The item was rectified by the Contractor and inspected on 14 December 2017.
	28 December 2017	When operating breaking tip, acoustic fabric should be used to reduce noise generation (Zone 2). Acoustic fabric shall be provided.	The item was rectified by the Contractor and inspected on 4 January 2018.
Water Quality	14 December 2017	Untreated construction runoff was found flow into the drainage (Zone 1). Contractor should prevent untreated construction runoff discharge into drainage, mitigation measures shall be carried out.	The item was rectified by the Contractor and inspected on 20 December 2017.
	11 January 2018	Construction runoff was discharged into drainage without treatment (Zone 1). Sand bag should be provided to prevent direct discharge of construction runoff.	The item was rectified by the Contractor and inspected on 17 January 2018.
	22 February 2018	Debris and silt were found near the drainage opening (Zone 2). Sandbag or other mitigation measures should be provided.	The item was rectified by the Contractor and inspected on 1 March 2018.
Chemical and Waste Management	14 February 2018	Leakage of drip tray was observed (Zone 1). The drip tray shall be removed or replaced.	The item was rectified by the Contractor and inspected on 22 February 2018.

Parameters	Date	Observations and Recommendations	Follow-up
	14 February 2018	Open stockpile were observed (Zone 4). Open stockpile shall be removed or cover properly.	The item was rectified by the Contractor and inspected on 22 February 2018.
Land Contamination	NA		
Landscape and Visual Impact	11 January 2018	Broken concrete should be removed promptly (Zone 4).	The item was rectified by the Contractor and inspected on 17 January 2018.
	14 February 2018	Open stockpile were observed (Zone 4). Open stockpile shall be removed or cover properly.	The item was rectified by the Contractor and inspected on 22 February 2018.
General	NA		

6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

6.1 Environmental Exceedance

6.1.1 No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations. Number of exceedance in the reporting period was summarized in **Table 6.1**.

Table 6.1 Summary of Exceedance in Reporting Period

Monitoring Station		Number of exceedance in the reporting period						
		24hr TSP μg/m³			Leq (30min) dB(A)			Total
		December 2017	January 2018	February 2018	December 2017	January 2018	February 2018	
KTD1a	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
KTD2a	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
KER1b	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0
Total	AL	0	0	0	0	0	0	0
	LL	0	0	0	0	0	0	0

6.2 Complaints, Notification of Summons and Prosecution

6.2.1 No inspection notice, notification of summons or prosecution was received in this reporting period. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Table 6.2, 6.3 and 6.4**.

Table 6.2 Environmental Complaints Log

Complaint Log No.	Date of Notification	Received From and Received By	Nature of Complaint	Date of Investigation	Outcome	Date of Reply
1	7 December 2016	Andy Choy	Air	13 February 2017	Project-related	13 February 2017
2	9 February 2017	Andy Choy	Air	22 February 2017	Not Project-related	7 March 2017
3	2 May 2017	Andy Choy	Noise	4 May 2017	Not Valid	22 May 2017
4	16 July 2017	HMJV	Water Quality	4 August 2017	Not Project-related	4 August 2017

Table 6.3 Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints in the Reporting Period			Cumulative Project-to-Date
		December 2017	January 2018	February 2018	
Air	2	0	0	0	2
Noise	1	0	0	0	1
Water	1	0	0	0	1
Waste	0	0	0	0	0
Total	0	0	0	0	0

Table 6.4 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Reporting Period			Cumulative Project-to-Date
		December 2017	January 2018	February 2018	
Air	0	0	0	0	0
Noise	0	0	0	0	0
Water	0	0	0	0	0
Waste	0	0	0	0	0
Total	0	0	0	0	0

7. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

7.1 Implementation Status

7.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting period is summarized in **Appendix F**.

8. CONCLUSIONS

8.1.1 No Action and Limit Level exceedance for 24-hr TSP and noise was recorded in the reporting period at all monitoring stations.

8.1.2 No complaint of air quality was received. Therefore, no impact 1-hour TSP monitoring was conducted in the reporting period.

8.1.3 12 weekly environmental site inspections were carried out in the reporting period. Recommendations on mitigation measures on air quality, water quality, noise, waste management, land contamination and landscape and visual impact were given to the Contractor for remediating the deficiencies identified during the site inspections.

8.1.4 12 weekly Landscape and Visual Site audits were carried out on in the reporting period and 6 of them were carried out by a Registered Landscape Architect in the reporting period. The weekly Landscape and Visual Impact reports were counter-signed by IEC as according to the requirement of EM&A Manual (AEIAR-130/2009). No non-compliance was recorded in the weekly Landscape and Visual Site audits in the reporting period.

8.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting period.

8.2 Comment and Recommendations

8.2.1 The recommended environmental mitigation measures, as proposed in the EIA reports and EM&A Manuals shall be effectively implemented to minimize the potential environmental impacts from the Project. The EM&A programme would effectively monitor the environmental impacts generated from the construction activities and ensure the proper implementation of mitigation measures.

8.2.2 According to the environmental audit performed in the reporting period, the following recommendations were made:

Air Quality Impact
- Open stockpile should be covered properly to facilitate dust suppression.
- Ground surface should be cleaned regularly to prevent accumulation of dusty materials.
- The load of dusty materials carried by vehicle leaving the site should be covered by impervious sheeting.
- Broken concrete should be removed promptly.
- Frequent watering on excavation area to suppress dust.

Construction Noise Impact
- Acoustic fabric should be used while operating breaking tip.

Water Quality Impact
- Construction runoff should be treated before flow into the drainage.
- Debris and silt should be kept clear near the drainage opening.

Chemical and Waste Management
- Leakage of drip tray shall be removed or replaced.

Land Contamination

- No specific observation was identified in the reporting period.

Landscape and Visual Impact

- Broken concrete should be removed or covered promptly.
- Open stockpile shall be removed or covered properly.

General Condition

- No specific observation was identified in the reporting period.

Permit / Licenses

- No specific observation was identified in the reporting period.

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Figure 1

Project General Layout

PROPOSED
NEW ACUTE HOSPITAL
(PHASE II)

PROPOSED
NEW ACUTE HOSPITAL
(PHASE I)

HONG KONG CHILDREN'S HOSPITAL
(HKCH)

PUBLIC WORKS
CENTRAL LABORATARY
BUILDING

Proposed Fire Station cum Ambulance Facility

WANG CHU ROAD

TSUNG KWO ROAD

TSUNG YIP STREET

KAI HING ROAD

LAM CHAK STREET

Kowloon Bay Waste Recycling Centre

Temporary Department Vehicle Examination Centre

Octa Tower

Pacific Trade Centre

Kowloon Godown

Kerry D.G. Godown (Kowloon Bay)

Open Storage

Elevated Road

Podium

Road

Seawall

CREEK

KAI TAK BRIDGE

KEY PLAN

KAI TAK

KOWLOON BAY

JORDAN VALLEY

SAU MAU PING

NGAU TAU KOK

KWUN TONG

SAU KOK

AWA WAN

To Kwa Wan Typhoon Shelter

Kwun Tong Typhoon Shelter

SAI TSO WAN

SHA KWO LING

KWUN TONG TSAI WAN (YAU TONG BAY)

YAU TONG

LEGENDS:

- SITE BOUNDARY
- HOSPITAL SITE BOUNDARY
- PROPOSED SUPPORTING UNDERGROUND STRUCTURE
- PROPOSED SUBWAYS
- PROPOSED ROADWORKS
- PROPOSED DISTRICT COOLING SYSTEM
- DEMOLITION OF RADAR TOWER

Rev.	Date	Drawn	Description	Checked	Approved

Hyder-Meinhardt JV

CLIENT

土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

PROJECT

CONTRACT NO. KL/2014/03
KAI TAK DEVELOPMENT - STAGE 3
INFRASTRUCTURE WORKS FOR DEVELOPMENTS AT THE SOUTHERN PART OF THE FORMER RUNWAY

TITLE

GENERAL LAYOUT PLAN

DESIGNED			ENG. CHECK		
DRAWN			COORDINATION		
DWG. CHECK			APPROVED		

SCALE AT A1	STATUS	REV
1 : 1000		A

Drawing No.

FIGURE 1.0

PRINTED BY: kitchan 18/2/2015 13:00:43
FILENAME: K:\9164 Trunk Road T2\Tender Drawing (Contract II)\Figure 1.dgn

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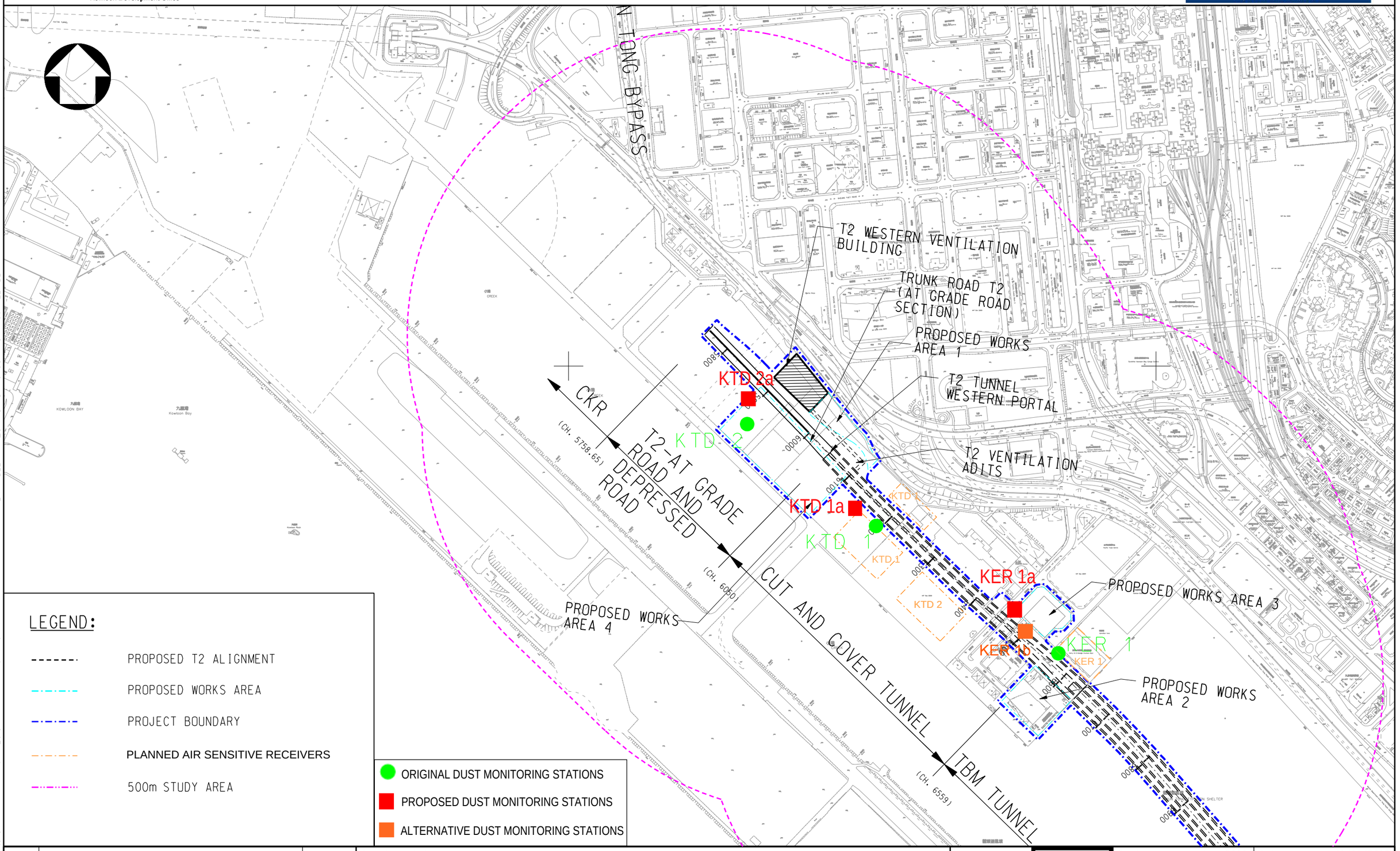
Figure 2

Air and Noise Monitoring Locations

土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
KAI TAK DEVELOPMENT - TRUNK ROAD T2 AND INFRASTRUCTURE AT SOUTH APRON - INVESTIGATION, DESIGN AND CONSTRUCTION

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED AIR SENSITIVE RECEIVERS
- 500m STUDY AREA

- ORIGINAL DUST MONITORING STATIONS
- PROPOSED DUST MONITORING STATIONS
- ALTERNATIVE DUST MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED DUST MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size: A3

Scale: 1 : 6000 | Date: 30/01/2012

File name

Drawing No.: FIGURE 2.1a (revised)

Rev.: --

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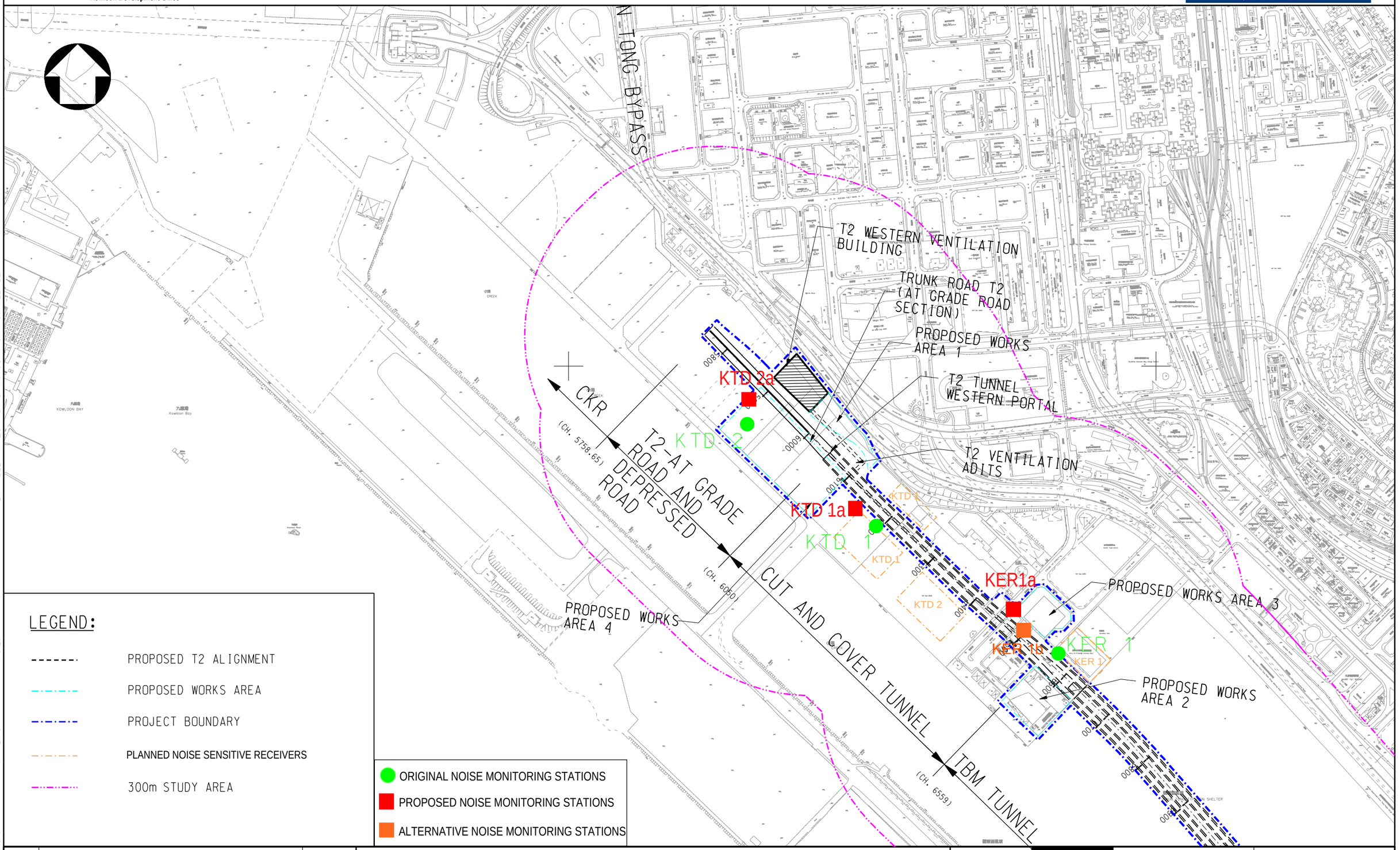
土木工程拓展署
Civil Engineering and Development Department
九龍拓展處
Kowloon Development Office

AGREEMENT NO. CE 38/2008(HY)
KAI TAK DEVELOPMENT - TRUNK ROAD T2 AND INFRASTRUCTURE AT SOUTH APRON - INVESTIGATION, DESIGN AND CONSTRUCTION

Hyder-Meinhardt JV



LEGEND:

- PROPOSED T2 ALIGNMENT
- PROPOSED WORKS AREA
- PROJECT BOUNDARY
- PLANNED NOISE SENSITIVE RECEIVERS
- 300m STUDY AREA

- ORIGINAL NOISE MONITORING STATIONS
- PROPOSED NOISE MONITORING STATIONS
- ALTERNATIVE NOISE MONITORING STATIONS

Rev.	Description	Date

Drawing title

IDENTIFIED NOISE MONITORING STATIONS AT SOUTH APRON OF FORMER KAI TAK AIRPORT

Original Size: A3

Scale: 1 : 6000 | Date: 30/01/2012

File name

Drawing No.: FIGURE 3.1a (revised)

Rev.: --

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MATERIALAB CONSULTANTS LIMITED
Room 723 & 725, 7/F, Block B,
Profit Industrial Building,
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Appendix A

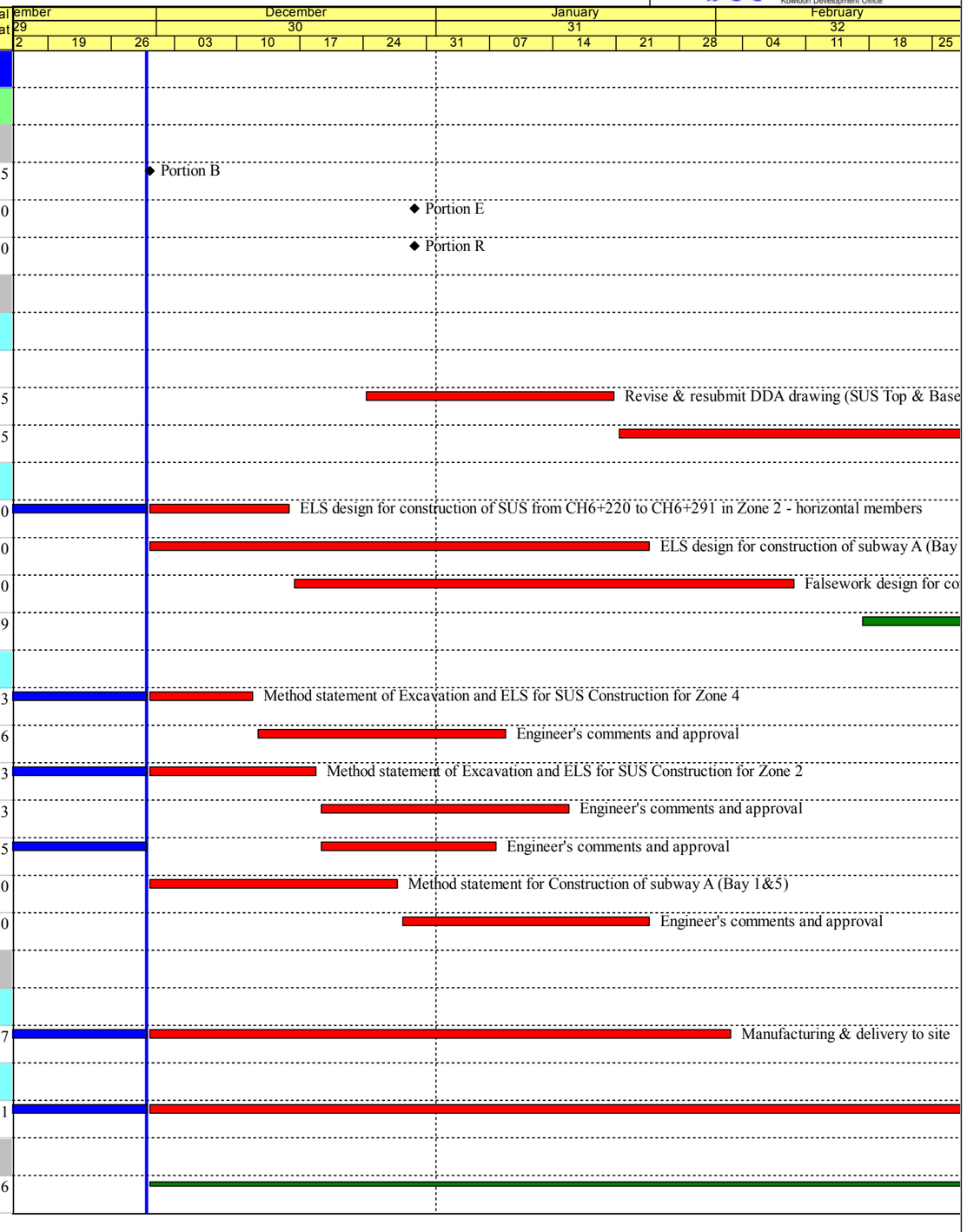
Construction Programme

Hyder - Meinhardt JV

KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Total Float
KL/2014/03-Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway						
Project Key Dates						
Site Handover Date						
K-PK-SHD-1100	Portion B	0	0		30-Nov-17*	-215
K-PK-SHD-1500	Portion E	0	0		29-Dec-17*	0
K-PK-SHD-2500	Portion R	0	0		29-Dec-17*	0
General Submission						
Alternative Design Submission and Approval						
Package B06 : SUS Top & base slab and intermediate wall from (CH6+220 to CH6+568)						
K-PA-ADS-1420	Revise & resubmit DDA drawing (SUS Top & Base slab and Intermediate wall from CH6+220 to CH6+568)	28	28	24-Dec-17	20-Jan-18	-175
K-PA-ADS-1430	Engineer's review and approval	56	56	21-Jan-18	17-Mar-18	-175
Major Temporary Works Design						
K-PA-GSP-6820	ELS design for construction of SUS from CH6+220 to CH6+291 in Zone 2 - horizontal members	56	16	05-Sep-17 A	15-Dec-17	-130
K-PA-GSP-6840	ELS design for construction of subway A (Bay 1&5)	56	56	30-Nov-17	24-Jan-18	-10
K-PA-GSP-6900	Falsework design for construction of top slab of SUS structure	56	56	16-Dec-17	09-Feb-18	-120
K-PA-GSP-9150	Temporary design of the trenchless construction for DCS pipelines	35	35	17-Feb-18	23-Mar-18	69
Major Construction Works Method Statement						
K-PA-GSP-7160	Method statement of Excavation and ELS for SUS Construction for Zone 4	28	12	12-Aug-17 A	11-Dec-17	-113
K-PA-GSP-7165	Engineer's comments and approval	28	28	12-Dec-17	08-Jan-18	-66
K-PA-GSP-7170	Method statement of Excavation and ELS for SUS Construction for Zone 2	28	19	20-Sep-17 A	18-Dec-17	-113
K-PA-GSP-7175	Engineer's comments and approval	28	28	19-Dec-17	15-Jan-18	-113
K-PA-GSP-7455	Engineer's comments and approval	28	20	23-Oct-17 A	07-Jan-18	-105
K-PA-GSP-7460	Method statement for Construction of subway A (Bay 1&5)	28	28	30-Nov-17	27-Dec-17	-10
K-PA-GSP-7465	Engineer's comments and approval	28	28	28-Dec-17	24-Jan-18	-10
Materials Procurement (Major Materials)						
ELS struct / waling						
K-PA-MP-1150	Manufacturing & delivery to site	360	65	10-Jun-16 A	02-Feb-18	-77
Chilled Water Pipes - DCS						
K-PA-MP-1350	Manufacturing & delivery to site	550	320	06-Feb-17 A	15-Oct-18	-11
Preliminaries						
K-DR-PRE-1800	Submission of time-lapsed photographs and video	1190	613	20-Feb-16 A	04-Aug-19	-36



中國路橋工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION

◆ Milestone
Critical Activity
Non-Critical Activity
Remaining Level of Effort
Actual Work

3 MRP Dec 2017 - Feb 2018

Project ID :24 3MRP Dec - Feb 18
Layout : KL201403 3MRP

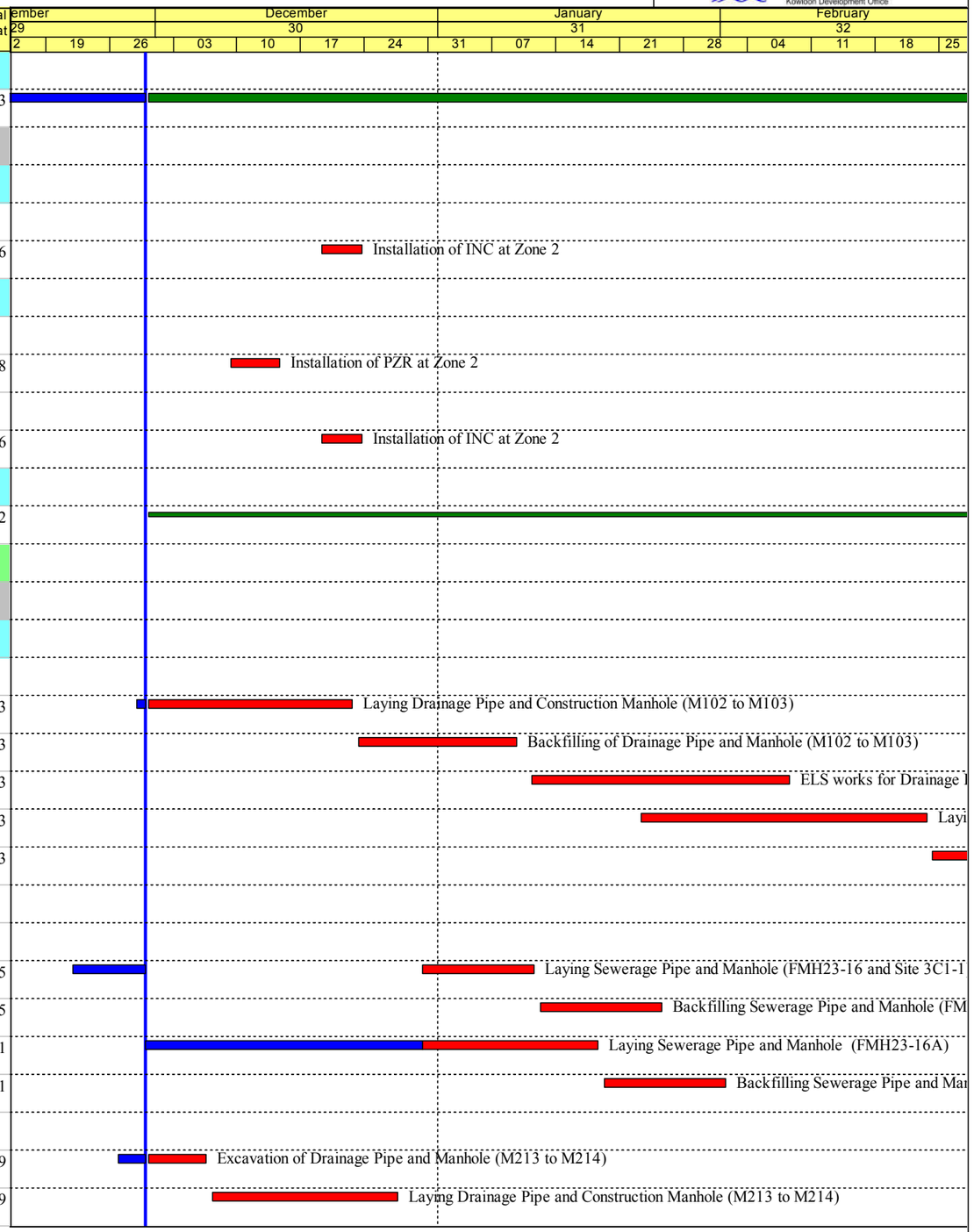
3 Months Rolling Programme			
Date	Revision	Checked	Approved
30-Nov-17	Dec 17 - Feb 18		

Hyder - Meinhardt JV

KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Total Float
Barge Loading Facilities						
K-DR-PRE-1480	Operation of temporary barging point	430	288	21-Jun-17 A	20-Nov-18	3
Instrumentation and Monitoring						
Eastbound Instrumentation and Monitoring						
Inclinometer (INC)						
K-IM-INC-1320	Installation of INC at Zone 2	5	5	19-Dec-17	23-Dec-17	-116
Westbound Instrumentation and Monitoring						
Piezometer/Standpipe (PZR)						
K-IM-PZR-1360	Installation of PZR at Zone 2	5	5	09-Dec-17	14-Dec-17	-108
Inclinometer (INC)						
K-IM-INC-1360	Installation of INC at Zone 2	5	5	19-Dec-17	23-Dec-17	-116
Tilt Monitoring Tile Plates						
K-IM-TMT-1000	Tilt Monitoring near PWCL	310	285	25-Apr-16 A	10-Sep-18	-122
Section 1 of the Works-Remainder of the Works						
Roadwork and Drainage Works						
Road D4-4 (Cheung Yip Street)						
Drainage Works (CH100 to CH240)						
K-01-RWS-9353	Laying Drainage Pipe and Construction Manhole (M102 to M103)	25	20	29-Nov-17 A	22-Dec-17	-93
K-01-RWS-9354	Backfilling of Drainage Pipe and Manhole (M102 to M103)	12	12	23-Dec-17	09-Jan-18	-93
K-01-RWS-9850	ELS works for Drainage Pipe and Manhole (M103 to M104)	25	25	11-Jan-18	08-Feb-18	-93
K-01-RWS-9860	Laying Drainage Pipe and Construction Manhole (M103 to M104)	25	25	23-Jan-18	23-Feb-18	-93
K-01-RWS-9870	Backfilling of Drainage Pipe and Manhole (M103 to M104)	12	12	24-Feb-18	09-Mar-18	-93
CH240 - CH400 Northbound						
Sewerage Works						
K-01-RWS-9820	Laying Sewerage Pipe and Manhole (FMH23-16 and Site 3C1-1)	22	10	22-Nov-17 A	11-Jan-18	-165
K-01-RWS-9830	Backfilling Sewerage Pipe and Manhole (FMH23-16 and Site 3C1-1)	12	12	12-Jan-18	25-Jan-18	-165
K-01-RWS-9890	Laying Sewerage Pipe and Manhole (FMH23-16A)	22	16	30-Nov-17 A	18-Jan-18	-171
K-01-RWS-9900	Backfilling Sewerage Pipe and Manhole (FMH23-16A)	12	12	19-Jan-18	01-Feb-18	-171
Laying of Drainage Pipe and Construction of Manhole (M206 to M213)						
K-01-RWS-9910	Excavation of Drainage Pipe and Manhole (M213 to M214)	8	6	27-Nov-17 A	06-Dec-17	-179
K-01-RWS-9920	Laying Drainage Pipe and Construction Manhole (M213 to M214)	16	16	07-Dec-17	27-Dec-17	-179



中國路橋工程有限責任公司 CHINA ROAD AND BRIDGE CORPORATION

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3 Months Rolling Programme			
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Hyder - Meinhardt JV

KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Total Float
K-01-RWS-9930	Backfilling Drainage Pipe and Manhole (M213 to M214)	12	12	28-Dec-17	11-Jan-18	-179
K-01-RWS-9940	Excavation of Drainage Pipe and Manhole (M212 to M213)	8	8	30-Dec-17	09-Jan-18	-179
K-01-RWS-9950	Laying Drainage Pipe and Construction Manhole (M212 to M213)	16	16	10-Jan-18	27-Jan-18	-179
K-01-RWS-9960	Backfilling Drainage Pipe and Manhole (M212 to M213)	12	12	29-Jan-18	10-Feb-18	-179
Road Works						
K-01-RWS-9440	Construction of Road Base and Road Pavement	40	40	12-Feb-18	06-Apr-18	-179
Seawall Modification Works						
K-01-RWS-9750	Conreting for Seawall	5	5	06-Dec-17	11-Dec-17	14
K-01-RWS-9770	AI test and CCTV test for drainage pipe	1	1	11-Dec-17	12-Dec-17	14
K-01-RWS-9780	Beakfilling of Drianage pipe near seawall	1	1	12-Dec-17	13-Dec-17	14
K-01-RWS-9790	Maintance department handover inspection	1	1	13-Dec-17	14-Dec-17	14
K-01-RWS-9800	Removal of stop log	1	1	14-Dec-17	15-Dec-17	14
Section 1A of the Works -Construction of Supporting Underground Structure (Alternative Design)						
SUS and Ventilation Adits from CH6+150 to CH6+220 in Zone 1						
Construction of Tunnel Box Structure						
SUS Bay 1 (Ch6150-Ch6167.5)						
K-1A-SV1-8260	Backfilling with Sand and Casting Mass Concrete between VA1, VA2 and SA	5	0	12-Oct-17 A	30-Nov-17 A	
K-1A-SV1-8290	Erection of Scaffold and Formwork for Base Slab Construction (inside VA1 and VA3)	7	5	22-Nov-17 A	05-Dec-17	-64
K-1A-SV1-8300	Backfilling with Sand to Formation Level	6	4	18-Nov-17 A	08-Dec-17	-64
K-1A-SV1-8320	Construction of Base Slab	12	12	25-Nov-17 A	15-Dec-17	-64
K-1A-SV1-8330	Removal of Strut S3	4	4	16-Dec-17	20-Dec-17	-64
K-1A-SV1-8350	Side Wall and Intermediate Wall Construction	10	10	21-Dec-17	04-Jan-18	-64
K-1A-SV1-8360	Erection of Scaffold and Installation of Re-prop Struct inside W/B and E/B	8	8	05-Jan-18	13-Jan-18	-64
K-1A-SV1-8370	Removal of Strut S2	5	5	15-Jan-18	19-Jan-18	-64
K-1A-SV1-8400	Constrcution of Top Slab	20	20	24-Jan-18	15-Feb-18	-64
K-1A-SV1-8410	Waterproofing Works	5	5	20-Feb-18	24-Feb-18	-64
K-1A-SV1-8420	Breaking and Removal D-wall to +2.5mPD	10	10	26-Feb-18	08-Mar-18	-64
SUS Bay 2 (Ch6167.5-Ch6185)						
K-1A-SV1-8870	Construction of VA2 Wall Structure	8	2	25-Sep-17 A	01-Dec-17	-46
K-1A-SV1-8880	Strip Formwork and Remedial Works for Waterproofing	3	3	02-Dec-17	05-Dec-17	-46
K-1A-SV1-8910	Casting Blinding Layer (No-Fine) and Laying Waterproofing Works	4	4	18-Nov-17 A	08-Dec-17	-59

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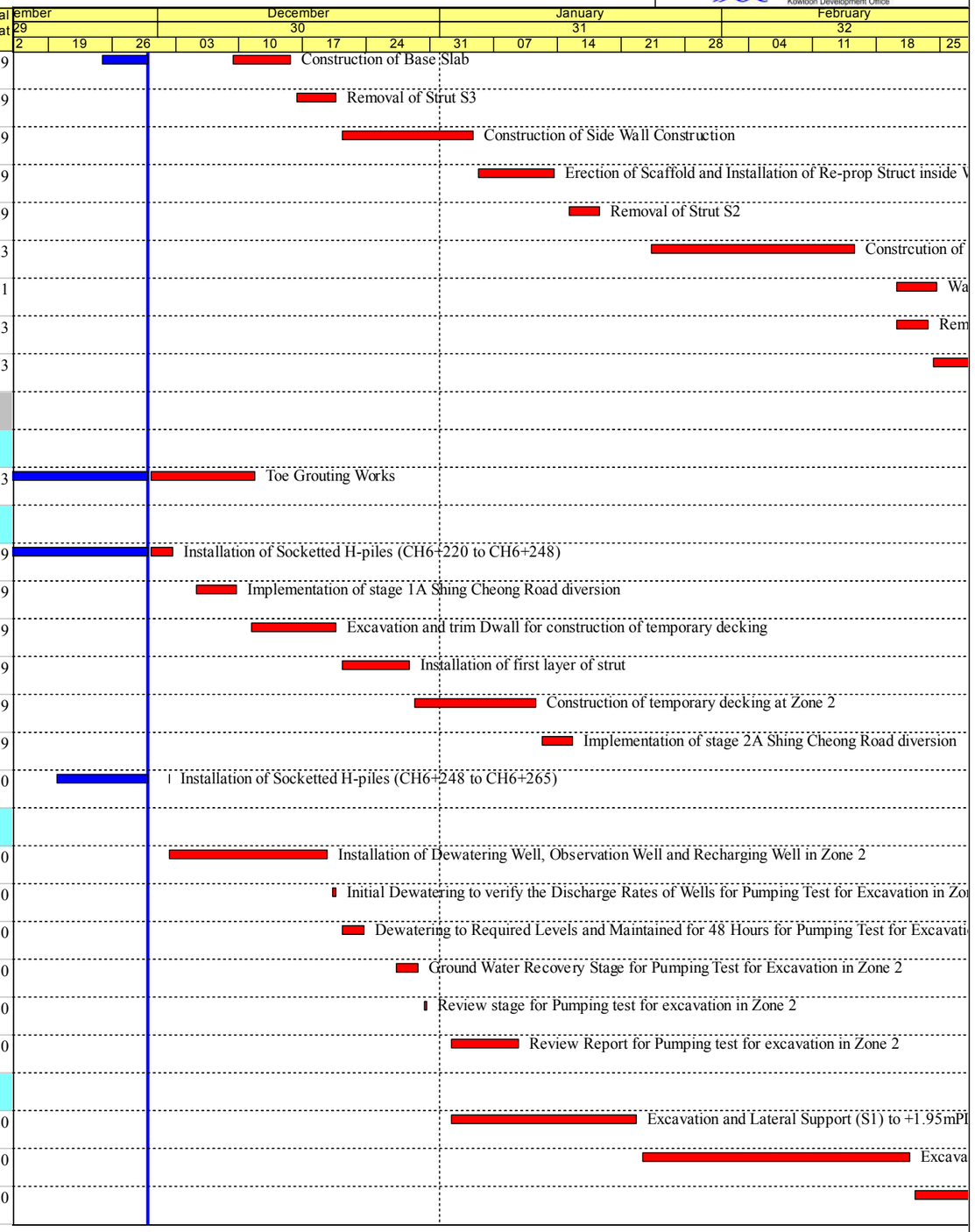
Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Total Float
K-1A-SV1-8920	Construction of Base Slab	6	6	25-Nov-17 A	15-Dec-17	-59
K-1A-SV1-8930	Removal of Strut S3	4	4	16-Dec-17	20-Dec-17	-59
K-1A-SV1-8950	Construction of Side Wall Construction	10	10	21-Dec-17	04-Jan-18	-59
K-1A-SV1-8960	Erection of Scaffold and Installation of Re-prop Struct inside W/B and E/B	8	8	05-Jan-18	13-Jan-18	-59
K-1A-SV1-8970	Removal of Strut S2	4	4	15-Jan-18	18-Jan-18	-59
K-1A-SV1-8990	Constrcution of Top Slab	20	20	24-Jan-18	15-Feb-18	-63
K-1A-SV1-8995	Waterproofing Works	5	5	20-Feb-18	24-Feb-18	-61
K-1A-SV1-8998	Removal of Strut S1	4	4	20-Feb-18	23-Feb-18	-63
K-1A-SV1-9020	Breaking and Removal of D-wall to +2.5mPD	10	10	24-Feb-18	07-Mar-18	-63
SUS and Ventilation Adits from CH6+220 to CH6+291 in Zone 2						
E/B Construction of D-Wall						
K-1A-SV2-2800	Toe Grouting Works	20	10	26-Sep-17 A	11-Dec-17	-113
Construction of Socketed H-Pile						
K-1A-SV2-3300	Installation of Socketted H-piles (CH6+220 to CH6+248)	25	3	11-Oct-17 A	02-Dec-17	-119
K-1A-SV2-3310	Implementation of stage 1A Shing Cheong Road diversion	5	5	05-Dec-17	09-Dec-17	-119
K-1A-SV2-3320	Excavation and trim Dwall for construction of temporary decking	9	9	11-Dec-17	20-Dec-17	-119
K-1A-SV2-3330	Installation of first layer of strut	5	5	21-Dec-17	28-Dec-17	-119
K-1A-SV2-3340	Construction of temporary decking at Zone 2	11	11	29-Dec-17	11-Jan-18	-119
K-1A-SV2-3350	Implementation of stage 2A Shing Cheong Road diversion	3	3	12-Jan-18	15-Jan-18	-119
K-1A-SV2-3400	Installation of Socketted H-piles (CH6+248 to CH6+265)	20	0	20-Nov-17 A	02-Dec-17	-100
Pumping Test						
K-1A-SV2-6000	Installation of Dewatering Well, Observation Well and Recharging Well in Zone 2	15	15	02-Dec-17	19-Dec-17	-120
K-1A-SV2-6100	Initial Dewatering to verify the Discharge Rates of Wells for Pumping Test for Excavation in Zone 2	1	1	20-Dec-17	20-Dec-17	-120
K-1A-SV2-6110	Dewatering to Required Levels and Maintained for 48 Hours for Pumping Test for Excavation in Zone 2	3	3	21-Dec-17	23-Dec-17	-120
K-1A-SV2-6120	Ground Water Recovery Stage for Pumping Test for Excavation in Zone 2	3	3	27-Dec-17	29-Dec-17	-120
K-1A-SV2-6130	Review stage for Pumping test for excavation in Zone 2	1	1	30-Dec-17	30-Dec-17	-120
K-1A-SV2-6140	Review Report for Pumping test for excavation in Zone 2	7	7	02-Jan-18	09-Jan-18	-120
Excavation and ELS Construction						
K-1A-SV2-6200	Excavation and Lateral Support (S1) to +1.95mPD	18	18	02-Jan-18	22-Jan-18	-120
K-1A-SV2-6250	Excavation and Lateral Support (S2) to -2.20mPD	23	23	23-Jan-18	21-Feb-18	-120
K-1A-SV2-6300	Excavation and Lateral Support (S3) to -6.20mPD	25	25	22-Feb-18	22-Mar-18	-120



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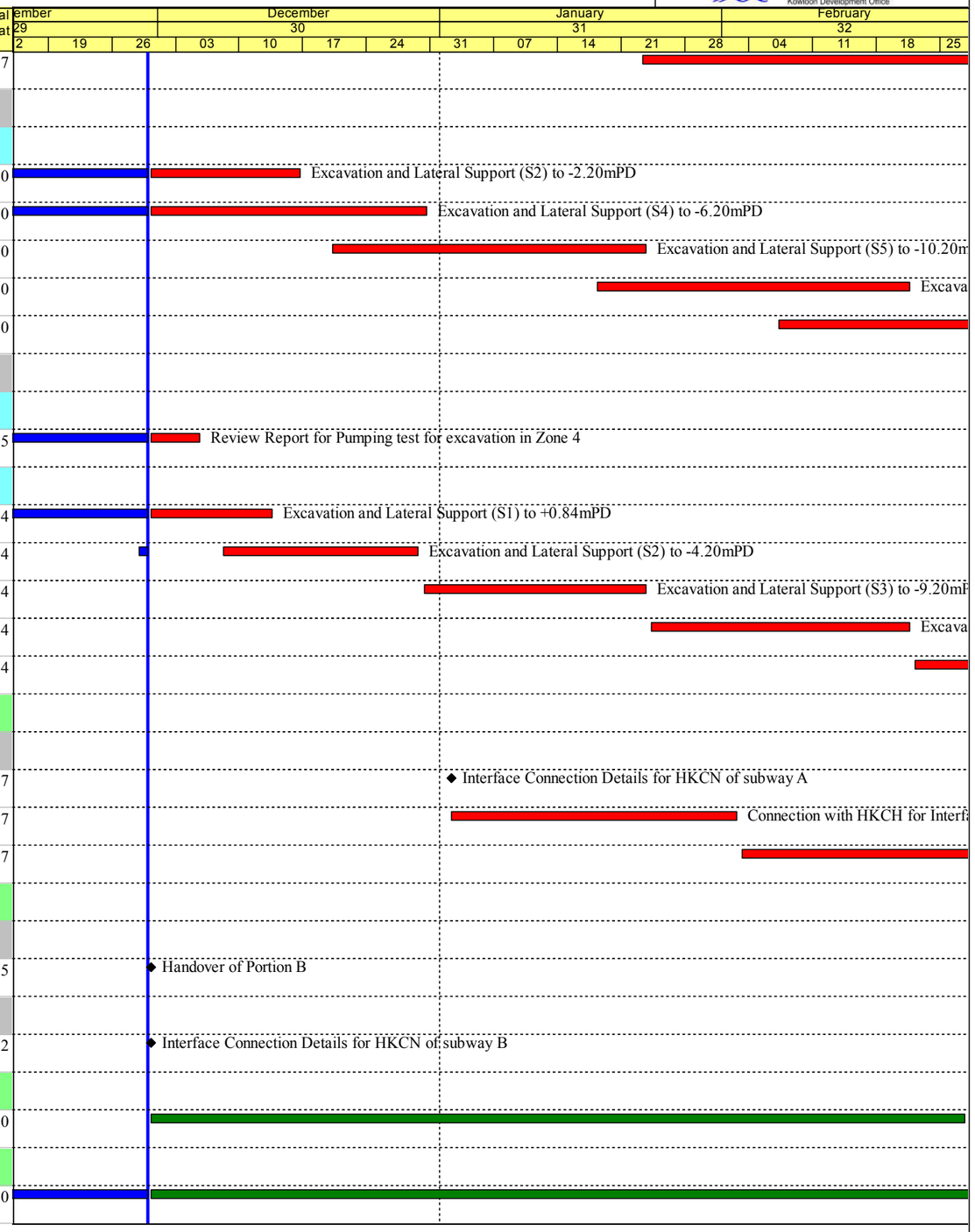
KL/2014/03 Kai Tak Development - Stage 3 Infrastructure Works for Developments at the Southern Part of the Former Runway

CEDD 土木工程拓展署 Civil Engineering and Development Department 九龍拓展處 Kowloon Development Office

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Total Float
K-1A-SV2-6560	Construction of temporary steel decking and platforms along the westbound diaphram walls	50	50	23-Jan-18	24-Mar-18	-117
SUS Structure from CH6+291 to 6+467 in Zone 3						
Excavation and ELS Construction						
K-1A-SV3-5650	Excavation and Lateral Support (S2) to -2.20mPD	24	15	25-Aug-17 A	16-Dec-17	-150
K-1A-SV3-5700	Excavation and Lateral Support (S4) to -6.20mPD	25	25	10-Oct-17 A	30-Dec-17	-150
K-1A-SV3-5750	Excavation and Lateral Support (S5) to -10.20mPD	27	27	20-Dec-17	23-Jan-18	-150
K-1A-SV3-5800	Excavation and Lateral Support (S6) to -14.20mPD	27	27	18-Jan-18	21-Feb-18	-150
K-1A-SV3-5850	Excavation and Lateral Support (S7) to -18.20mPD	30	30	07-Feb-18	16-Mar-18	-150
SUS Structure from CH6+467 to 6+568 in Zone 4						
Pumping Test						
K-1A-SV4-5140	Review Report for Pumping test for excavation in Zone 4	7	5	26-Oct-17 A	05-Dec-17	-105
Excavation and ELS Construction						
K-1A-SV4-5600	Excavation and Lateral Support (S1) to +0.84mPD	14	12	15-Nov-17 A	13-Dec-17	-124
K-1A-SV4-5650	Excavation and Lateral Support (S2) to -4.20mPD	18	17	29-Nov-17 A	29-Dec-17	-124
K-1A-SV4-5700	Excavation and Lateral Support (S3) to -9.20mPD	20	20	30-Dec-17	23-Jan-18	-124
K-1A-SV4-5750	Excavation and Lateral Support (S4) to -14.20mPD	22	22	24-Jan-18	21-Feb-18	-124
K-1A-SV4-5800	Excavation and Lateral Support (S5) to -18.20mPD	18	18	22-Feb-18	14-Mar-18	-124
Section 4A of the Works-Construction of Subway A (Subject to Excision)						
Bay 1						
K-4A-BAY-1050	Interface Connection Details for HKCN of subway A	0	0	02-Jan-18*		-17
K-4A-BAY-1060	Connection with HKCH for Interfacing Works	28	28	02-Jan-18	02-Feb-18	-17
K-4A-BAY-1100	Installation of Sheetpile for Bay 1	21	21	03-Feb-18	02-Mar-18	-17
Section 4B of the Works- Construction of Subway B (Subject to Excision)						
Bay 1 & 2						
K-4B-BAY-3100	Handover of Portion B	0	0		30-Nov-17*	-215
Bay 3 & 4						
K-4B-BAY-2480	Interface Connection Details for HKCN of subway B	0	0	30-Nov-17		-52
Section 5 of the Works-Completion of All Landscape Softworks						
K-05-LCS-1000	Procurement of plant species	90	90	30-Nov-17	27-Feb-18	410
Section 7 of the Works-Preservation and Protection of Existing Trees						
K-07-001-1000	Section 7 of the Works-Preservation and Protection of Existing Trees	1200	570	04-Jan-16 A	22-Jun-19	10



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Appendix B

Project Organization Chart

MATERIALAB CONSULTANTS LIMITED
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Profit Industrial Building,
1-15 Kwai Fung Crescent, Kwai Fong,
Hong Kong..
Tel : (852)-24508238
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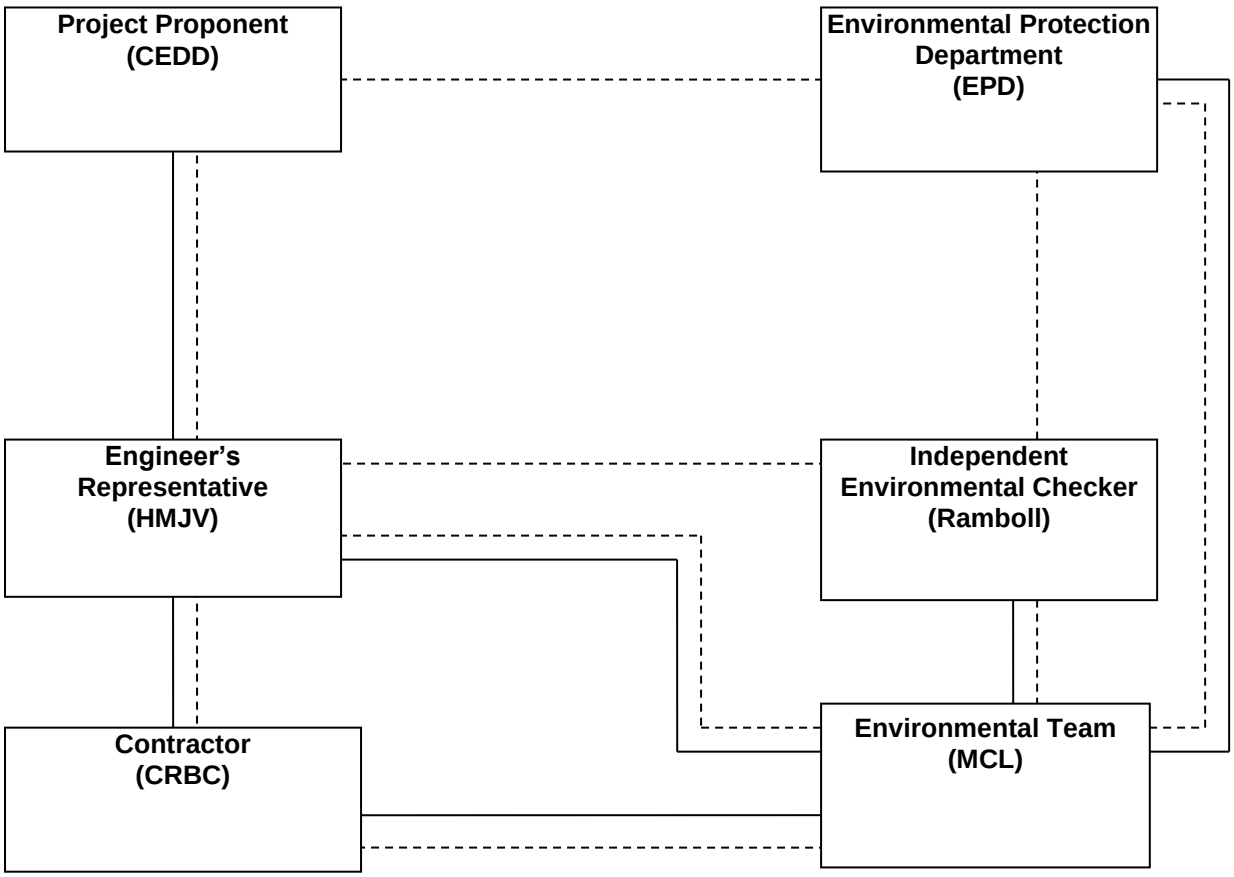

Legend:
Line of Reporting
Line of Communication

MATERIALAB CONSULTANTS LIMITED
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Appendix C

Action and Limit Levels for Air Quality and Noise

MATERIALAB CONSULTANTS LIMITED
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Action and Limit Levels for 24-hr TSP and 1-hr TSP

Parameter	Monitoring Station	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/ m^3$)
24-hr TSP ($\mu g/m^3$)	KTD1a	177	260
	KTD2a	157	
	KER1b	172	
*1-hr TSP ($\mu g/m^3$)	KTD1a	285	500
	KTD2a	279	
	KER1b	295	

Note:
1-hr TSP monitoring should be required in case of complaints.

Action and Limit Levels for Construction Noise, Leq (30min), dB(A)

Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	KTD1a KTD2a KER1b	When one documented complaint is received	75 dB(A)

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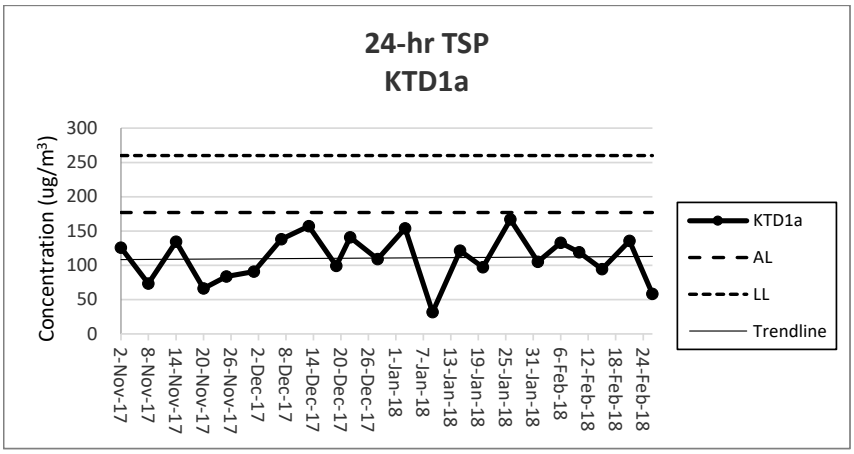
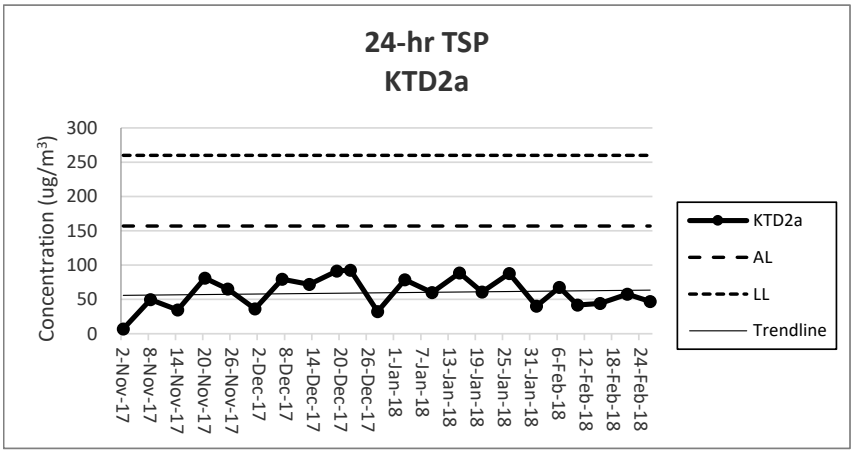
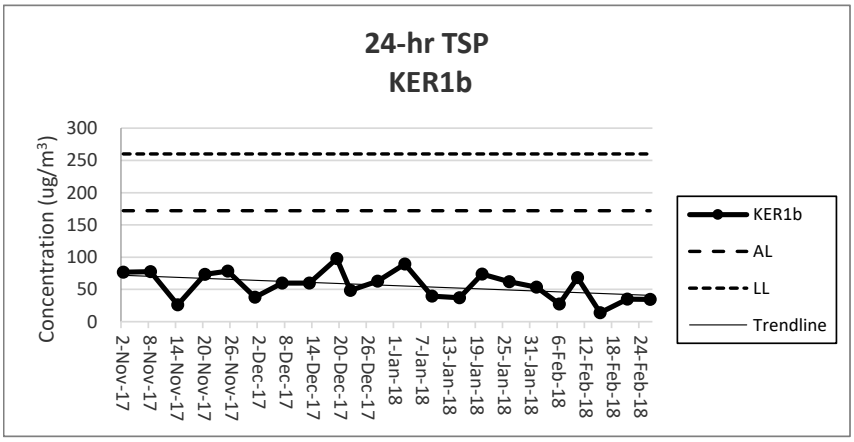
Appendix D

Graphical Presentation of Monitoring Data





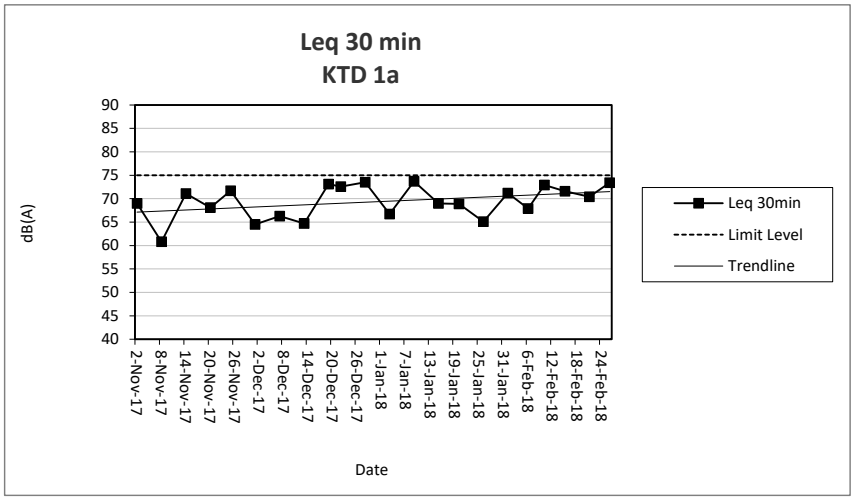


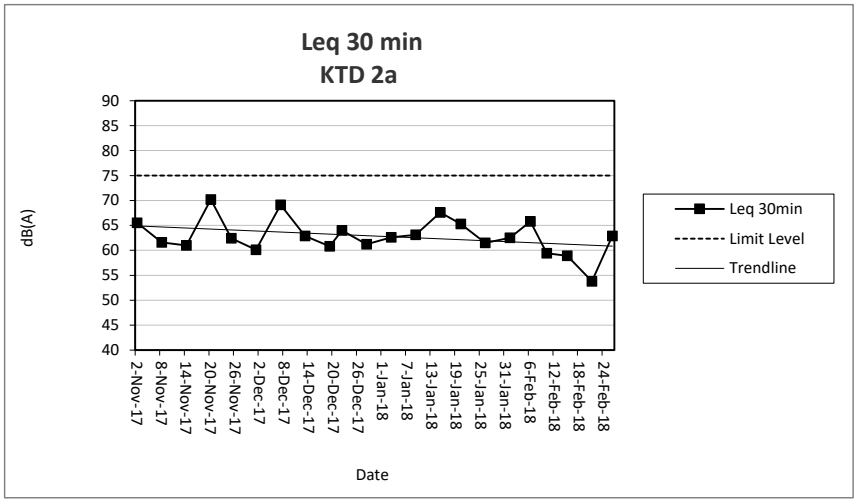
Note:

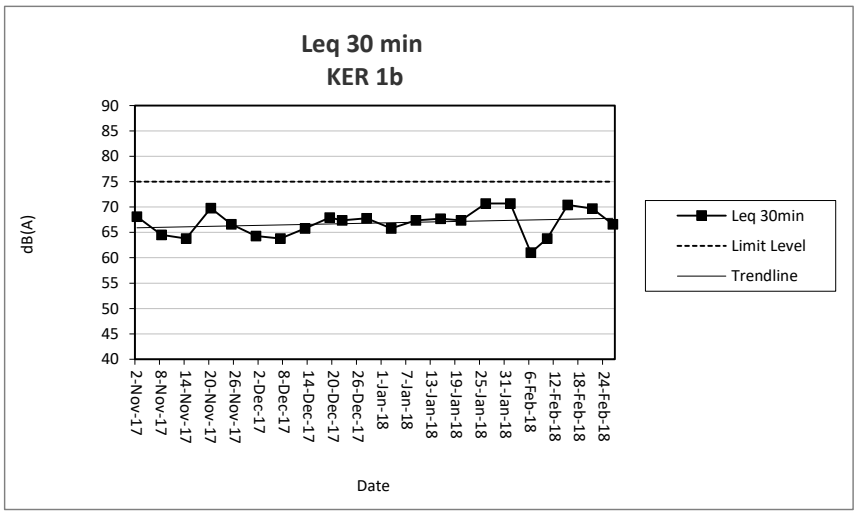
1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.1.

2) The weather conditions during monitoring in the reporting period was range from cloudy, fine and sunny.

3) Any other factors which might affect the monitoing results can be referred to Section 2.3.4.







Note:
1) The major activities being carried out on site during the reporting period can be referred to Section 1.3.1.
2) The weather conditions during the reporting period can be referred to Appendix K.
3) Any other factors which might affect the monitoing results can be referred to Section 3.7.2.
4) QA/QC results, calibration results and detection limits can be referred to Appendix D.

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Appendix E

Waste Flow Table

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MateriaLab

Waste Flow Table for Year 2016

Months	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2016 Jan	0.159	0.101	0.058	Nil	Nil	Nil	Nil	0.023	0.00002	0.0158	0.0335
2016 Feb	0.291	0.050	0.241	Nil	Nil	Nil	1.34	0.023	0.00002	0.0158	0.0335
2016 Mar	2.7389	0.0407	0.0662	Nil	2.632	Nil	5.92	0.023	0.00002	0.0158	0.0571
2016 Apr	4.1718	0.0578	0.462	Nil	3.652	Nil	12.5	0.023	0.00002	0.0158	0.0426
2016 May	3.592	Nil	0.299	Nil	3.293	Nil	5.23	0.023	0.00002	0.0158	0.0621
2016 June	4.6035	Nil	0.8555	Nil	3.748	Nil	Nil	0.023	0.00002	0.0158	0.0619
2016 July	6.155	0.153	0.015	Nil	5.987	Nil	7.84	0.023	0.00002	0.0158	0.0433
2016 Aug	5.1155	Nil	Nil	Nil	5.1155	Nil	19.93	0.023	Nil	Nil	0.0147
2016 Sept	7.2267	Nil	Nil	Nil	7.2267	Nil	33.65	0.023	Nil	Nil	0.0103
2016 Oct	4.6448	Nil	Nil	Nil	4.6448	Nil	13.30	0.023	Nil	Nil	0.0385
2016 Nov	6.1626	Nil	Nil	Nil	6.1626	Nil	27.06	0.023	Nil	Nil	0.0192
2016 Dec	6.3522	Nil	Nil	Nil	6.3522	Nil	13.30	0.023	Nil	Nil	0.0121
Total	51.213	0.4025	1.9967	Nil	48.8138	Nil	140.07	0.276	0.00014	0.1106	0.4288

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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Waste Flow Table for Year 2017

Months	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2017 Jan	4.2300	Nil	Nil	Nil	4.2300	Nil	0.015	0.023	Nil	Nil	0.0109
2017 Feb	3.2128	Nil	Nil	Nil	3.2128	Nil	0.015	0.023	Nil	Nil	0.0096
2017 Mar	9.4759	Nil	Nil	Nil	9.4759	Nil	0.034	0.023	Nil	Nil	0.0162
2017 Apr	4.8827	Nil	Nil	Nil	4.8827	Nil	0.016	0.023	Nil	Nil	0.0062
2017 May	3.0366	Nil	Nil	Nil	3.0366	Nil	0.022	0.023	Nil	Nil	0.0282
2017 Jun	2.5656	Nil	Nil	Nil	2.5656	Nil	41.25	Nil	Nil	Nil	0.0357
2017 Jul	5.5267	Nil	0.7851	Nil	4.7416	Nil	4.01	0.4515	Nil	0.25	0.0364
2017 Aug	11.4734	Nil	0.0276	Nil	11.4458	Nil	7.4	Nil	Nil	Nil	0.0196
2017 Sep	23.9373	Nil	2.6167	Nil	21.3206	Nil	3.52	Nil	Nil	Nil	0.0333
2017 Oct	17.8261	Nil	0.4069	Nil	17.4192	Nil	Nil	Nil	Nil	Nil	0.0156
2017 Nov	5.8834	Nil	0.6664	Nil	5.217	Nil	Nil	Nil	Nil	Nil	0.023
2017 Dec	21.3554	Nil	0.4763	Nil	20.8791	Nil	29.13	Nil	Nil	Nil	0.022
Total	113.4059	Nil	4.9790	Nil	108.4269	Nil	85.412	0.5665	Nil	0.25	0.2567

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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Waste Flow Table for Year 2018

Months	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non-inert C&D Wastes Generated Monthly				
	Total Quantity Generated (Inert C&D)	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
2018 Jan	10.2340	Nil	Nil	Nil	10.2340	Nil	32.39	Nil	Nil	Nil	0.0161
2018 Feb	6.5256	Nil	Nil	Nil	6.5256	Nil	Nil	Nil	Nil	Nil	0.0235
2018 Mar											
2018 Apr											
2018 May											
2018 Jun											
2018 Jul											
2018 Aug											
2018 Sep											
2018 Oct											
2018 Nov											
2018 Dec											
Total	16.7596	Nil	Nil	Nil	16.7596	Nil	32.39	Nil	Nil	Nil	0.0396

Note:

1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

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Appendix F

Environmental Mitigation Implementation Schedule (EMIS)

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
Air Quality Measures					
New Distributor Roads Serving the Planned KTD					
AEIAR-130/2009 S3.2	AEIAR 130/2009 EM&A Manual S2.2	8 times daily watering of the work site with active dust emitting activities.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
AEIAR-130/2009 S5.2.19	AEIAR 130/2009 EM&A Manual S4.2.4	The excavation area should be limited to as small in size as possible and backfilled with clean and/or treated soil shortly after excavation work. The exposed excavated area should be covered by the tarpaulin during night time. The top layer soils should be sprayed with fine misting of water immediately before the excavation.	Contractor	All relevant worksites	Not Applicable
Trunk Road T2					
AEIAR-174/2013 S4.9.2.1	AEIAR-174/2013 EM&A Manual S2.3.1.1	Watering of the construction areas 12 times per day to reduce dust emissions by 91.7%, with reference to the "Control of Open Fugitive Dust Sources" (USEPA AP-42). The amount of water to be applied would be 0.91L/m2 for the respective watering frequency.	Contractor	All relevant worksites	Implemented
		Dust enclosures with watering would be provided along the loading ramps and conveyor belts for unloading the C&D materials to the barge for dust suppression.	Contractor	All relevant worksites	Not Applicable
		8 km per hour is the recommended limit of the speed for vehicles on unpaved site roads.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.2, S5.2.19, AEIAR-174/2013 S4.9.2.2	AEIAR 130/2009 EM&A Manual S2.2, S4.2, AEIAR-174/2013 EM&A Manual S2.3.1.2	Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.	Contractor	All relevant worksites	Partially Implemented
		Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. Use of frequent watering for particularly dusty construction areas and areas close to ASRs.	Contractor	All relevant worksites	Partially Implemented
		Misting for the dusty material should be carried out before being loaded into the vehicle. Any vehicle with an open load carrying area should have properly fitted side and tail boards.	Contractor	All relevant worksites	Implemented
		Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.	Contractor	All relevant worksites	Partially Implemented
		The vehicles should be restricted to maximum speed of 10 km per hour. Confined haulage and delivery vehicle to designated roadways insider the site. Onsite unpaved roads should be compacted and kept free of lose materials.	Contractor	All relevant worksites	Implemented
		Vehicle washing facilities should be provided at every vehicle exit point. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Contractor	All relevant worksites	Implemented
		Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.	Contractor	All relevant worksites	Implemented
		Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.	Contractor	All relevant worksites	Implemented
		Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.	Contractor	All relevant worksites	Implemented
		Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	Contractor	All relevant worksites	Implemented
		Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.	Contractor	All relevant worksites	Implemented
		Open stockpiles shall be avoided or covered. Prevent placing dusty material storage piles near ASRs.	Contractor	All relevant worksites	Implemented
		Routing of vehicles and position of construction plant should be at the maximum possible distance from ASRs.	Contractor	All relevant worksites	Implemented
		Dark smoke			
		Dark smoke emission shall be control in accordance with the Air Pollution Control (Smoke)	Contractor	All relevant	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Regulation and ETWB TCW 19/2005.		worksites	
		Plant and equipment should be well maintained to prevent dark smoke emission.	Contractor	All relevant worksites	Implemented
Noise Measures					
Trunk Road T2					
AEIAR-174/2013 S5.9.2.1	AEIAR-174/2013 EM&A Manual S3.4.1.1	The use of quieter plant, including Quality Powered Mechanical Equipment (QPME) is specified for the list of equipment: • Concrete lorry mixer • Dump Truck, 5.5 tonne < gross vehicle weight <= 38 tonne • Generator, Super Silenced, 70 dB(A) at 7m • Poker, vibratory, Hand-held (electric) • Water Pump, Submersible (Electric) • Mobile Crane - KOBELCO CKS900 • Excavator, wheeled/tracked - HYUNDAI R80CR-9	Contractor	All relevant worksites	Implemented
		Use of temporary or fixed noise barriers with a surface density of at least 10kg/m^2 to screen noise from movable and stationary plant.	Contractor	All relevant worksites	Not Applicable
		Use of enclosures with covers at top and three sides and a surface density of at least 10kg/m^2 to screen noise from generally static noisy plant such as air compressors.	Contractor	All relevant worksites	Not Applicable
		Use of acoustic fabric for the silent piling system, drill rigs, rock drills etc.	Contractor	All relevant worksites	Partially Implemented
		Good Site Practices			
AEIAR-130/2009 S3.3, S5.3.10, AEIAR-174/2013 S5.9.2.1	AEIAR 130/2009 EM&A Manual S2.3, S4.3.2, AEIAR-174/2013 EM&A Manual S3.4.1.1	Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction/ decommissioning program.	Contractor	All relevant worksites	Implemented
		Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction/ decommissioning program.	Contractor	All relevant worksites	Not Applicable
		Mobile plant, if any, should be sited as far away from NSRs as possible.	Contractor	All relevant worksites	Implemented
		Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or should be throttled down to a minimum.	Contractor	All relevant worksites	Implemented
		Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Contractor	All relevant worksites	Implemented
		Material stockpiles and other structures should be effectively utilized, wherever practicable, in	Contractor	All relevant	Implemented

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		screening noise from on-site construction/ decommissioning activities.		worksites	
		Use of site hoarding as a noise barrier to screen noise at low level NSRs.	Contractor	All relevant worksites	Implemented
		For the use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above), the noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use at any time in construction site.	Contractor	All relevant worksites	Implemented
		Quiet powered mechanical equipment (PME) shall be used for the construction of the Project.	Contractor	All relevant worksites	Implemented
		Full enclosures shall be used to screen noise from relatively static PMEs (including air compressor, bar bender, concrete pump, generator and water pump) from sensitive receiver(s).	Contractor	All relevant worksites	Not Applicable
		Movable cantilevered noise barriers shall be used to screen noise from mobile PMEs (including asphalt paver, breaker, excavator and hand-held breaker) from sensitive receiver(s). These movable cantilevered noise barriers shall be located close to the mobile PMEs and shall be moved/adjusted iteratively in step with each movement of the corresponding mobile PMEs in order to maximize their noise reduction effects.	Contractor	All relevant worksites	Not Applicable
		Only approved or exempted Non-road Mobile Machineries (NRMMs) including regulated machines and non-road vehicles with proper labels are allowed to be used in specified activities on-site.	Contractor	All relevant worksites	Implemented
Water Quality Measures					
Trunk Road T2					
		Accidental Spillage			
AEIAR-174/2013 S6.4.8.5	AEIAR-174/2013 EM&A Manual S4.2.1.1	All bentonite slurry should be stored in a container that resistant to corrosion, maintained in good conditions and securely closed; The container should be labelled in English and Chinese and note that the container is for storage of bentonite slurry only.	Contractor	All relevant worksites	Implemented
		The storage container should be placed on an area of impermeable flooring and bunded with capacity to accommodate 110% of the volume of the container size or 20% by volume stored in the area and enclosed with at least 3 sides.	Contractor	All relevant worksites	Implemented
		The storage container should be sufficiently covered to prevent rainfall entering the container or bunded area (water collected within the bund must be tested and disposed of as chemical waste, if necessary). An emergency clean up kit shall be readily available where bentonite fluid will be stored or used.	Contractor	All relevant worksites	Implemented

EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		The handling and disposal of bentonite slurries should be undertaken in accordance within ProPECC PN 1/94. Surplus bentonite slurries used in construction works shall be reconditioned and reused wherever practicable. Residual bentonite slurry shall be disposed of from the site as soon as possible as stipulated in Clause 8.56 of the General Specification for Civil Engineering Works. The Contractor should explore alternative disposal outlets for the residual bentonite slurry (dewatered bentonite slurry to be disposed to a public filling area and liquid bentonite slurry, if mixed with inert fill material, to be disposed to a public filling area) and disposal at landfill should be the last resort.	Contractor	All relevant worksites	Implemented
AEIAR-174/2013 S6.4.8.8	AEIAR-174/2013 EM&A Manual S4.2.1.1	In order to protect against impacts to the surrounding marine waters of the KTTS and Victoria Harbour in the event of an accidental spillage of fuel or oil, the Contractor will be required to prepare a spill response plan to the satisfaction of AFCD, EPD, FSD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site.	Contractor	All relevant worksites	Implemented
		<u>Dredging, Reclamation and Filling</u>			
		No dredging, reclamation or filling in the marine environment shall be carried out.	Contractor	All relevant worksites	Implemented
Decommissioning of the Radar Station of the former Kai Tak Airport					
		<u>Building Demolition</u>			
AEIAR-130/2009 S5.4	AEIAR 130/2009 EM&A Manual S4.4	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed as far as practicable in order to minimise surface runoff and the chance of erosion.	Contractor	All relevant worksites	Not Applicable
		There is a need to apply to EPD for a discharge licence under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge licence. All the runoff, wastewater or extracted groundwater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. It is anticipated that the wastewater generated from the works areas would be of small quantity. Monitoring of the treated effluent quality from the works areas should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Contractor	All relevant worksites	Implemented
		<u>General Construction Works</u>			
		<u>Construction Runoff</u>			
AEIAR-130/2009 S3.4,	AEIAR 130/2009 EM&A Manual	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the	Contractor	All relevant worksites	Partially Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
S5.4/ AEIAR-174/2013 S6.4.8.1	S2.4, S4.4/ AEIAR-174/2013 EM&A Manual S4.2.1.1	above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include the use of sediment traps and adequate maintenance of drainage systems to prevent flooding and overflow.			
		Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Contractor	All relevant worksites	Implemented
		Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Contractor	All relevant worksites	Implemented
		Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m^3 capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m^3 should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Contractor	All relevant worksites	Implemented
		Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	Contractor	All relevant worksites	Partially Implemented
		Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	Contractor	All relevant worksites	Implemented

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EIA Ref	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Who to implement the measure	Location / Timing	Construction Phase Implementation Status
		Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Contractor	All relevant worksites	Implemented
		An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Contractor	All relevant worksites	Implemented
		Drainage			
		It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	Contractor	All relevant worksites	Implemented
		All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Contractor	All relevant worksites	Implemented
		Stormwater Discharges			
		Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes.	Contractor	All relevant worksites	Implemented
		Sewage Effluent			
		Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	Contractor	All relevant worksites	Implemented
		Debris and Litter			
		In order to maintain water quality in acceptable conditions with regard to aesthetic quality,	Contractor	All relevant	Implemented

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		contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur. Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering into the adjacent harbour waters. Stockpiles of cement and other construction materials should be kept covered when not being used.		worksites	
		Accidental Spillage			
		Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to the nearby harbour waters, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ. The bund should be drained of rainwater after a rain event.	Contractor	All relevant worksites	Implemented
Waste Management Measures					
		Waste Management Plan			
AEIAR-174/2013 S11.4.8.1	AEIAR-174/2013 EM&A Manual S9.2.1.2	Contractor should be requested to submit an outline Waste Management Plan (WMP) prior to the commencement of construction work, in accordance with the ETWB TC(W) No.19/2005 so as to provide an overall framework of waste management and reduction.	Contractor	All relevant worksites	Implemented
		Good Site Practices			
AEIAR-130/2009 S3.5, S5.5	AEIAR 130/2009 EM&A Manual S2.5, S4.5	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	Contractor	All relevant worksites	Implemented
		Training of site personnel in proper waste management and chemical waste handling procedures.	Contractor	All relevant worksites	Implemented
		Provision of sufficient waste disposal points and regular collection for disposal.	Contractor	All relevant worksites	Implemented
		Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	Contractor	All relevant worksites	Implemented
		A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).	Contractor	All relevant worksites	Implemented
		Waste Reduction Measures			
		Sort C&D waste from demolition of the remaining structures to recover recyclable portions such as metals.	Contractor	All relevant worksites	Implemented

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		Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	Contractor	All relevant worksites	Implemented
		Encourage collection of aluminum cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.	Contractor	All relevant worksites	Implemented
		Any unused chemicals or those with remaining functional capacity should be recycled.	Contractor	All relevant worksites	Implemented
		Proper storage and site practices to minimize the potential for damage or contamination of construction materials.	Contractor	All relevant worksites	Implemented
		Construction and Demolition Materials			
		Where it is unavoidable to have transient stockpiles of C&D material within the work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.	Contractor	All relevant worksites	Implemented
		Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.	Contractor	All relevant worksites	Partially Implemented
		Skip hoist for material transport should be totally enclosed by impervious sheeting.	Contractor	All relevant worksites	Implemented
		Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	Contractor	All relevant worksites	Implemented
		The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.	Contractor	All relevant worksites	Implemented
		The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.	Contractor	All relevant worksites	Implemented
		All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.	Contractor	All relevant worksites	Implemented
		The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	Contractor	All relevant worksites	Implemented
		When delivering inert C&D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 “Trip Ticket System for Disposal of Construction	Contractor	All relevant worksites	Implemented

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		and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.			
		Chemical Waste			
		After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Contractor	All relevant worksites	Partially Implemented
		General Refuse			
		General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem.	Contractor	All relevant worksites	Implemented
Land Contamination Measures					
		For any excavation works conducted at Radar Station			
AEIAR-130/2009 S3.6.57	AEIAR 130/2009 EM&A Manual S4.6	As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.	Contractor	All relevant worksites	Not Applicable
Landscape and Visual Impact					
New Distributor Roads Serving the Planned KTD					
		Construction Phase			
AEIAR-130/2009 S3.8.12	AEIAR 130/2009 EM&A Manual S2.8	All existing trees should be carefully protected during construction.	Contractor	All relevant worksites	Not Applicable
		Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.	Contractor	All relevant worksites	Not Applicable
		Control of night-time lighting.	Contractor	All relevant	Not Applicable

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				worksites	
		Erection of decorative screen hoarding.	Contractor	All relevant worksites	Implemented
Trunk Road T2					
		Construction Phase			
AEIAR-174/2013 S9.9.1.1	AEIAR-174/2013 EM&A Manual S7.2.1.2	All works shall be carefully designed to minimize impacts on existing landscape resources and visually sensitive receivers. Existing trees within works area shall be retained and protected.	Contractor	All relevant worksites	Not Applicable
		Existing trees of good quality and condition that are unavoidably affected by the works should be transplanted.	Contractor	All relevant worksites	Not Applicable
		Large temporary stockpiles of excavated material shall be covered with unobtrusive sheeting to prevent dust and dirt spreading to adjacent landscape areas and vegetation, and to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Partially Implemented
		Construction plant and building material shall be orderly and carefully stored in order to create a neat and tidy visual appearance.	Contractor	All relevant worksites	Implemented
		Erection of decorative screen hoarding should be designed to be compatible with the existing urban context.	Contractor	All relevant worksites	Implemented
		All lighting in construction site shall be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC user. The contractor shall consider other security measures, which shall minimize the visual impacts.	Contractor	All relevant worksites	Not Applicable
General Condition					
		The Permit Holder shall display conspicuously a copy of this Permit on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public's information at all times. The Permit Holder shall ensure that the most updated information about the Permit, including any amended Permit, is displayed at such locations. If the Permit Holder surrenders a part or the whole of the Permit, the notice he sends to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).	Contractor	All relevant worksites	Implemented

Implementation status: Implemented / Partially Implemented / Not Implemented / Not Applicable