Contract No. DC/2009/24
HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

Quarterly Environmental Monitoring and Audit Report July to September 2017

(Version 1.0)

Certified By

(Environmental Team Leader)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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MOTT MACDONALD

CE/Harbour Area Treatment Scheme
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Attn: Mr. Danny Tang

Agreement No. CE 8/2009(EP) Harbour Area Treatment Scheme Stage 2A Independent Environmental Checker for Construction Phase – Investigation

Our Reference
GCB/AFK/DC/bw/
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Contract No. DC/2009/24 – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau

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Submission of 23rd Quarterly EM&A Report for July to September 2017 (v1.0)

30 November 2017
By Post

Dear Sir,

We refer to the captioned Quarterly EM&A Report for July to September 2017 (v1.0) received on 29 November 2017 and confirm that we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

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ABBREVIATION AND ACRONYM

AL Levels	Action and Limit Levels
DSD	Drainage Services Department
E / ER	Engineer/Engineer's Representative
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EMIS	Environmental Mitigation Implementation Schedule
EP	Environmental Permit
EPD	Environmental Protection Department
ET	Environmental Team
HATS 2A	Harbour Area Treatment Scheme Stage 2A
HVS	High Volume Sampler
IEC	Independent Environmental Checker
RE	Resident Engineer
RH	Relative Humidity
QA/QC	Quality Assurance / Quality Control
SLM	Sound Level Meter
WMP	Waste Management Plan

EXECUTIVE SUMMARY

Introduction

1. This is the 23rd Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for DSD Contract No. DC/2009/24 "HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau" (The Project) which documents the key information of EM&A of Contract No. DC/2009/24 and environmental monitoring results from Contract DC/2009/24 HATS Stage 2A with the Environmental Permit (Permit No. EP-322/2008/G) for July to September 2017.

2. The site activities undertaken for in the reporting quarter included:

July 2017:
- Wah Fu PTW –Green roof installation for FSGT, Grit Handling Room and Switch and Control Room, Continuous interim operation and maintenance of new FSGT facilities, Boundary wall construction adjacent to sea side, Plumbing installation work in FSGT building, Installation of doors, Road and Drainage works construction;
- Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Installation the effluent pumping raising main for pump no.1 & 2, Install effluent pump no.1 & 2 and associated pipeworks in 2nd half dry well;
- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Underground drainage construction, Internal & external finishing works installation inside Admin. & Workshop Building, Modify the existing switchboard compartments for upgraded plant equipment in existing switch room, Modification of existing outfall chamber, Building services installation of Administration Building, Installation of new ACF filter tank;
- Sandy Bay PTW – N/A;
- Cyberport PTW – New walkway and associated facilities construction, Re-painting external wall of CEPT building.

August 2017:
- Wah Fu PTW – Boundary wall construction adjacent to sea side, Road and Drainage works construction, Plumbing installation work in FSGT building, Installation of doors, Tested the Fire Service System, Continuous interim operation and maintenance of new FSGT facilities;
- Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Installation the effluent pumping raising main for pump no.1 & 2;
- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Underground drainage construction, Internal & external finishing works installation inside Admin. & Workshop Building, Modification of existing outfall chamber, DCS cable tray and cabling work from existing inlet pumping station to control room in administration building, Modify the existing switchboard compartments for upgraded plant equipment in existing switch room, Building services installation of Administration Building, Installation of new ACF filter tank;
- Sandy Bay PTW – N/A;
- Cyberport PTW – Re-painting external wall of CEPT building.

September 2017:
- Wah Fu PTW – Boundary wall construction adjacent to sea side, Road and Drainage works construction, Plumbing installation work in FSGT building, Tested the Fire Service System,

Continuous interim operation and maintenance of new FSGT facilities;

- Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Installation the effluent pumping raising main for pump no.1 & 2;
- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Underground drainage construction, Internal & external finishing works installation inside Admin. & Workshop Building, Modification of existing outfall chamber, DCS cable tray and cabling work from existing inlet pumping station to control room in administration building, Modify the existing switchboard compartments for upgraded plant equipment in existing switch room, Building services installation of Administration Building, Installation of new ACF filter tank;
- Sandy Bay PTW – N/A;
- Cyberport PTW – N/A.

Environmental Monitoring Works

3. The environmental monitoring works of the Project was conducted by the ET for the Contract: DC/2009/24 under HATS 2A with the Environmental Permit and in accordance with the EM&A Manual. The monitoring results were checked and reviewed. Site audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.

Air Quality and Noise

4. The monitoring of air quality monitoring station at Wah Ming House, Wah Fu Estate (CM_WF1a) and noise monitoring station at Aegean Terrace (M6a), Wah Ming House (M7a) and Wah Ling House (M8) was handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in July 2014. The noise monitoring station at Mei Chun Court, South Horizons (M9) was handed over to Contract No. DC/2009/24 from Contract No. DC/2008/09 on 28 July 2014. The air quality and noise monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from July 2014.

5. Furthermore, the monitoring of air quality monitoring station at The Arcade, Cyberport (CM_CB1a) and The Hong Kong Ice and Cold Storage (CM_AB1a) were handed over to Contract No. DC/2009/24 from Contract No. DC/2007/24 in August 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality in the vicinity of the sensitive receivers starting from August 2014.

6. However, the air quality monitoring at CM_AB1a had been rejected and could not be continued, the proposed location (CM_AB1b – Works Site Boundary of Aberdeen PTW) was approved by ER on 22 July 2014 and approved by EPD on 5 December 2014. The air quality monitoring stations was set up by Cinotech Consultants Limited (ET for this project) to monitor the air quality and noise in the vicinity of the sensitive receivers starting from August 2014. The location of CM_AB1b is shown in **Figure 1c-2**.

Noise (Sandy Bay PTW)

7. The Proposal for Termination of Construction Phase EM&A Works for Contract No. DC/2007/24 was submitted by its ET to EPD in July 2015. The proposal, including the

termination of noise monitoring at Chuk Lam Ming Tong (M5), was approved by the EPD on 27 July 2015. The result of noise monitoring at M5 would not be reported from 27 July 2015 , based on section 15.11 of the EM&A Manual of this Project as below:

i) Construction activities including the remaining outstanding construction works for Sandy Bay PTW have been completed by the Contractor of this Project, therefore, no major environmental impact from Sandy Bay PTW in anticipated due to the Project.

8. Summary of the non-compliance of the reporting quarter is tabulated in **Table I**.

Table I Summary Table for Non-compliance Recorded in the Reporting Quarter

Monitoring Station	Parameter	No. of Exceedance		No. of Exceedance Due to the Project		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
CM_CB1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_WF1a	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
CM_AB1b	1-hr TSP	0	0	0	0	N/A
	24-hr TSP	0	0	0	0	N/A
M6a	Noise (Day Time)	0	0	0	0	N/A
M7a		0	0	0	0	N/A
M8		0	0	0	0	N/A
M9		0	0	0	0	N/A

1-hour TSP Monitoring

9. All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

10. All 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Construction Noise

11. All construction noise monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.

Environmental Complaint and Prosecution

12. There was no environmentally related summons, prosecutions or complaints received for the Project in the reporting quarter. And six complaints were already received since the Project commencement. The Complaint Log is presented in **Appendix J.**

Environmental Licenses and Permits

13. Licenses/Permits granted to the Project include the Environmental Permit (EP), Notification of Works under APCO, Water Discharge Licences and Registered as a Chemical Waste Producer for Sandy Bay, Cyberport, Ap Lei Chau, Aberdeen, Wah Fu PTWs sites.

Future Key Issues:

14. Major site activities for the coming two months include:
    - Wah Fu PTW: Operation of New Treatment Plant, Construction of boundary wall;
    - Aberdeen PTW: Operation of PTW, Finishing Works of the Workshop and Administration Building, Building Service Installation of the Workshop and Administration Building, Road & Drainage Works along access road, Modification of Existing Outfall Chamber and Bypass Manhole, Construction of Cable Drawpits and Cable Ducts, Green roof installation;
    - Ap Lei Chau PTW: Operation of PTW, Construction for the Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Building Service installation of Screening and Degritting Facilities and Effluent Pumping Station, Finishes Works of Screening and Degritting Facilities and Effluent Pumping Station;
    - Sandy Bay PTW: N/A; and
    - Cyberport PTW: N/A.

15. The environmental concerns in coming months are mainly on chemicals storage, surface run off, spillage of wastewater during rainstorm and dust generated from the construction works.

1. INTRODUCTION

Background

1.1 The Project 'HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau' with Contract No: DC/2009/24 mainly comprises the following major works:

- The construction of screens, grit traps, deodourisation rooms, workshop and administration buildings, and modification of existing inlet pumping stations at the preliminary treatment works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau.

1.2 The general location plan of the Project is shown in **Figure 1**.

1.3 The Project is under Harbour Area Treatment Scheme (HATS) Stage 2A and is a designated project (Register No. : AEIAR-121/2008). The environmental permit: (Permit No. EP-322/2008/G) which was issued on 10th October 2012 to the Drainage Services Department (hereinafter called the DSD) as the Permit Holder.

1.4 Leader and JEC Joint Venture (hereafter called the LJJV) was commissioned by the DSD to undertake the construction of the Contract No. DC/2009/24 "Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau".

1.5 Cinotech Consultants Limited was commissioned by LJJV to undertake the Environmental Monitoring and Audit (EM&A) works for the project and was appointed as the Environmental Team (ET) of the Project under Condition 2.1 of the EP.

1.6 The construction works at Wah Fu PTW and Ap Lei Chau PTW were commenced in the January 2012.

1.7 The construction phase of EM&A programme of the Project commenced in January 2012.

1.8 This is the 23rd quarterly EM&A report summarizing the EM&A works conducted for the Project in July to September 2017.

2 PROJECT CHARACTERISTICS

Project Organization and Contacts of Key Management

2.1 Different parties with different levels of involvement in the project organization include:

- Project Proponent – The Drainage Services Department (DSD)
- Engineer's Representative (ER) – Ove Arup & Partners Hong Kong Ltd.
- Contractor –Leader and JEC Joint Venture (LJJV)
- Environmental Team (ET) – Cinotech Consultants Ltd.
- Independent Environmental Checker (IEC) –Mott MacDonald Hong Kong Ltd.

2.2 The key contacts of the Project and the ET organization chart and are shown in **Appendix A** and **Figure 2**.

Construction Programme and Synopsis of Work

2.3 The construction programme is presented in **Appendix B**. The site activities undertaken during the reporting quarter included:

July 2017:

- Wah Fu PTW –Green roof installation for FSGT, Grit Handling Room and Switch and Control Room, Continuous interim operation and maintenance of new FSGT facilities, Boundary wall construction adjacent to sea side, Plumbing installation work in FSGT building, Installation of doors, Road and Drainage works construction;
- Ap Lei Chau PTW – Continuous interim operation and maintenance of the ALC PTW, Construction of Remaining Part of Screening and Degritting Facilities and Effluent Pumping Station, Installation the effluent pumping raising main for pump no.1 & 2, Install effluent pump no.1 & 2 and associated pipeworks in 2nd half dry well;
- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Underground drainage construction, Internal & external finishing works installation inside Admin. & Workshop Building, Modify the existing switchboard compartments for upgraded plant equipment in existing switch room, Modification of existing outfall chamber, Building services installation of Administration Building, Installation of new ACF filter tank;
- Sandy Bay PTW – N/A;
- Cyberport PTW – New walkway and associated facilities construction, Re-painting external wall of CEPT building.

August 2017:

- Wah Fu PTW – Boundary wall construction adjacent to sea side, Road and Drainage works construction, Plumbing installation work in FSGT building, Installation of doors, Tested the Fire Service System, Continuous interim operation and maintenance of new FSGT facilities;
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- Cyberport PTW – Re-painting external wall of CEPT building.

September 2017:

- Wah Fu PTW – Boundary wall construction adjacent to sea side, Road and Drainage works construction, Plumbing installation work in FSGT building, Tested the Fire Service System, Continuous interim operation and maintenance of new FSGT facilities;
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- Aberdeen PTW – Continuous interim operation and maintenance of the ABN PTW, Underground drainage construction, Internal & external finishing works installation inside Admin. & Workshop Building, Modification of existing outfall chamber, DCS cable tray and cabling work from existing inlet pumping station to control room in administration building, Modify the existing switchboard compartments for upgraded plant equipment in existing switch room, Building services installation of Administration Building, Installation of new ACF filter tank;
- Sandy Bay PTW – N/A;
- Cyberport PTW – N/A.

3. ENVIRONMENTAL MONITORING & AUDIT REQUIREMENTS

Monitoring Parameters and Monitoring Locations

3.1 In accordance with the EM&A Manual, 1-hour and 24-hour Total Suspended Particulates (TSP) and Noise monitoring were conducted to monitor the air quality and the impact noise. The general layout plan of the Project and the monitoring locations are shown in **Figures 1**, **Appendix C** gives details of monitoring requirements.

Monitoring Methodology and Calibration Details

3.2 Monitoring works/equipments were conducted/calibrated regularly in accordance with the Project Specific EM&A Manual. Copies of calibration certificates are attached in the appendices of the Monthly Reports of this Project.

Environmental Quality Performance Limits (Action and Limit Levels)

3.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix D**.

Environmental Mitigation Measures

3.4 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the Project Specific EM&A Manual for the Contractor to implement. A summary of the Environmental Mitigation Implementation Schedule (EMIS) is given in **Appendix G**.

4. MONITORING RESULTS

Weather Conditions

4.1 The weather conditions during monitoring sessions were mainly sunny and sometimes cloudy. The weather conditions for each individual monitoring session were presented in the field record sheets and they could be found in the Appendices of the corresponding monthly EM&A reports.

Air Quality

1-hr TSP Monitoring and 24-hr TSP Monitoring

4.2 No Action/Limit Level exceedance was recorded in the reporting quarter. Summary of exceedance is presented in **Appendix K.**

4.3 **Table 4.1** summarizes the dust monitoring results which were extracted from the monthly reports for this Project.

4.4 The detailed monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results could be referred to **Appendix E** of this report.

Table 4.1 Summary of 1-hour and 24-hour TSP Monitoring Result in Reporting Quarter

Reporting Months	Air Quality Monitoring Station	Average µg/m³	Range µg/m³	Action Level µg/m³	Limit Level µg/m³
1 hour TSP					
July 2017	CM_CB1a	30	12-57	280	500
	CM_WF1a	34	17-55	285	
	CM_AB1b	35	22-58	283	
August 2017	CM_CB1a	71	20-216	280	
	CM_WF1a	85	22-208	285	
	CM_AB1b	82	23-175	283	
September 2017	CM_CB1a	129	10-265	280	
	CM_WF1a	99	12-272	285	
	CM_AB1b	130	11-283	283	
24 hours TSP					
July 2017	CM_CB1a	41	29-64	178	260
	CM_WF1a	31	24-49	185	
	CM_AB1b	37	11-63	174	
August 2017	CM_CB1a	70	43-116	178	
	CM_WF1a	52	23-111	185	
	CM_AB1b	28	6-49	174	
September 2017	CM_CB1a	64	37-108	178	
	CM_WF1a	50	13-99	185	
	CM_AB1b	68	35-103	174	

Noise

4.5 All construction noise monitoring was conducted as scheduled in the reporting quarter.

4.6 No Action/Limit Level exceedance was recorded in the reporting quarter. Summary of exceedance is presented in **Appendix K.**

4.7 **Table 4.2** summarizes the noise monitoring results which were extracted from the monthly reports for this Project.

4.8 The construction noise monitoring at the designated locations was conducted by the ET of this Project as scheduled in the reporting quarter. The monitoring results and graphical presentation are provided in **Appendix F** of this report.

Table 4.2 Summary of Noise Monitoring Result in Reporting Quarter

Reporting Months	Noise Quality Monitoring Station	Range, dB(A) Leq(30 min.)	Limit Level, dB(A) Leq(30 min.)
July 2017	M6a	53-56(1)	75.0
	M7a	54-61	
	M8	60-67	
	M9	47-64	
August 2017	M6a	54-56(1)	
	M7a	55-61	
	M8	60-68	
	M9	57-61	
September 2017	M6a	50-63(1)	
	M7a	50-58	
	M8	51-67	
	M9	56-64	

Remark: (1) Free-field measurement, +3dB correction.

5 ENVIRONMENTAL AUDIT

Implementation Status of Environmental Mitigation Measures

5.1 The implementation status of the Environmental Mitigation Implementation Schedule (EMIS) is given in **Appendix G**.

Site Audit Summary

5.2 During site inspections in the reporting period, no non-conformance was identified. The observations and recommendations made in each site audit session in the reporting period are summarized in **Table 5.1.**

Table 5.1 ET's Observations and Recommendations of Site Audits

Parameters	Date/Ref. Number	Observations	Follow Up Action
Water Quality	170706-R01	The bund should be provided to prevent the muddy water runoff near the site area of Wah Fu-PTW.	The bund was provided near the site area of Wah Fu-PTW.
	170811-R02	The bund should be provided to prevent the muddy water runoff from the site at Abd-PTW.	The bund was provided at Abd-PTW.
	170825-R01	The drainage system should be well-maintained and covered if necessary at Abd-PTW.	The drainage system is well-maintained and bunded at Abd-PTW.
	170922-R01	The sediment/silt should be cleared properly and regularly in the U-channel at Wah Fu-PTW	The sediment/silt was cleared in the U-channel at Wah Fu-PTW.
	170922-R02	The bund should be provided to prevent the muddy/slurry water runoff at Wah Fu-PTW and ALC-PTW.	Please refer to 170929-R01.
	170922-O04	The silt trail was observed near the site entrance of Abd-PTW. The Contractor was reminded to clear the silt properly.	The silt trail was not observed near the site entrance of Abd-PTW.
	170929-R01	The bund should be provided to prevent the slurry water runoff at ALC-PTW.	The bund was provided at ALC-PTW.
Air Quality	170811-R01	The dusty material should be covered by impervious material properly to prevent the dust emission at Abd-PTW.	The dusty material was covered by impervious material at Abd-PTW.
Waste/ Chemical Management	170706-R03	The skip for collecting the general refuse should be well maintained at Cyberport-PTW.	The maintenance of skip collecting the general refuse was provided at Cyberport-PTW.
	170714-O01	The oil leakage was observed from the excavator at Abd-PTW. The Contractor was reminded to provide the maintenance and clear the oil stain properly.	The identified excavator was removed and not observed at Abd-PTW.
	170914-O01	The oil leakage was observed from the excavator at Abd-PTW. The Contractor was reminded to provide the maintenance and clear the oil stain properly.	Please refer to 170922-O03.

	170922-O03	The oil leakage was observed from the excavator at Abd-PTW. The Contractor was reminded to provide the maintenance and clear the oil stain properly.	The oil leakage was not observed from the excavator at Abd-PTW.
Landscape and Visual	--	--	--
Noise	170706-R02	The breaker should be shielded by appropriate acoustic material to prevent the noise nuisance near the site area of Wah Fu-PTW.	The breaker was shielded by appropriate acoustic material near the site area of Wah Fu-PTW.
Permit/ Licenses	--	--	--

Status of Environmental Licensing and Permitting

5.3 Environmental licenses and permits including the Billing Account for Disposal of Construction Waste, Chemical Waste Producer and Wastewater Discharge were in place and valid during the reporting quarter. A summary status of licenses and permits is given in **Appendix H**.

Advice on Waste Management Status

5.4 The amount of wastes generated by the activities of the Project in the reporting period was attached in the appendices of the monthly reports for July to September 2017 and was shown in **Appendix I**.

6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

Summary of Exceedances

6.1 Environmental monitoring works were performed in the reporting quarter and all monitoring results were checked and reviewed. A summary of exceedance is attached in **Appendix K**.

6.2 No Action/Limit Level exceedance of 1-hour TSP and 24-hour TSP was recorded in the reporting quarter.

6.3 No Action/Limit Level exceedance of Construction Noise was recorded in the reporting quarter.

Review of the Reasons for and the Implications of Non-compliance

6.4 There was no non-compliance from the site audits in the reporting quarter. The observations and recommendations made in each individual site audit session were presented in **Table 5.1**.

Summary of action taken in the event of and follow-up on non-compliance

6.5 There was no particular action taken since no non-compliance was observed from the site audits in the reporting quarter.

7 ENVIRONMENTAL COMPLAINTS

7.1 There was no environmental prosecution or notification of summons received while six complaints were already received since the Project commencement. The updated Complaint Log is attached in **Appendix J.**

8 NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

8.1 No environmental prosecution was recorded in the reporting quarter.

9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

9.1 Key environmental issues for the coming months include:

- Generation of dust from stockpiles of excavated and dusty materials, unpaved site area and vehicle movement, roadworks, excavation works and loading and unloading dusty materials on-site;
- Noise nuisance from operation of equipment and machinery on-site;
- Provision well maintenance on the storage facilities of chemicals/fuel and chemical waste/waste oil on-site;
- Maintenance of de-silting facilities and drainage system such as U-channels;
- Blockage of U-channel by accumulated silt;
- Silty surface runoff generated from the site area; and
- Silt and dust getting into the public area by the leaving site vehicles at the site exits without adequate wheel washing facilities.

9.2 According to the environmental audit performed in the reporting quarter, the following recommendations were made:

Water Quality

- The bund should be provided to prevent the muddy water runoff near the site area; and
- The drainage system should be well-maintained and covered if necessary in the site area; and
- The sediment/silt should be cleared properly and regularly in the U-channel in the site area; and
- Properly clear the vehicles before leaving the site area to prevent the formation of the silt trail.

Air Quality

- Proper cover the dusty material by the impervious material to prevent the dust emission in the site area

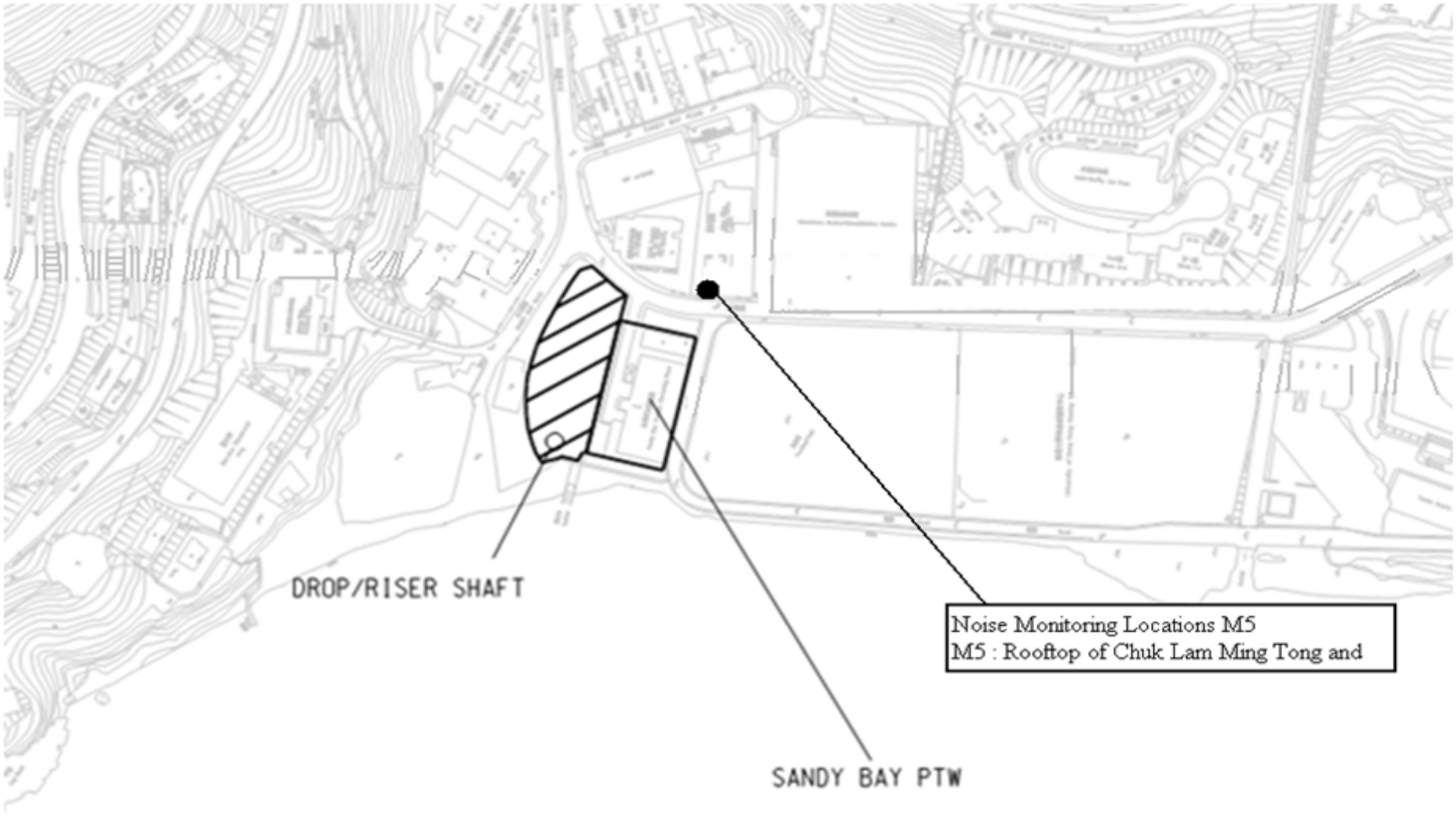
Waste/Chemical Management

- The maintenance of skip for collecting the general refuse should be provided in the site, and;
- The maintenance of the excavator should be provided to prevent the oil spillage/leakage and clear the oil stain properly in the site area.

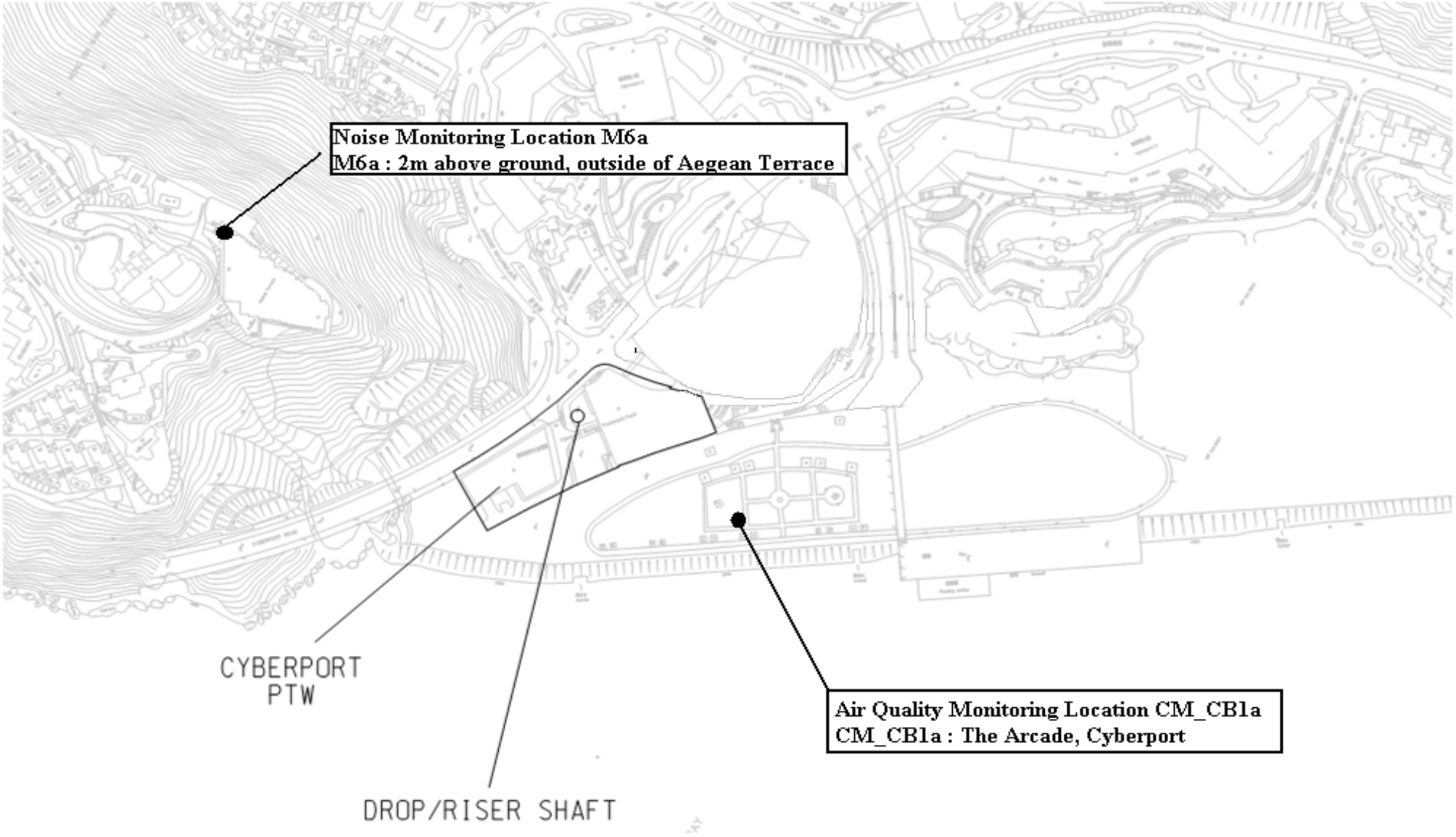
Construction Noise Impact

- Appropriate acoustic material should be provided to shield the breaker to prevent the noise nuisance in the site.

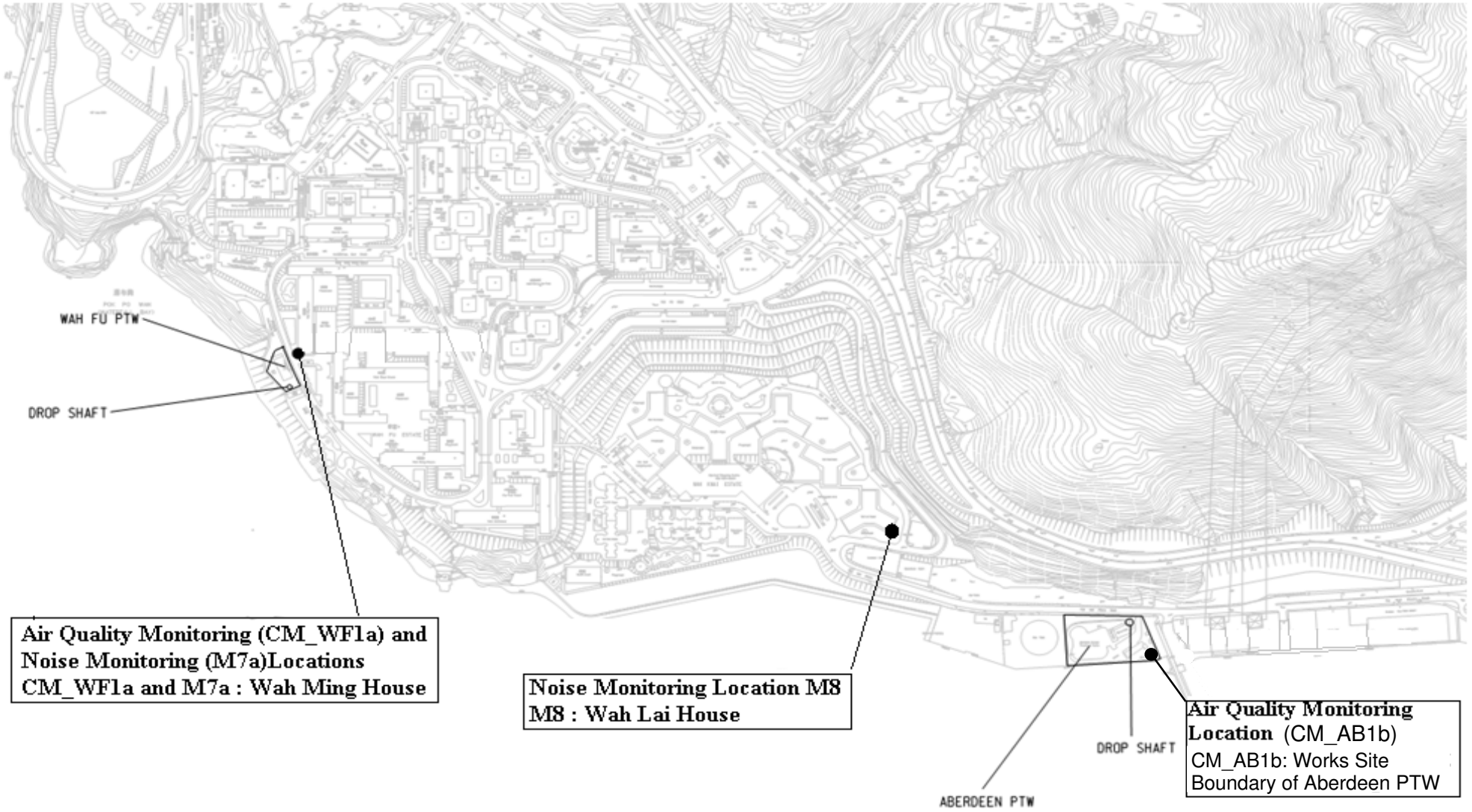
FIGURES



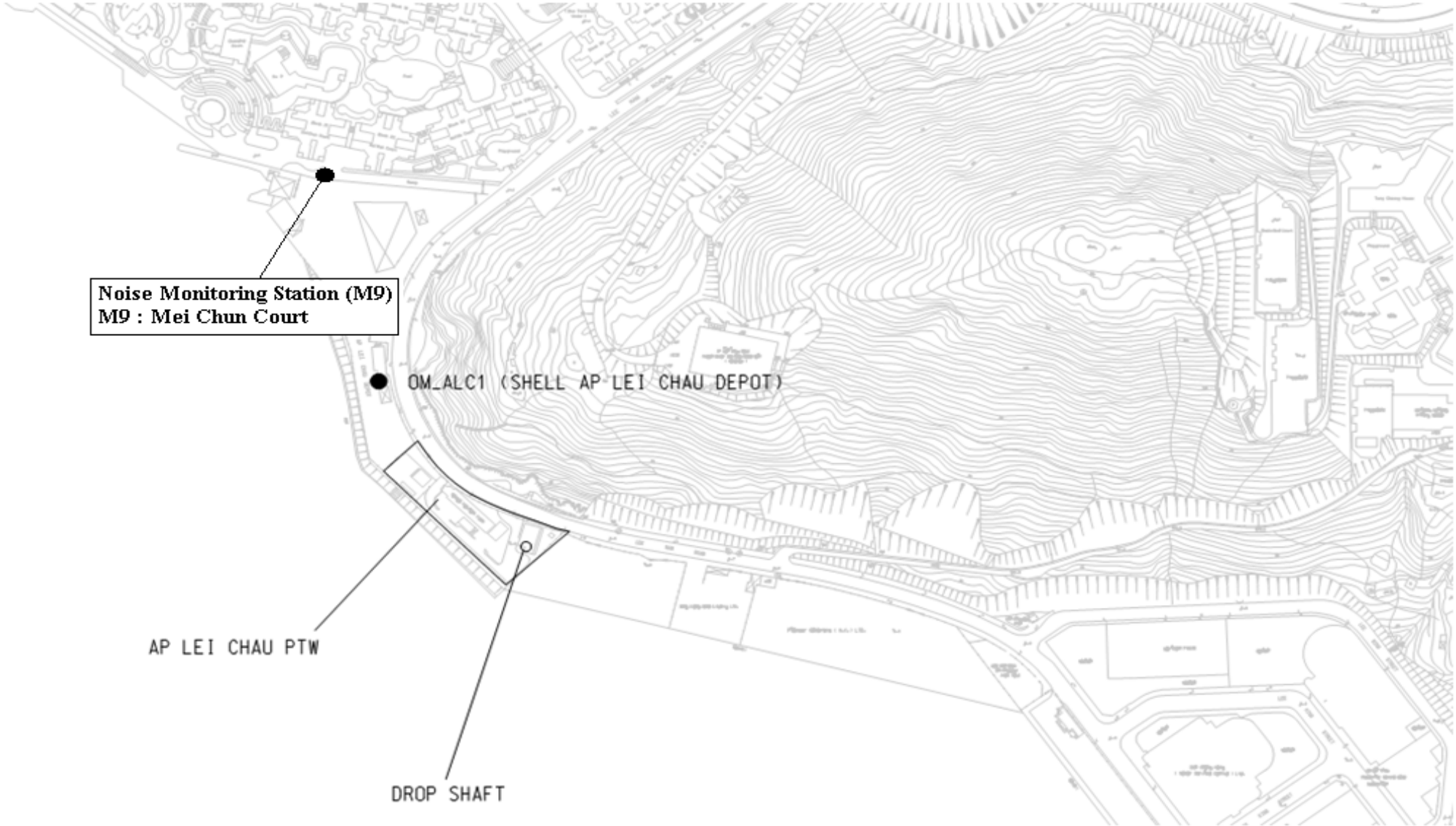
Title	Contract No: DC/2009/24 HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Scale N.T.S	Project No. MA11060	CINOTECH
	General Location Plan of Sandy Bay PTW and Locations of Noise Monitoring Stations	Date 01/2012	Figure 1a	



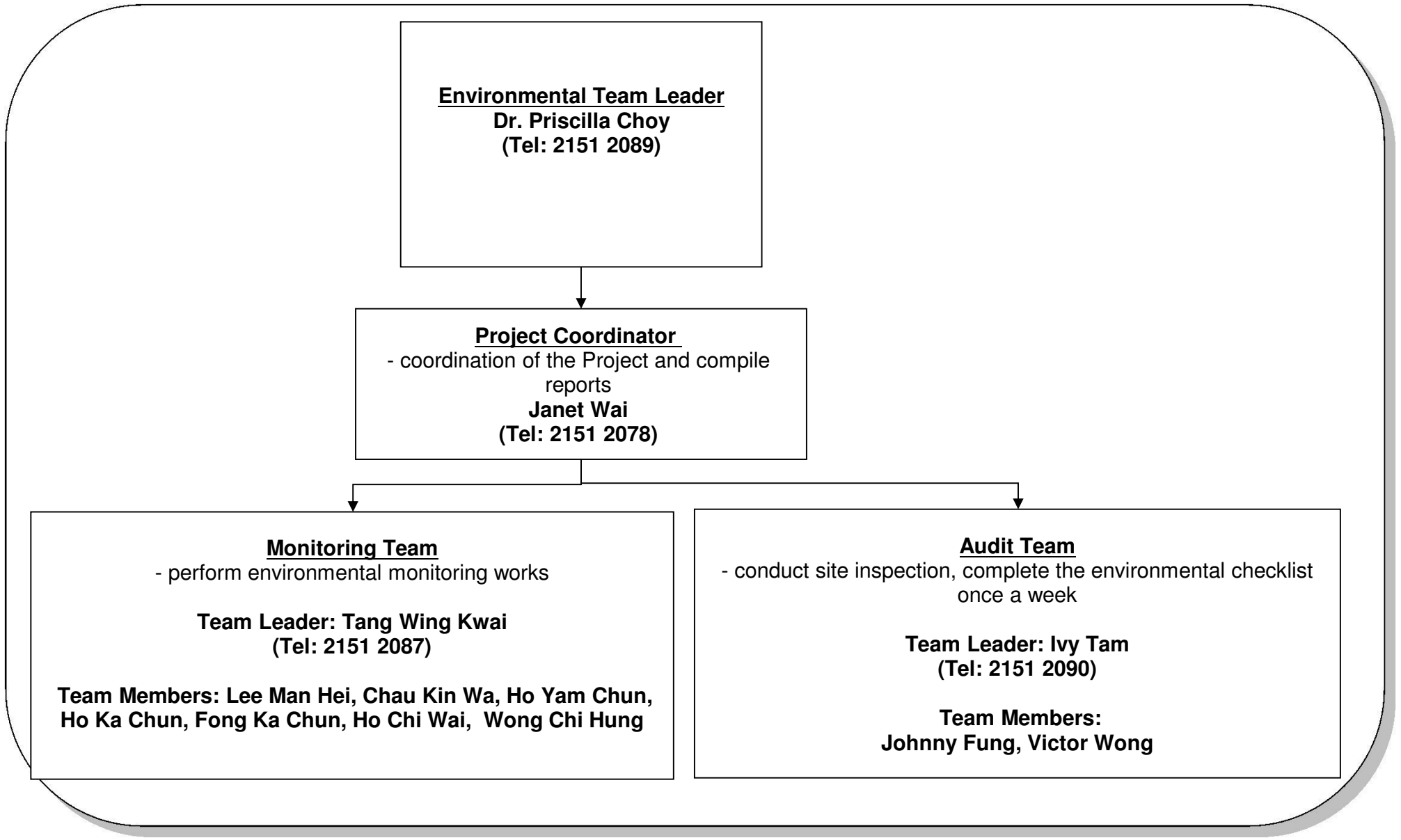
Title	Contract No: DC/2009/24 HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Scale N.T.S	Project No. MA11060	CINOTECH
	General Location Plan of Cyberport PTW and Locations of Air Quality and Noise Monitoring Stations	Date 01/2012	Figure 1B	



Title	Contract No: DC/2009/24 HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Scale N.T.S	Project No. MA11060	CINOTECH
	Location of Wah Fu and Aberdeen PTW and Locations of Air Quality and Noise Monitoring Locations	Date 07/2014	Figure 1C -2	



Title	Contract No: DC/2009/24 HATS 2A - Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	Scale N.T.S	Project No. MA11060	CINOTECH
	Locations of AP LEI CHAU PTW and the Noise Monitoring Location	Date 1/2012	Figure 1D	



Title	Contract No. DC/2009/24 HATS Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau ET's Organization Chart	Scale: N.T.S	Project No.: MA11060	CINOTECH
		Date: Mar-15	Figure: 2	

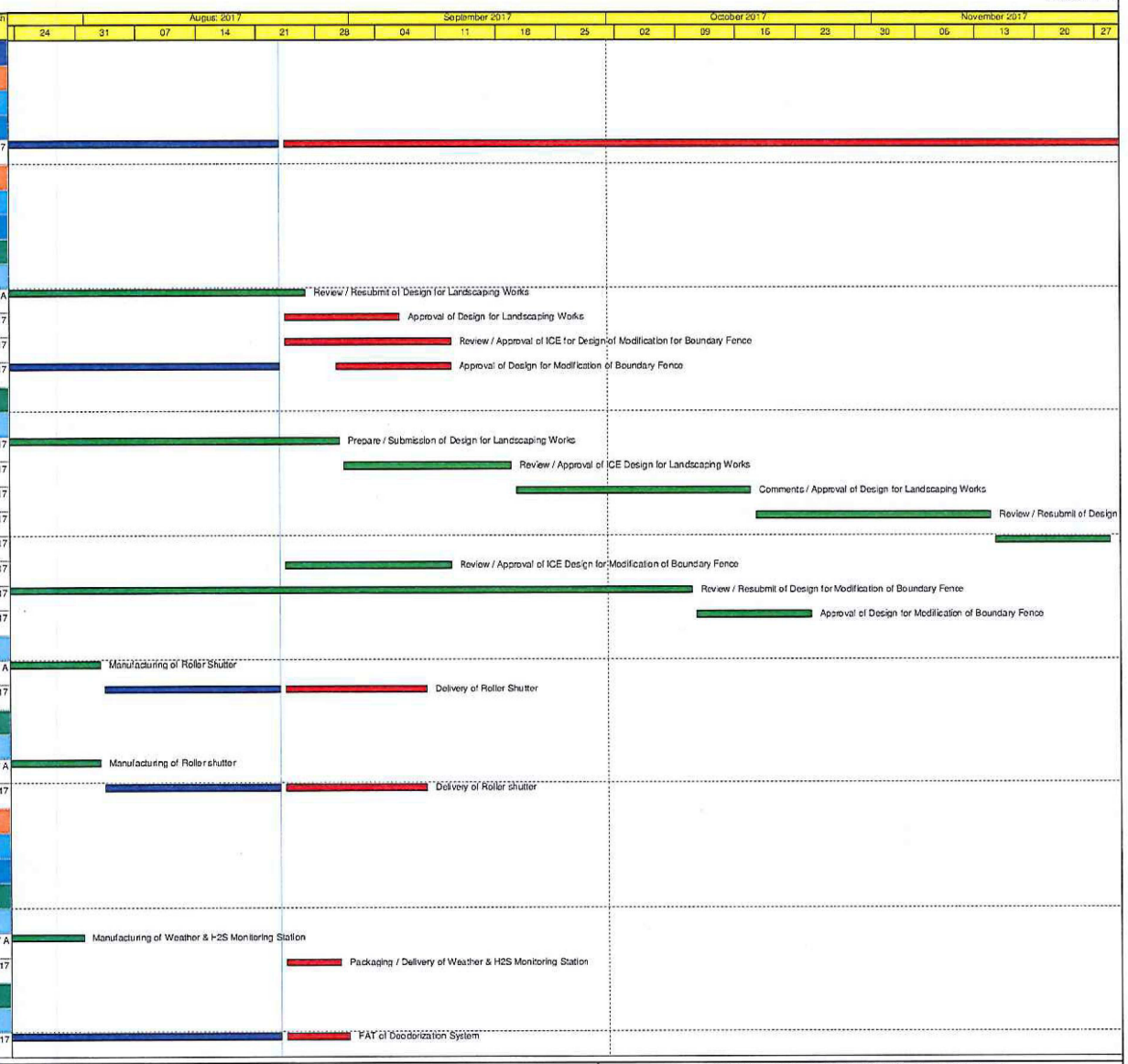
APPENDIX A
CONTACT DETAILS OF THE PROJECT ORGANISATION

Appendix A - Contact Details of the Project Organization

Party	Role	Name	Position	Phone No.
Drainage Services Department	Project Proponent	Mr. Vincent Y. K. Wong	Senior Engineer 2	2159 3406
Ove Arup & Partners Hong Kong Ltd	Engineer's Representative	Mr. Ted Tang	Principal Resident Engineer	2370-4311
	Coordinator	Ms. Natalie Kwok	Resident Engineer	6794 8844
Cinotech	Environmental Team	Dr. Priscilla Choy	ET Leader	2151 2089
		Ms. Janet Wai	Project Coordinator & Audit Team Leader	2157 3879
Mott MacDonald	Independent Environmental Checker	Dr. Anne Kerr	Independent Environmental Checker	2828 5757
Leader and JEC Joint Venture	Contractor	Mr. Kelvin Cheung	Site Agent	9656 8865
		Ms. S.P. Ngan	Environmental Officer	9516 9431

APPENDIX B
CONSTRUCTION PROGRAMME

Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
DSD - HATSS2 Upgrading of PTW (DC/2009/24)					
Particulars					
Key Dates					
Commencement / Completion					
24GEN00020	Time for Completion of Project	0%	1309	31-Aug-11 A	06-Dec-17
Civil & Geo. Submission					
Contractor's Design, Submission / Approval & Procurement					
Technical Information & Drawings					
Wah Fu					
Major Technical Data / Civil Works Design					
24DWFU00380	Review / Resubmit of Design for Landscaping Works	100%	21	19-Jan-17 A	26-Aug-17 A
24DWFU00390	Approval of Design for Landscaping Works	0%	14	24-Aug-17	06-Sep-17
24DWFU00460	Review / Approval of ICE for Design of Modification for Boundary Fence	0%	20	24-Aug-17	12-Sep-17
24DWFU00490	Approval of Design for Modification of Boundary Fence	0%	14	06-Oct-16 A	12-Sep-17
Aberdeen					
Major Technical Data / Civil Works Design					
24DABN00500	Prepare / Submission of Design for Landscaping Works	0%	40	04-Jul-16 A	30-Aug-17
24DABN00510	Review / Approval of ICE Design for Landscaping Works	0%	20	31-Aug-17	19-Sep-17
24DABN00520	Comments / Approval of Design for Landscaping Works	0%	28	20-Sep-17	17-Oct-17
24DABN00530	Review / Resubmit of Design for Landscaping Works	0%	28	18-Oct-17	14-Nov-17
24DABN00540	Approval of Design for Landscaping Works	0%	14	15-Nov-17	28-Nov-17
24DABN00560	Review / Approval of ICE Design for Modification of Boundary Fence	0%	20	24-Aug-17	12-Sep-17
24DABN00580	Review / Resubmit of Design for Modification of Boundary Fence	0%	28	25-Jan-17 A	10-Oct-17
24DABN00590	Approval of Design for Modification of Boundary Fence	0%	14	11-Oct-17	24-Oct-17
Order / Manufacturing / Shipment / Delivery					
24DABN02560	Manufacturing of Roller Shutter	100%	90	16-May-16 A	02-Aug-17 A
24DABN02570	Delivery of Roller Shutter	0%	30	03-Aug-17 A	09-Sep-17
Ap Lei Chau					
Order / Manufacturing / Shipment / Delivery					
24DALC02640	Manufacturing of Roller shutter	100%	90	16-May-16 A	02-Aug-17 A
24DALC02650	Delivery of Roller shutter	0%	30	03-Aug-17 A	09-Sep-17
Electrical and Mechanical Submission					
Contractor's Design, Submission / Approval and Procurement					
Technical Information & Drawings					
Wah Fu					
Order / Manufacturing / Shipment / Delivery					
24PWFU01600	Manufacturing of Weather & H2S Monitoring Station	100%	140	11-Sep-15 A	31-Jul-17 A
24PWFU01610	Packaging / Delivery of Weather & H2S Monitoring Station	0%	7	24-Aug-17	30-Aug-17
Ap Lei Chau					
Order / Manufacturing / Shipment / Delivery					
24PALC01265	FAT of Deodorization System	0%	30	01-May-17 A	31-Aug-17



Start Date: 25-Jun-11

Finish Date: 06-Dec-18

Date Date: 23-Aug-17

Run Date: 29-Aug-17

- Actual Work
- Critical Remaining Work
- Baseline Milestone
- Current Bar Labels
- Milestone

HATSS2A Contract No. DC/2009/24

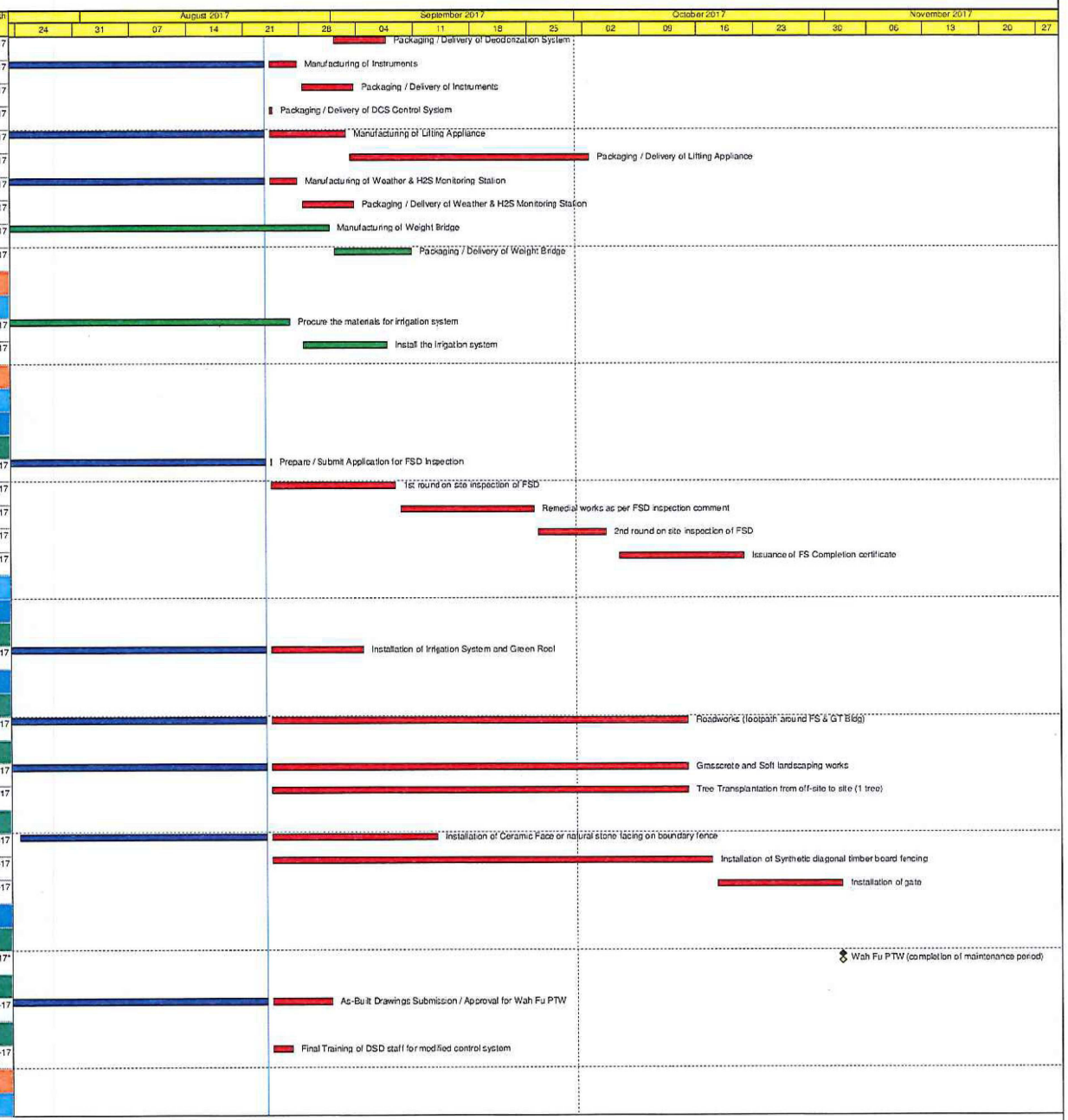
3 MONTHS ROLLING PROGRAMME

AUGUST 2017

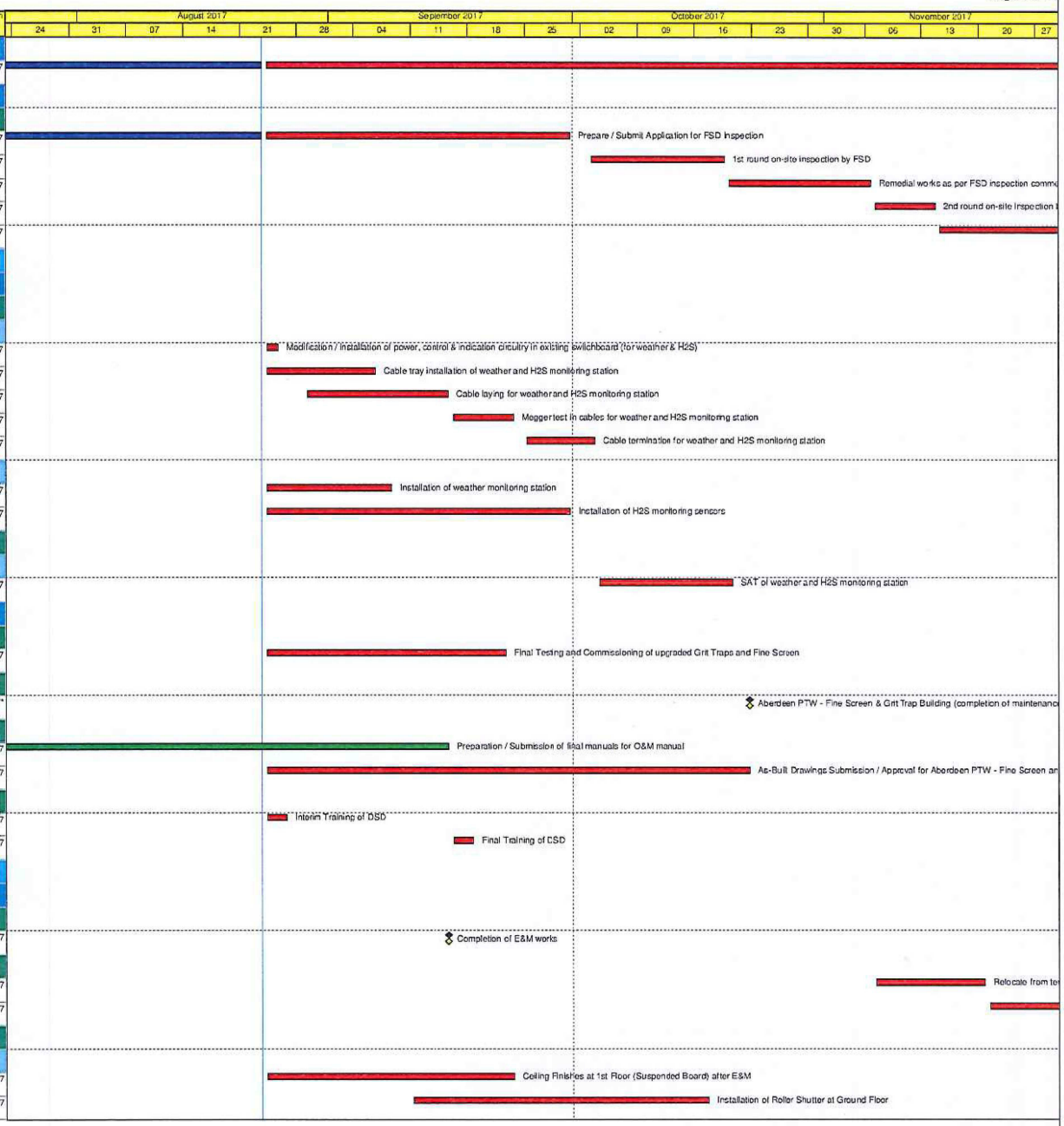
DETAILED WORKS PROGRAMME - DC/2009/24

Date	Revision	Checked	Approved
14-Dec-12	DWP - REVISION 2		
17-Jun-14	DWP - REVISION 3 (S5, 6 & 7)		
06-Apr-16	DWP - REVISION 4		
15-May-17	DWP - REVISION 5		
23-Aug-17	UDWP - REVISION 5		

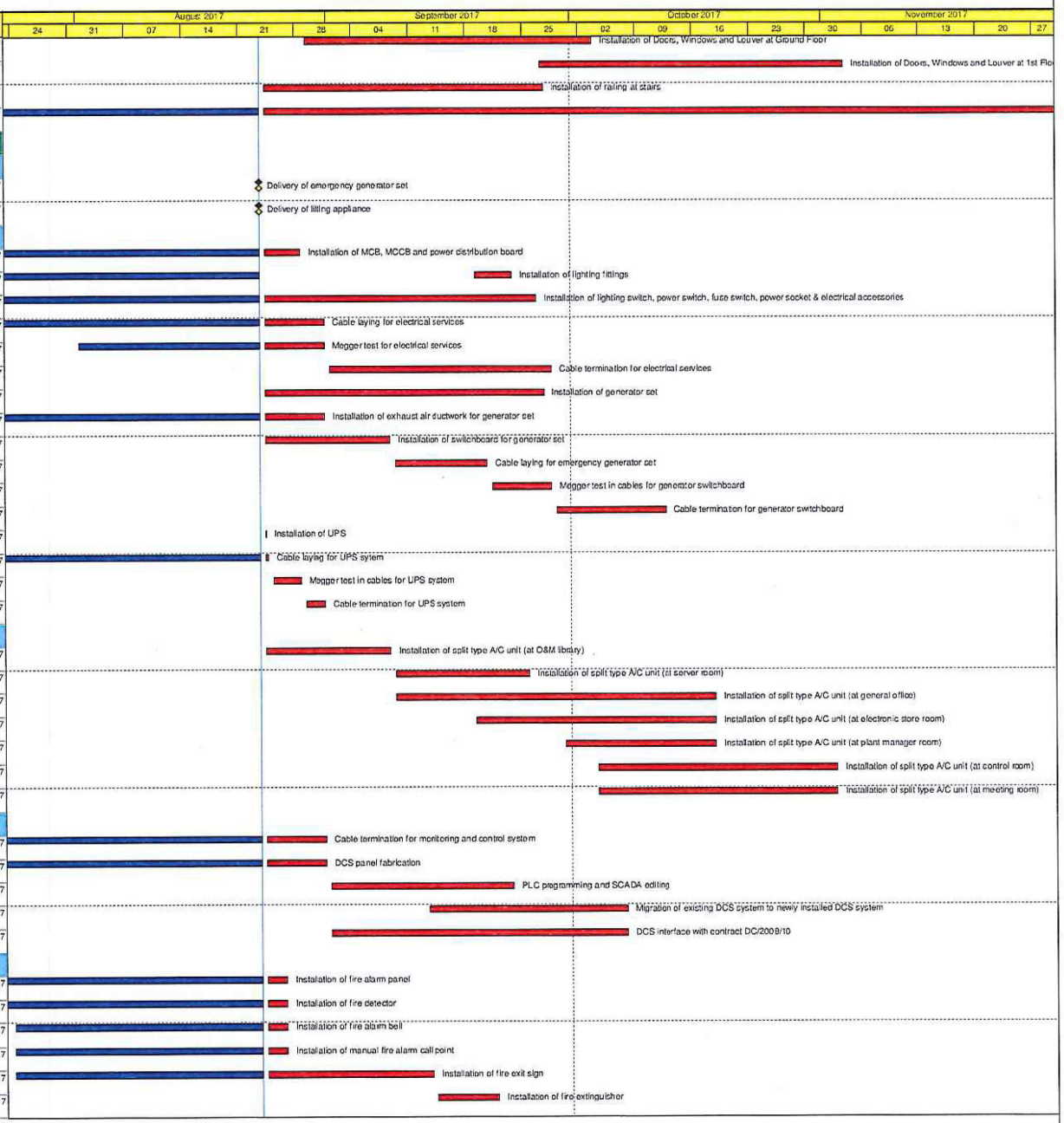
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24PALC01270	Packaging / Delivery of Deodorization System	0%	7	01-Sep-17	07-Sep-17
24PALC01360	Manufacturing of Instruments	0%	110	04-Apr-16 A	27-Aug-17
24PALC01370	Packaging / Delivery of Instruments	0%	7	28-Aug-17	03-Sep-17
24PALC01410	Packaging / Delivery of DCS Control System	0%	1	24-Aug-17	24-Aug-17
24PALC01430	Manufacturing of Lifting Appliance	0%	80	11-Jun-16 A	02-Sep-17
24PALC01440	Packaging / Delivery of Lifting Appliance	0%	30	03-Sep-17	02-Oct-17
24PALC01460	Manufacturing of Weather & H2S Monitoring Station	0%	140	11-Jun-16 A	27-Aug-17
24PALC01470	Packaging / Delivery of Weather & H2S Monitoring Station	0%	7	28-Aug-17	03-Sep-17
24PALC01490	Manufacturing of Weight Bridge	0%	80	11-Sep-15 A	31-Aug-17
24PALC01500	Packaging / Delivery of Weight Bridge	0%	10	01-Sep-17	10-Sep-17
Cyberport PTW					
Walkway Construction (Variation Order)					
24CPTVO-00290	Procure the materials for irrigation system	100%	23	03-Jan-17 A	26-Aug-17
24CPTVO-00300	Install the irrigation system	0%	10	28-Aug-17*	07-Sep-17
Wah Fu PTW					
Key Dates					
Statutory and Utility Applications and Approvals					
Fire Services Department (FSD)					
24WFUI100	Prepare / Submit Application for FSD Inspection	100%	90	01-Dec-15 A	24-Aug-17
24WFUI110	1st round on site inspection of FSD	0%	14	24-Aug-17	08-Sep-17
24WFUI111	Remedial works as per FSD inspection comment	0%	14	09-Sep-17	25-Sep-17
24WFUI112	2nd round on site inspection of FSD	0%	7	26-Sep-17	04-Oct-17
24WFUI113	Issuance of FS Completion certificate	0%	14	06-Oct-17	21-Oct-17
Works for Section 4					
Remaining Works After Early Flow Turning					
Finishing Works					
24WFU02270A30	Installation of Irrigation System and Green Roof	0%	66	13-Jan-17 A	04-Sep-17
Roadworks, Landscape and Modification of Fence					
Roadworks					
24WFU02300A40	Roadworks (footpath around FS & GT Bldg)	0%	45	16-Jan-17 A	14-Oct-17
Landscaping Works					
24WFU02300A50	Grasscrete and Soft landscaping works	30%	60	06-Jul-17 A	14-Oct-17
24WFU02310A10	Tree Transplantation from off-site to site (1 tree)	0%	43	24-Aug-17	14-Oct-17
Modification of Fence					
24WFU02320A30	Installation of Ceramic Face or natural stone facing on boundary fence	0%	45	24-Jul-17 A	13-Sep-17
24WFU02320A40	Installation of Synthetic diagonal timber board fencing	0%	45	24-Aug-17	17-Oct-17
24WFU02320A50	Installation of gate	0%	13	18-Oct-17	02-Nov-17
Completion of Works in Section 4					
Hand Over Date					
24WFU03255	Wah Fu PTW (completion of maintenance period)	0%	0		02-Nov-17*
Submission of Manuals					
24WFU4085	As-Built Drawings Submission / Approval for Wah Fu PTW	0%	60	24-Dec-16 A	31-Aug-17
Trainings for DSD Staff					
24WFU4100	Final Training of DSD staff for modified contro system	0%	3	24-Aug-17	26-Aug-17
Aberdeen PTW					
Key Dates					



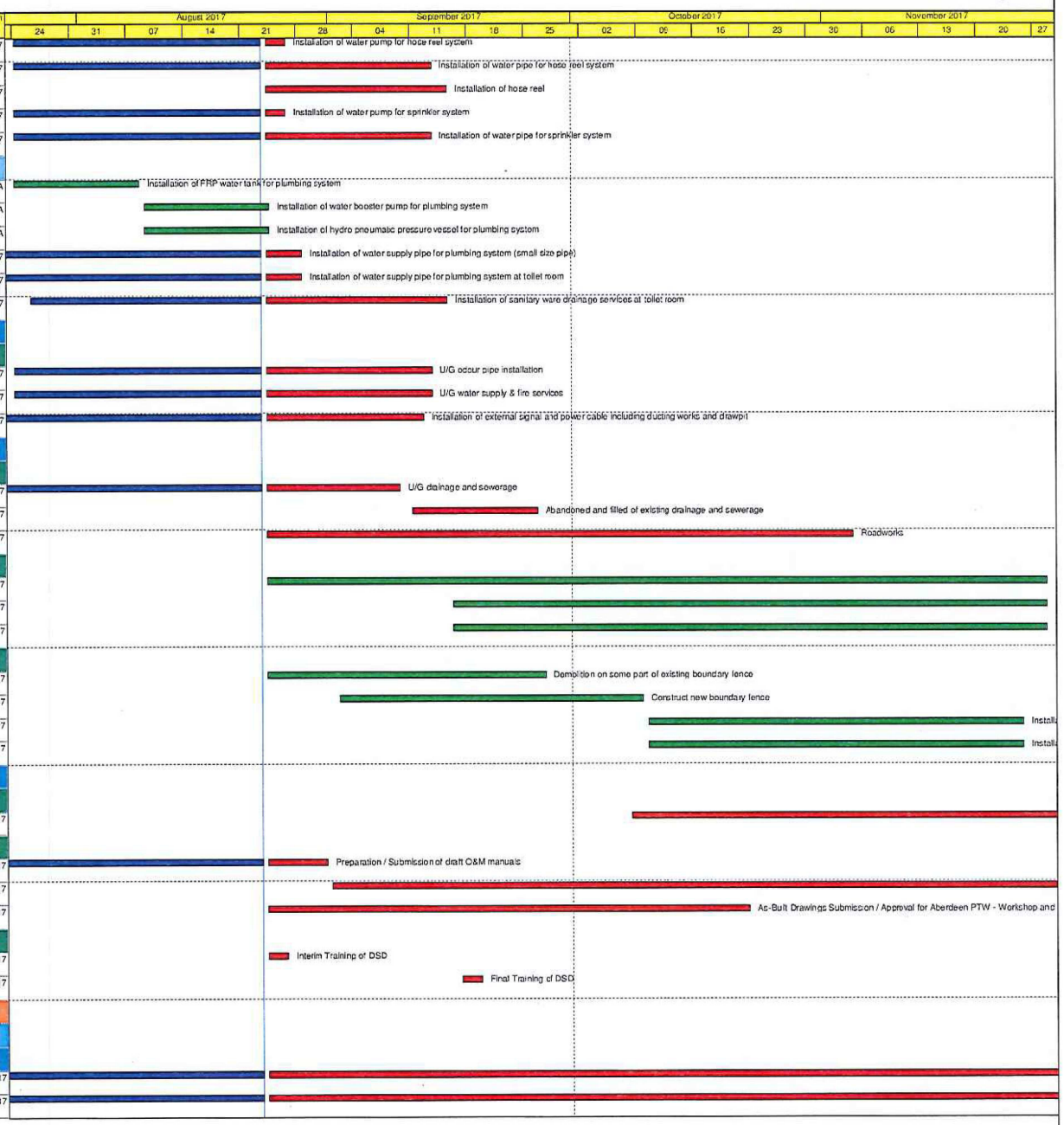
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
Time of Completion					
24ABN00310	Time for Completion of Section 6	0%	1309	31-Aug-11 A	05-Dec-17
Statutory and Utility Applications and Approvals					
Fire Services Department (FSD)					
24ABN00420	Prepare / Submit Application for FSD Inspection	0%	90	03-Oct-16 A	30-Sep-17
24ABN00430	1st round on-site inspection by FSD	0%	14	03-Oct-17	19-Oct-17
24ABN00431	Remedial works as per FSD inspection comment	0%	14	20-Oct-17	05-Nov-17
24ABN00432	2nd round on-site inspection by FSD	0%	7	07-Nov-17	14-Nov-17
24ABN00433	Issuance of FS completion certificate	0%	14	15-Nov-17	30-Nov-17
Works for Section 5					
FS & GT Bldg - Grit Trap No. 2 incl. Middle Chamber (Stage 3)					
Electrical and Mechanical Works					
Electrical Works					
24ABN03936	Modification / installation of power, control & indication circuitry in existing switchboard (for weather & H2S)	0%	2	24-Aug-17	25-Aug-17
24ABN03937	Cable tray installation of weather and H2S monitoring station	0%	12	24-Aug-17	06-Sep-17
24ABN03938	Cable laying for weather and H2S monitoring station	0%	16	29-Aug-17	15-Sep-17
24ABN03939	Megger test in cables for weather and H2S monitoring station	0%	7	16-Sep-17	23-Sep-17
24ABN03940	Cable termination for weather and H2S monitoring station	0%	7	25-Sep-17	03-Oct-17
Control and Monitoring Services incl. Instrumentation					
24ABN03917	Installation of weather monitoring station	0%	14	24-Aug-17	08-Sep-17
24ABN03918	Installation of H2S monitoring sensors	0%	33	24-Aug-17	30-Sep-17
Preliminary Testing and Commissioning					
Control and Monitoring Services incl. Instrumentation					
24ABN03952	SAT of weather and H2S monitoring station	0%	14	04-Oct-17	20-Oct-17
Completion of Works in Section 5					
Final Testing and Commissioning					
24ABN01730	Final Testing and Commissioning of upgraded Grit Traps and Fine Screen	0%	30	24-Aug-17*	22-Sep-17
Hand Over Date					
24ABN03219	Aberdeen PTW - Fine Screen & Grit Trap Building (completion of maintenance period)	0%	0		22-Oct-17*
Submission of Manuals					
24ABN4010	Preparation / Submission of final manuals for O&M manual	0%	90	04-Jan-16 A	15-Sep-17
24ABN4020	As-Built Drawings Submission / Approval for Aberdeen PTW - Fine Screen and Grit Trap Building	0%	60	24-Aug-17	22-Oct-17
Trainings for DSD Staff					
24ABN4030	Interim Training of DSD	0%	3	24-Aug-17	26-Aug-17
24ABN4040	Final Training of DSD	0%	3	16-Sep-17	18-Sep-17
Works for Section 6					
Workshop and Administration Building					
Interface between Civil / ABWF / E&M Works					
24MABN00560	Completion of E&M works	0%	0		15-Sep-17
Temporary Works / Demolition Works					
24ABN00745C70	Relocate from temporary office to new Admin & Workshop Building	0%	12	07-Nov-17	20-Nov-17
24ABN00745C80	Demolition of temporary office	0%	10	21-Nov-17	01-Dec-17
Civil Works					
Finishing Works (Internal and External)					
24ABN02230B10	Ceiling Finishes at 1st Floor (Suspended Board) after E&M	0%	27	24-Aug-17	23-Sep-17
24ABN02230B50	Installation of Roller Shutter at Ground Floor	0%	30	11-Sep-17	17-Oct-17



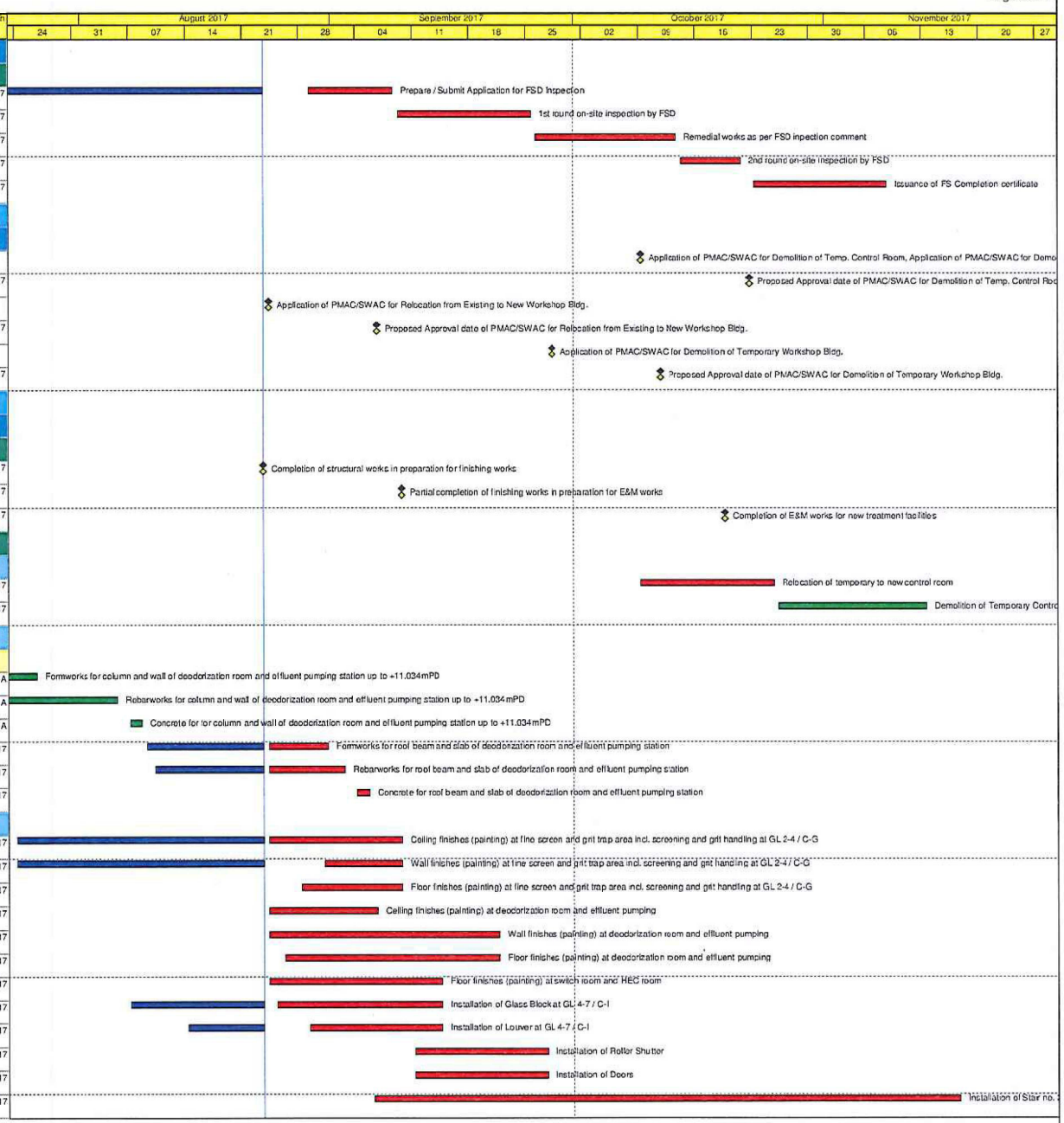
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ABN02230B60	Installation of Doors, Windows and Louver at Ground Floor	0%	30	29-Aug-17	03-Oct-17
24ABN02230B70	Installation of Doors, Windows and Louver at 1st Floor	0%	30	27-Sep-17	03-Nov-17
24ABN02230B90	Installation of railing at stairs	0%	30	24-Aug-17	27-Sep-17
24ABN02240A40	Installation of Irrigation System and Green Roof	0%	100	05-Jun-17 A	02-Dec-17
Electrical and Mechanical Works					
Material / Equipment Delivery on Site					
24ABN02030	Delivery of emergency generator set	0%	0		23-Aug-17
24ABN02040	Delivery of lifting appliance	0%	0		23-Aug-17
Electrical Works					
24ABN04333	Installation of MCB, MCCB and power distribution board	0%	30	11-Apr-17 A	26-Aug-17
24ABN04334	Installation of lighting fittings	100%	50	11-Apr-17 A	23-Sep-17
24ABN04335	Installation of lighting switch, power switch, fuse switch, power socket & electrical accessories	0%	45	11-Apr-17 A	26-Sep-17
24ABN04336	Cable laying for electrical services	0%	44	09-Jan-17 A	31-Aug-17
24ABN04337	Megger test for electrical services	0%	24	01-Aug-17 A	31-Aug-17
24ABN04338	Cable termination for electrical services	0%	24	01-Sep-17	28-Sep-17
24ABN04339	Installation of generator set	0%	30	24-Aug-17	27-Sep-17
24ABN04341	Installation of exhaust air ductwork for generator set	0%	21	11-May-17 A	31-Aug-17
24ABN04342	Installation of switchboard for generator set	0%	14	24-Aug-17	08-Sep-17
24ABN04344	Cable laying for emergency generator set	0%	10	09-Sep-17	20-Sep-17
24ABN04345	Megger test in cables for generator switchboard	0%	7	21-Sep-17	28-Sep-17
24ABN04346	Cable termination for generator switchboard	0%	10	29-Sep-17	12-Oct-17
24ABN04347	Installation of UPS	0%	0	24-Aug-17	24-Aug-17
24ABN04348	Cable laying for UPS sytem	0%	10	17-Jul-17 A	24-Aug-17
24ABN04349	Megger test in cables for UPS system	0%	3	25-Aug-17	28-Aug-17
24ABN04350	Cable termination for UPS system	0%	3	29-Aug-17	31-Aug-17
HVAC System (Deodorization / Air Conditioning / Ventilation)					
24ABN4420	Installation of split type A/C unit (at O&M library)	0%	14	24-Aug-17	08-Sep-17
24ABN4430	Installation of split type A/C unit (at server room)	0%	14	09-Sep-17	25-Sep-17
24ABN4440	Installation of split type A/C unit (at general office)	0%	32	09-Sep-17	18-Oct-17
24ABN4450	Installation of split type A/C unit (at electronic store room)	0%	24	19-Sep-17	18-Oct-17
24ABN4460	Installation of split type A/C unit (at plant manager room)	0%	14	30-Sep-17	18-Oct-17
24ABN4470	Installation of split type A/C unit (at control room)	0%	24	04-Oct-17	02-Nov-17
24ABN4480	Installation of split type A/C unit (at meeting room)	0%	24	04-Oct-17	02-Nov-17
Control and Monitoring Services incl. Instrumentation					
24ABN4840	Cable termination for monitoring and control system	0%	9	20-May-17 A	31-Aug-17
24ABN4850	DCS panel fabrication	0%	25	03-Jul-17 A	31-Aug-17
24ABN4860	PLC programming and SCADA editing	0%	20	01-Sep-17	23-Sep-17
24ABN4870	Migration of existing DCS system to newly installed DCS system	0%	20	13-Sep-17	07-Oct-17
24ABN4880	DCS interface with contract DC/2009/10	0%	30	01-Sep-17	07-Oct-17
Fire Protection / Detection System					
24ABN04543	Installation of fire alarm panel	0%	35	20-May-17 A	26-Aug-17
24ABN04544	Installation of fire detector	0%	46	07-Apr-17 A	26-Aug-17
24ABN04545	Installation of fire alarm bell	0%	30	24-Jul-17 A	26-Aug-17
24ABN04546	Installation of manual fire alarm call point	0%	30	24-Jul-17 A	26-Aug-17
24ABN04547	Installation of fire exit sign	0%	45	24-Jul-17 A	13-Sep-17
24ABN04548	Installation of fire extinguisher	0%	7	14-Sep-17	21-Sep-17



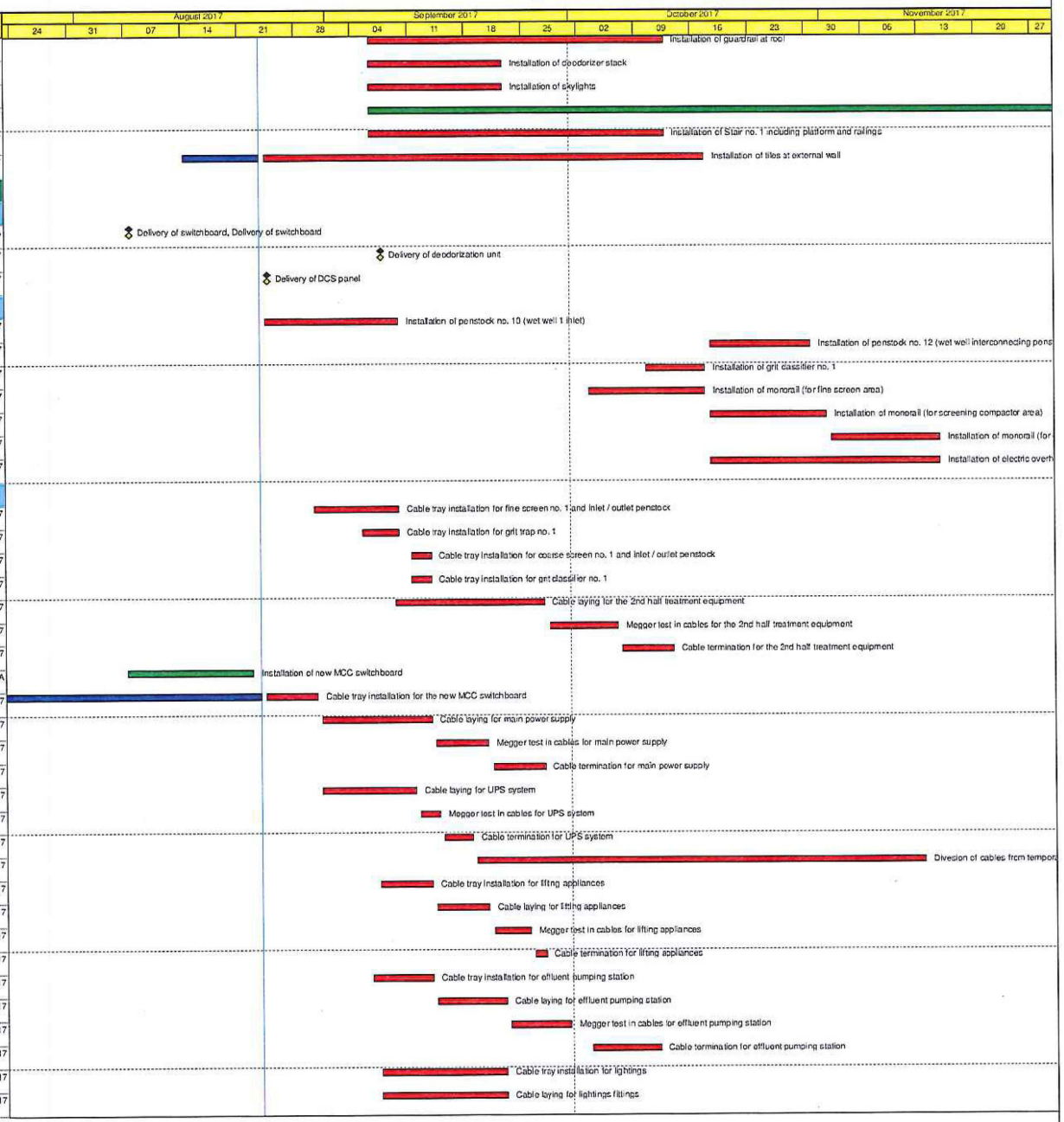
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ABN04549	Installation of water pump for hose reel system	0%	30	24-Jul-17 A	26-Aug-17
24ABN04550	Installation of water pipe for hose reel system	0%	45	24-Jul-17 A	13-Sep-17
24ABN04551	Installation of hose reel	0%	20	24-Aug-17	15-Sep-17
24ABN04552	Installation of water pump for sprinkler system	0%	30	24-Jul-17 A	26-Aug-17
24ABN04553	Installation of water pipe for sprinkler system	0%	45	24-Jul-17 A	13-Sep-17
P&D Services					
24ABN04491	Installation of FRP water tank for plumbing system	100%	14	24-Jul-17 A	08-Aug-17 A
24ABN04492	Installation of water booster pump for plumbing system	100%	14	09-Aug-17 A	24-Aug-17 A
24ABN04493	Installation of hydro pneumatic pressure vessel for plumbing system	100%	14	09-Aug-17 A	24-Aug-17 A
24ABN04494	Installation of water supply pipe for plumbing system (small size pipe)	0%	50	09-Jan-17 A	28-Aug-17
24ABN04495	Installation of water supply pipe for plumbing system at toilet room	0%	20	09-Jan-17 A	28-Aug-17
24ABN04496	Installation of sanitary ware drainage services at toilet room	0%	45	26-Jul-17 A	15-Sep-17
U/G Utility Works					
U/G Utility Works					
24ABN02821A10	U/G odour pipe installation	0%	45	24-Jul-17 A	13-Sep-17
24ABN02821A20	U/G water supply & fire services	0%	45	24-Jul-17 A	13-Sep-17
24ABN02821A50	Installation of external signal and power cable including ducting works and drawpit	0%	45	24-Dec-16 A	12-Sep-17
Roadworks, Landscape and Modification of Fence					
Roadworks					
24ABN02320A05	U/G drainage and sewerage	0%	45	16-Jan-17 A	09-Sep-17
24ABN02320A07	Abandoned and filled of existing drainage and sewerage	0%	14	11-Sep-17	26-Sep-17
24ABN02320A10	Roadworks	0%	60	24-Aug-17	04-Nov-17
Landscaping Works					
24ABN02320A20	Landscaping (Shurbs planting)	0%	80	24-Aug-17*	28-Nov-17
24ABN02320A30	Planting of new tree	0%	60	16-Sep-17	28-Nov-17
24ABN02330A10	Tree Transplantation from off site to site area	0%	60	16-Sep-17*	28-Nov-17
Modification of Fence					
24ABN02325A10	Demolition on some part of existing boundary fence	0%	30	24-Aug-17	27-Sep-17
24ABN02325A20	Construct new boundary fence	0%	30	02-Sep-17	09-Oct-17
24ABN02325A30	Installation of Ceramic Face or natural stone facing on boundary fence	0%	40	10-Oct-17	25-Nov-17
24ABN02325A40	Installation of Synthetic diagonal timber board fencing	0%	40	10-Oct-17	25-Nov-17
Completion of Works for Section 6					
Final Testing and Commissioning					
24ABN03225	Final Testing and Commissioning of Aberdeen PTW	0%	60	08-Oct-17	06-Dec-17
Submission of Manuals					
24ABN4740	Preparation / Submission of draft O&M manuals	0%	90	24-Nov-16 A	31-Aug-17
24ABN4750	Preparation / Submission of modified O&M manuals	0%	90	01-Sep-17	29-Nov-17
24ABN4770	As-Built Drawings Submission / Approval for Aberdeen PTW - Workshop and Administration Building	0%	60	24-Aug-17	22-Oct-17
Trainings for DSD Staff					
24ABN4780	Interim Training of DSD	0%	3	24-Aug-17*	26-Aug-17
24ABN4790	Final Training of DSD	0%	3	17-Sep-17	19-Sep-17
Ap Lei Chau PTW					
Key Dates					
Time of Completion					
24ALC00300	Time for Completion of Section 7	0%	1264	31-Aug-11 A	30-Nov-17
24ALC00302	Claim for Additional Extension of Time - under review	0%	657	31-Mar-15 A	30-Nov-17



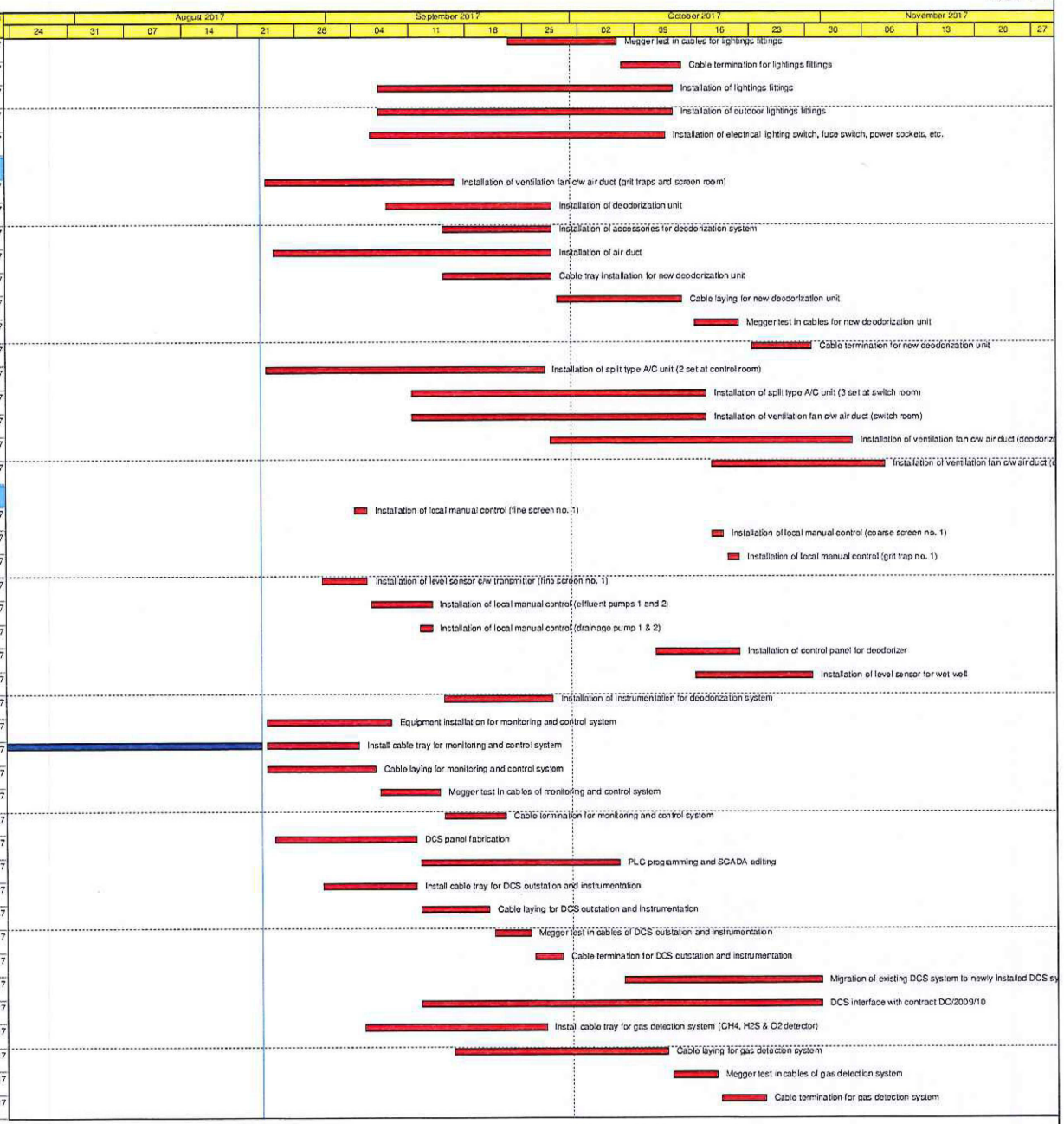
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
Statutory and Utility Applications and Approvals					
Fire Services Department (FSD)					
24ALC00410	Prepare / Submit Application for FSD Inspection	0%	60	24-May-17 A	06-Sep-17
24ALC00420	1st round on-site inspection by FSD	0%	14	09-Sep-17	25-Sep-17
24ALC00421	Remedial works as per FSD inpection comment	0%	14	26-Sep-17	13-Oct-17
24ALC00422	2nd round on-site inspection by FSD	0%	7	14-Oct-17	21-Oct-17
24ALC00423	Issuance of FS Completion certificate	0%	14	23-Oct-17	08-Nov-17
Interface and Liaison					
Interface with ST2/DSD					
24MALC00130	Application of PMAC/SWAC for Demolition of Temp. Control Room	0%	0	09-Oct-17	
24MALC00140	Proposed Approval date of PMAC/SWAC for Demolition of Temp. Control Room	0%	0		22-Oct-17
24MALC00150	Application of PMAC/SWAC for Relocation from Existing to New Workshop Bldg.	0%	0	24-Aug-17	
24MALC00160	Proposed Approval date of PMAC/SWAC for Relocation from Existing to New Workshop Bldg.	0%	0		06-Sep-17
24MALC00170	Application of PMAC/SWAC for Demolition of Temporary Workshop Bldg.	0%	0	28-Sep-17	
24MALC00180	Proposed Approval date of PMAC/SWAC for Demolition of Temporary Workshop Bldg.	0%	0		11-Oct-17
Works for Section 7					
Stage 2 of ALC Upgrade (Completion of Remaining Works)					
Interface between Civil / ABWF / E&M Works					
24MALC00250	Completion of structural works in preparation for finishing works	0%	0		23-Aug-17
24MALC00260	Partial completion of finishing works in preparation for E&M works	0%	0		09-Sep-17
24MALC00270	Completion of E&M works for new treatment facilities	0%	0		19-Oct-17
Civil Works					
Relocation of Temp. Control Room to New Control Room (Incl. Demolition)					
24ALC00810A05	Relocation of temporary to new control room	0%	15	09-Oct-17	25-Oct-17
24ALC00810A10	Demolition of Temporary Control Room	0%	15	26-Oct-17	13-Nov-17
RC Structural Works					
Deodorization Room and Effluent Pumping Station (GL 4-7)					
24ALC00830A10	Formworks for column and wall of deodorization room and effluent pumping station up to +11.034mPD	100%	18	01-Jun-17 A	26-Jul-17 A
24ALC00830A20	Rebarworks for column and wall of deodorization room and effluent pumping station up to +11.034mPD	100%	18	07-Jun-17 A	05-Aug-17 A
24ALC00830A30	Concrete for for column and wall of deodorization room and effluent pumping station up to +11.034mPD	100%	2	07-Aug-17 A	08-Aug-17 A
24ALC00830A70	Formworks for roof beam and slab of deodorization room and effluent pumping station	0%	15	09-Aug-17 A	31-Aug-17
24ALC00830A80	Rebarworks for roof beam and slab of deodorization room and effluent pumping station	0%	15	10-Aug-17 A	02-Sep-17
24ALC00830A90	Concrete for roof beam and slab of deodorization room and effluent pumping station	0%	2	04-Sep-17	05-Sep-17
Finishing Works (Internal and External)					
24ALC00800A10	Ceiling finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	15	24-Jul-17 A	09-Sep-17
24ALC00800A20	Wall finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	18	24-Jul-17 A	09-Sep-17
24ALC00800A30	Floor finishes (painting) at fine screen and grit trap area incl. screening and grit handling at GL 2-4 / C-G	0%	12	28-Aug-17	09-Sep-17
24ALC00840A10	Ceiling finishes (painting) at deodorization room and effluent pumping	0%	12	24-Aug-17	05-Sep-17
24ALC00840A20	Wall finishes (painting) at deodorization room and effluent pumping	0%	25	24-Aug-17	21-Sep-17
24ALC00840A30	Floor finishes (painting) at deodorization room and effluent pumping	0%	23	26-Aug-17	21-Sep-17
24ALC00840A60	Floor finishes (painting) at switch room and HEC room	0%	19	24-Aug-17	14-Sep-17
24ALC00840A70	Installation of Glass Block at GL 4-7 / C-I	0%	18	07-Aug-17 A	14-Sep-17
24ALC00840A80	Installation of Louver at GL 4-7 / C-I	0%	15	14-Aug-17 A	14-Sep-17
24ALC00840A90	Installation of Roller Shutter	0%	15	11-Sep-17	27-Sep-17
24ALC00840B10	Installation of Doors	0%	15	11-Sep-17	27-Sep-17
24ALC00840B20	Installation of Stair no. 2, 3, 4, and 5 including platform and railings	0%	60	06-Sep-17	17-Nov-17



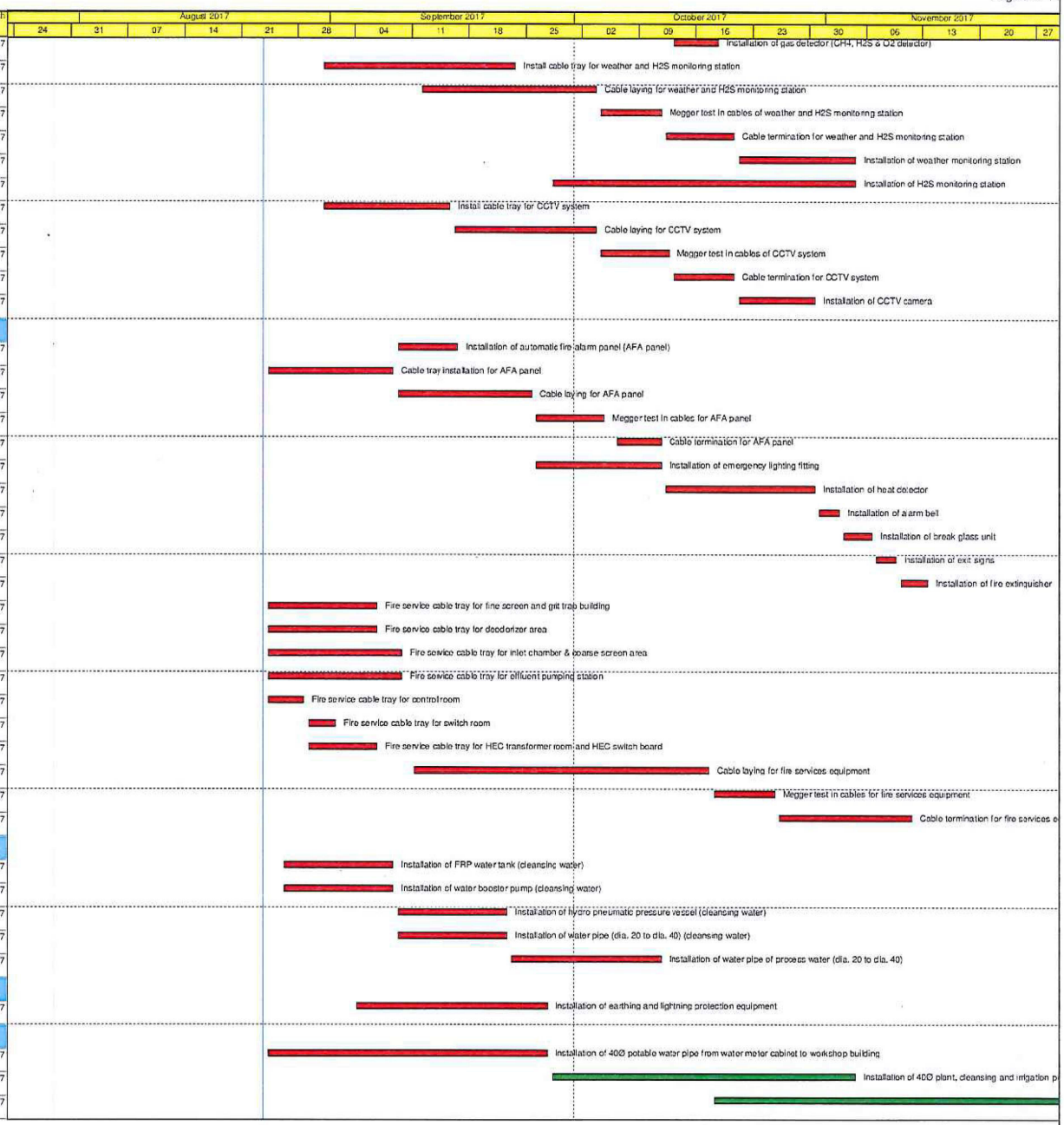
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ALC00850A10	Installation of guardrail at roof	0%	30	06-Sep-17	12-Oct-17
24ALC00850A20	Installation of deodorizer stack	0%	15	06-Sep-17	22-Sep-17
24ALC00850A30	Installation of skylights	0%	15	06-Sep-17	22-Sep-17
24ALC00850A40	Installation of Irrigation System and Green Roof	0%	79	06-Sep-17*	09-Dec-17
24ALC00850A50	Installation of Stair no. 1 including platform and railings	0%	30	06-Sep-17	12-Oct-17
24ALC00850A60	Installation of tiles at external wall	0%	45	14-Aug-17 A	17-Oct-17
Electrical and Mechanical Works					
Material / Equipment Delivery on Site					
24ALC03996	Delivery of switchboard	100%	0		07-Aug-17 A
24ALC03997	Delivery of deodorization unit	0%	0		07-Sep-17
24ALC03998	Delivery of DCS panel	0%	0		24-Aug-17
Mechanical Works					
24ALC04020	Installation of penstock no. 10 (wet well 1 inlet)	0%	15	24-Aug-17	09-Sep-17
24ALC04030	Installation of penstock no. 12 (wet well interconnecting penstock)	0%	10	18-Oct-17	30-Oct-17
24ALC04070	Installation of grit classifier no. 1	0%	7	10-Oct-17	17-Oct-17
24ALC04090	Installation of monorail (for fine screen area)	0%	12	03-Oct-17	17-Oct-17
24ALC04100	Installation of monorail (for screening compactor area)	0%	12	18-Oct-17	01-Nov-17
24ALC04110	Installation of monorail (for deodorizer room)	0%	12	02-Nov-17	15-Nov-17
24ALC04120	Installation of electric overhead travelling crane (for effluent pumping station)	0%	24	18-Oct-17	15-Nov-17
Electrical Works					
24ALC04180	Cable tray installation for fine screen no. 1 and inlet / outlet penstock	0%	10	30-Aug-17	09-Sep-17
24ALC04190	Cable tray installation for grit trap no. 1	0%	5	05-Sep-17	09-Sep-17
24ALC04200	Cable tray installation for coarse screen no. 1 and inlet / outlet penstock	0%	3	11-Sep-17	13-Sep-17
24ALC04210	Cable tray installation for grit classifier no. 1	0%	3	11-Sep-17	13-Sep-17
24ALC04220	Cable laying for the 2nd half treatment equipment	0%	16	09-Sep-17	27-Sep-17
24ALC04230	Megger test in cables for the 2nd half treatment equipment	0%	6	28-Sep-17	06-Oct-17
24ALC04240	Cable termination for the 2nd half treatment equipment	0%	6	07-Oct-17	13-Oct-17
24ALC04250	Installation of new MCC switchboard	100%	21	07-Aug-17 A	22-Aug-17 A
24ALC04260	Cable tray installation for the new MCC switchboard	0%	10	13-Jan-17 A	30-Aug-17
24ALC04270	Cable laying for main power supply	0%	12	31-Aug-17	13-Sep-17
24ALC04280	Megger test in cables for main power supply	0%	6	14-Sep-17	20-Sep-17
24ALC04290	Cable termination for main power supply	0%	6	21-Sep-17	27-Sep-17
24ALC04300	Cable laying for UPS system	0%	10	31-Aug-17	11-Sep-17
24ALC04310	Megger test in cables for UPS system	0%	3	12-Sep-17	14-Sep-17
24ALC04320	Cable termination for UPS system	0%	3	15-Sep-17	18-Sep-17
24ALC04330	Diversion of cables from temporary switchboard to new MCC room / switchboard c/w megger test	0%	45	19-Sep-17	13-Nov-17
24ALC04340	Cable tray installation for lifting appliances	0%	6	07-Sep-17	13-Sep-17
24ALC04350	Cable laying for lifting appliances	0%	6	14-Sep-17	20-Sep-17
24ALC04360	Megger test in cables for lifting appliances	0%	4	21-Sep-17	25-Sep-17
24ALC04370	Cable termination for lifting appliances	0%	2	26-Sep-17	27-Sep-17
24ALC04380	Cable tray installation for effluent pumping station	0%	7	06-Sep-17	13-Sep-17
24ALC04390	Cable laying for effluent pumping station	0%	8	14-Sep-17	22-Sep-17
24ALC04400	Megger test in cables for effluent pumping station	0%	7	23-Sep-17	30-Sep-17
24ALC04410	Cable termination for effluent pumping station	0%	7	03-Oct-17	11-Oct-17
24ALC04420	Cable tray installation for lightings	0%	14	07-Sep-17	22-Sep-17
24ALC04430	Cable laying for lightings fittings	0%	14	07-Sep-17	22-Sep-17



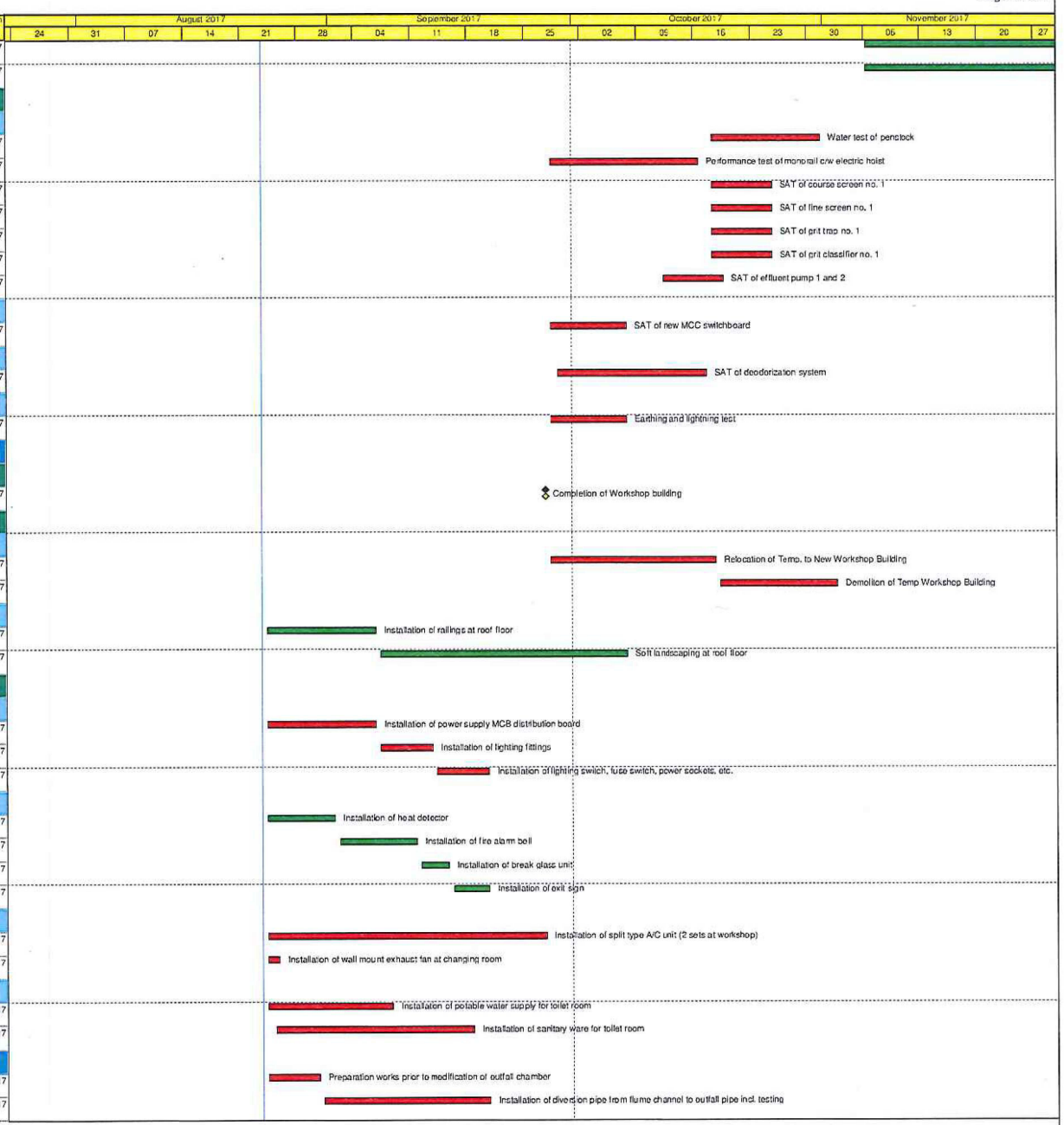
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ALC04440	Megger test in cables for lightings fittings	0%	10	23-Sep-17	06-Oct-17
24ALC04450	Cable termination for lightings fittings	0%	7	07-Oct-17	14-Oct-17
24ALC04460	Installation of lightings fittings	0%	30	07-Sep-17	18-Oct-17
24ALC04470	Installation of outdoor lightings fittings	0%	30	07-Sep-17	18-Oct-17
24ALC04480	Installation of electrical lighting switch, fuse switch, power sockets, etc.	0%	30	06-Sep-17	12-Oct-17
HVAC System (Deodorization / Air Conditioning / Ventilation)					
24ALC04490	Installation of ventilation fan c/w air duct (grit traps and screen room)	0%	21	24-Aug-17	15-Sep-17
24ALC04500	Installation of deodorization unit	0%	18	08-Sep-17	28-Sep-17
24ALC04510	Installation of accessories for deodorization system	0%	12	15-Sep-17	28-Sep-17
24ALC04520	Installation of air duct	0%	30	25-Aug-17	28-Sep-17
24ALC04530	Cable tray installation for new deodorization unit	0%	12	15-Sep-17	28-Sep-17
24ALC04540	Cable laying for new deodorization unit	0%	12	29-Sep-17	14-Oct-17
24ALC04550	Megger test in cables for new deodorization unit	0%	6	16-Oct-17	21-Oct-17
24ALC04560	Cable termination for new deodorization unit	0%	6	23-Oct-17	30-Oct-17
24ALC04570	Installation of split type A/C unit (2 set at control room)	0%	30	24-Aug-17	27-Sep-17
24ALC04580	Installation of split type A/C unit (3 set at switch room)	0%	30	11-Sep-17	17-Oct-17
24ALC04590	Installation of ventilation fan c/w air duct (switch room)	0%	30	11-Sep-17	17-Oct-17
24ALC04600	Installation of ventilation fan c/w air duct (deodorizer room)	0%	30	28-Sep-17	04-Nov-17
24ALC04610	Installation of ventilation fan c/w air duct (effluent pumping station)	0%	18	18-Oct-17	08-Nov-17
Control and Monitoring Services Incl. Instrumentation					
24ALC04620	Installation of local manual control (fine screen no. 1)	0%	2	04-Sep-17	05-Sep-17
24ALC04630	Installation of local manual control (coarse screen no. 1)	0%	2	18-Oct-17	19-Oct-17
24ALC04640	Installation of local manual control (grit trap no. 1)	0%	2	20-Oct-17	21-Oct-17
24ALC04650	Installation of level sensor c/w transmitter (fine screen no. 1)	0%	5	31-Aug-17	05-Sep-17
24ALC04660	Installation of local manual control (effluent pumps 1 and 2)	0%	7	06-Sep-17	13-Sep-17
24ALC04670	Installation of local manual control (drainage pump 1 & 2)	0%	2	12-Sep-17	13-Sep-17
24ALC04680	Installation of control panel for deodorizer	0%	10	11-Oct-17	21-Oct-17
24ALC04690	Installation of level sensor for wet well	0%	12	16-Oct-17	30-Oct-17
24ALC04700	Installation of instrumentation for deodorization system	0%	12	15-Sep-17	28-Sep-17
24ALC04710	Equipment installation for monitoring and control system	0%	14	24-Aug-17	08-Sep-17
24ALC04720	Install cable tray for monitoring and control system	0%	21	13-Jan-17 A	04-Sep-17
24ALC04730	Cable laying for monitoring and control system	0%	12	24-Aug-17	06-Sep-17
24ALC04740	Megger test in cables of monitoring and contro system	0%	7	07-Sep-17	14-Sep-17
24ALC04750	Cable termination for monitoring and control system	0%	7	15-Sep-17	22-Sep-17
24ALC04760	DCS panel fabrication	0%	15	25-Aug-17	11-Sep-17
24ALC04780	PLC programming and SCADA editing	0%	20	12-Sep-17	06-Oct-17
24ALC04790	Install cable tray for DCS outstation and instrumentation	0%	10	31-Aug-17	11-Sep-17
24ALC04800	Cable laying for DCS outstation and instrumentation	0%	8	12-Sep-17	20-Sep-17
24ALC04810	Megger test in cables of DCS outstation and instrumentation	0%	4	21-Sep-17	25-Sep-17
24ALC04820	Cable termination for DCS outstation and instrumentation	0%	4	26-Sep-17	29-Sep-17
24ALC04830	Migration of existing DCS system to newly installed DCS system	0%	20	07-Oct-17	31-Oct-17
24ALC04840	DCS interface with contract DC/2009/10	0%	40	12-Sep-17	31-Oct-17
24ALC04850	Install cable tray for gas detection system (CH4, H2S & O2 detector)	0%	20	05-Sep-17	27-Sep-17
24ALC04860	Cable laying for gas detection system	0%	21	16-Sep-17	12-Oct-17
24ALC04870	Megger test in cables of gas detection system	0%	5	13-Oct-17	18-Oct-17
24ALC04880	Cable termination for gas detection system	0%	5	19-Oct-17	24-Oct-17



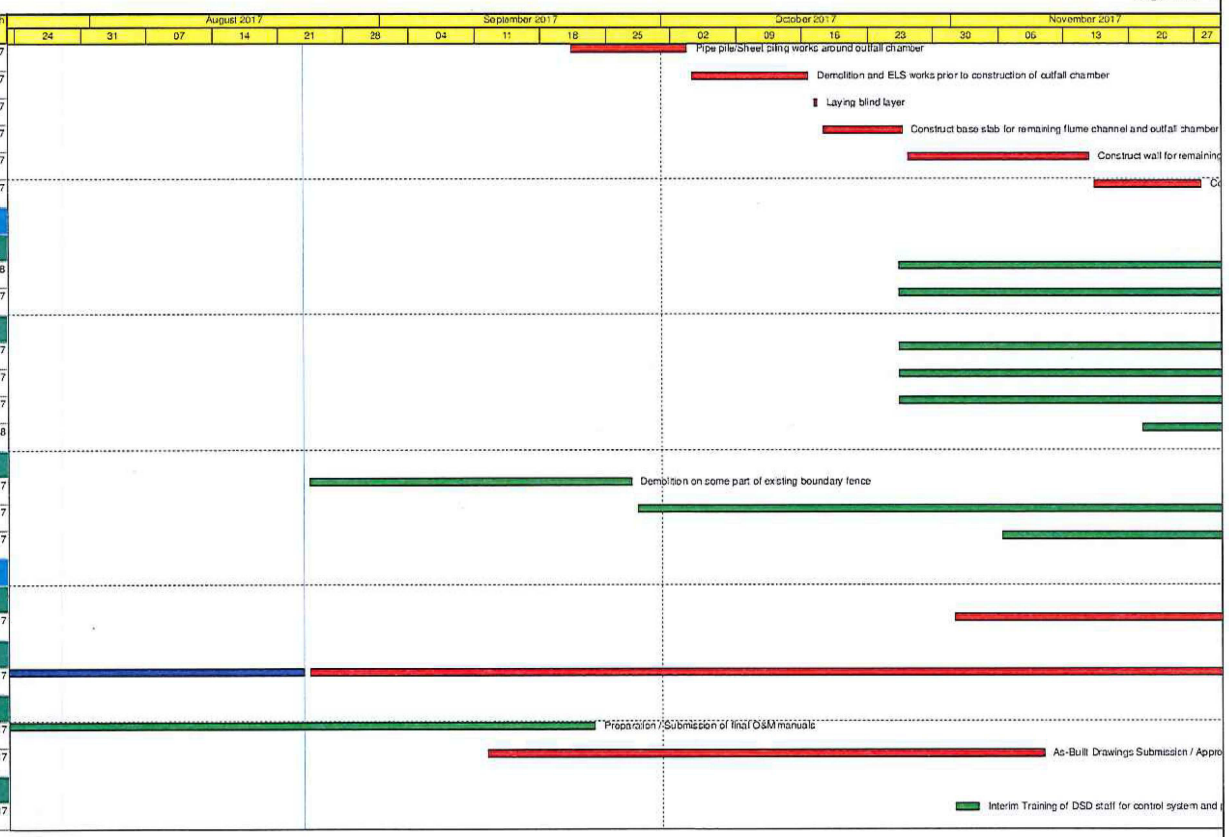
Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ALC04890	Installation of gas detector (CH4, H2S & O2 detector)	0%	5	13-Oct-17	18-Oct-17
24ALC04900	Install cable tray for weather and H2S monitoring station	0%	21	31-Aug-17	23-Sep-17
24ALC04910	Cable laying for weather and H2S monitoring station	0%	18	12-Sep-17	03-Oct-17
24ALC04920	Megger test in cables of weather and H2S monitoring station	0%	6	04-Oct-17	11-Oct-17
24ALC04930	Cable termination for weather and H2S monitoring station	0%	8	12-Oct-17	20-Oct-17
24ALC04940	Installation of weather monitoring station	0%	12	21-Oct-17	04-Nov-17
24ALC04950	Installation of H2S monitoring station	0%	30	26-Sep-17	04-Nov-17
24ALC04960	Install cable tray for CCTV system	0%	14	31-Aug-17	15-Sep-17
24ALC04970	Cable laying for CCTV system	0%	14	16-Sep-17	03-Oct-17
24ALC04980	Megger test in cables of CCTV system	0%	7	04-Oct-17	12-Oct-17
24ALC04990	Cable termination for CCTV system	0%	7	13-Oct-17	20-Oct-17
24ALC05000	Installation of CCTV camera	0%	7	21-Oct-17	30-Oct-17
Fire Protection / Detection System					
24ALC05010	Installation of automatic fire alarm panel (AFA panel)	0%	7	09-Sep-17	16-Sep-17
24ALC05020	Cable tray installation for AFA panel	0%	14	24-Aug-17	08-Sep-17
24ALC05030	Cable laying for AFA panel	0%	14	09-Sep-17	25-Sep-17
24ALC05040	Megger test in cables for AFA panel	0%	7	26-Sep-17	04-Oct-17
24ALC05050	Cable termination for AFA panel	0%	5	06-Oct-17	11-Oct-17
24ALC05060	Installation of emergency lighting fitting	0%	12	26-Sep-17	11-Oct-17
24ALC05070	Installation of heat detector	0%	15	12-Oct-17	30-Oct-17
24ALC05080	Installation of alarm bell	0%	3	31-Oct-17	02-Nov-17
24ALC05090	Installation of break glass unit	0%	3	03-Nov-17	06-Nov-17
24ALC05100	Installation of exit signs	0%	3	07-Nov-17	09-Nov-17
24ALC05110	Installation of fire extinguisher	0%	3	10-Nov-17	13-Nov-17
24ALC05120	Fire service cable tray for fine screen and grit trap building	0%	12	24-Aug-17	06-Sep-17
24ALC05130	Fire service cable tray for deodorizer area	0%	12	24-Aug-17	06-Sep-17
24ALC05140	Fire service cable tray for inlet chamber & coarse screen area	0%	15	24-Aug-17	09-Sep-17
24ALC05150	Fire service cable tray for effluent pumping station	0%	15	24-Aug-17	09-Sep-17
24ALC05160	Fire service cable tray for control room	0%	4	24-Aug-17	28-Aug-17
24ALC05170	Fire service cable tray for switch room	0%	4	29-Aug-17	01-Sep-17
24ALC05180	Fire service cable tray for HEC transformer room and HEC switch board	0%	8	29-Aug-17	06-Sep-17
24ALC05190	Cable laying for fire services equipment	0%	30	11-Sep-17	17-Oct-17
24ALC05200	Megger test in cables for fire services equipment	0%	7	18-Oct-17	25-Oct-17
24ALC05210	Cable termination for fire services equipment	0%	14	26-Oct-17	11-Nov-17
Plumbing Services					
24ALC05220	Installation of FRP water tank (cleansing water)	0%	12	26-Aug-17	08-Sep-17
24ALC05230	Installation of water booster pump (cleansing water)	0%	12	26-Aug-17	08-Sep-17
24ALC05240	Installation of hydro pneumatic pressure vessel (cleansing water)	0%	12	09-Sep-17	22-Sep-17
24ALC05250	Installation of water pipe (dia. 20 to dia. 40) (cleansing water)	0%	12	09-Sep-17	22-Sep-17
24ALC05260	Installation of water pipe of process water (dia. 20 to dia. 40)	0%	14	23-Sep-17	11-Oct-17
Earthing and Lightning System					
24ALC05270	Installation of earthing and lightning protection equipment	0%	21	04-Sep-17	27-Sep-17
U/G Utility Works					
24ALC00851A10	Installation of 40Ø potable water pipe from water meter cabinet to workshop building	0%	30	24-Aug-17	27-Sep-17
24ALC00851A20	Installation of 40Ø plant, cleansing and irrigation pipe from water meter cabinet to deodorization room	0%	30	28-Sep-17	04-Nov-17
24ALC00851A30	Installation of drainage pipe with size of 100, 150, 225 and 250Ø from new buildings to inlet chamber	0%	45	18-Oct-17	09-Dec-17



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ALC00851A40	Installation of foul manhole for drainage system	0%	30	06-Nov-17	09-Dec-17
24ALC00851A50	Installation of sewer and stormwater pipe (150, 225 and 300D)	0%	45	06-Nov-17	29-Dec-17
Preliminary Testing and Commissioning					
Mechanical Works					
24ALC05280	Water test of penstock	0%	11	18-Oct-17	31-Oct-17
24ALC05290	Performance test of monorail c/w electric hoist	0%	14	28-Sep-17	16-Oct-17
24ALC05300	SAT of course screen no. 1	0%	7	18-Oct-17	25-Oct-17
24ALC05310	SAT of fine screen no. 1	0%	7	18-Oct-17	25-Oct-17
24ALC05320	SAT of grit trap no. 1	0%	7	18-Oct-17	25-Oct-17
24ALC05330	SAT of grit classifier no. 1	0%	7	18-Oct-17	25-Oct-17
24ALC05340	SAT of effluent pump 1 and 2	0%	7	12-Oct-17	19-Oct-17
Electrical Works					
24ALC05350	SAT of new MCC switchboard	0%	7	28-Sep-17	07-Oct-17
HVAC System (Deodorization / Air Conditioning / Ventilation)					
24ALC05360	SAT of deodorization system	0%	14	29-Sep-17	17-Oct-17
Earthing and Lightning System					
24ALC05370	Earthing and lightning test	0%	7	28-Sep-17	07-Oct-17
Workshop Building					
Interface between Civil / ABWF / E&M Works					
24MALC00300	Completion of Workshop building	0%	0		27-Sep-17
Civil Works					
Relocation and Demolition Works					
24ALC00300A10	Relocation of Temp. to New Workshop Building	0%	16	28-Sep-17	18-Oct-17
24ALC00920	Demolition of Temp Workshop Building	0%	12	19-Oct-17	02-Nov-17
Finishing Works (Internal and External)					
24ALC00910A10	Installation of railings at roof floor	0%	12	24-Aug-17	06-Sep-17
24ALC00910A20	Soft landscaping at roof floor	0%	25	07-Sep-17*	07-Oct-17
Electrical and Mechanical Works					
Electrical Works					
24ALC05400	Installation of power supply MCB distribution board	0%	12	24-Aug-17	06-Sep-17
24ALC05410	Installation of lighting fittings	0%	6	07-Sep-17	13-Sep-17
24ALC05420	Installation of lighting switch, fuse switch, power sockets, etc.	0%	6	14-Sep-17	20-Sep-17
Fire Protection / Detection System					
24ALC05450	Installation of heat detector	0%	8	24-Aug-17	01-Sep-17
24ALC05460	Installation of fire alarm bell	0%	8	02-Sep-17	11-Sep-17
24ALC05470	Installation of break glass unit	0%	4	12-Sep-17	15-Sep-17
24ALC05480	Installation of exit sign	0%	4	16-Sep-17	20-Sep-17
HVAC System (Deodorization / Air Conditioning / Ventilation)					
24ALC05430	Installation of split type A/C unit (2 sets at workshop)	0%	30	24-Aug-17	27-Sep-17
24ALC05440	Installation of wall mount exhaust fan at changing room	0%	2	24-Aug-17	25-Aug-17
Plumbing System					
24ALC05490	Installation of potable water supply for toilet room	0%	14	24-Aug-17	08-Sep-17
24ALC05500	Installation of sanitary ware for toilet room	0%	21	25-Aug-17	18-Sep-17
Modification of Outfall Chamber					
24ALC00901	Preparation works prior to modification of outfall chamber	0%	6	24-Aug-17	30-Aug-17
24ALC00902	Installation of diversion pipe from flume channel to outfall pipe incl. testing	0%	18	31-Aug-17	20-Sep-17



Activity ID	Activity Name	% Comp	Original Duration	Early Start	Early Finish
24ALC00904	Pipe pile/Sheet piling works around outfall chamber	0%	10	21-Sep-17	03-Oct-17
24ALC00905	Demolition and ELS works prior to construction of outfall chamber	0%	10	04-Oct-17	15-Oct-17
24ALC00910	Laying blind layer	0%	1	17-Oct-17	17-Oct-17
24ALC00911	Construct base slab for remaining flume channel and outfall chamber	0%	8	18-Oct-17	26-Oct-17
24ALC00914	Construct wall for remaining flume channel and outfall chamber	0%	16	27-Oct-17	15-Nov-17
24ALC00918	Construct top slab for remaining flume channel and outfall chamber	0%	10	16-Nov-17	27-Nov-17
Roadworks, Landscaping Works and Modification of Fence					
Roadworks					
24ALC00860A10	Roadworks	0%	57	26-Oct-17	03-Jan-18
24ALC4370	Installation of weight bridge	0%	42	26-Oct-17	14-Dec-17
Landscaping Works					
24ALC00860A20	Tree transplanting from off-site to site area (T001)	0%	30	26-Oct-17*	30-Nov-17
24ALC00860A30	Planting of new trees	0%	52	26-Oct-17*	28-Dec-17
24ALC00860A40	Landscaping (Grasscrete)	0%	35	26-Oct-17	06-Dec-17
24ALC00860A50	Landscaping (Shrubs Planting)	0%	44	21-Nov-17	12-Jan-18
Modification of Fence					
24ALC00930A10	Demolition on some part of existing boundary fence	0%	30	24-Aug-17	27-Sep-17
24ALC00930A20	Construct new boundary fence	0%	60	28-Sep-17	09-Dec-17
24ALC00930A30	Installation of Ceramic Face or natural stone facing on boundary fence	0%	45	06-Nov-17	29-Dec-17
Completion of Works in Section 7					
Final Testing and Commissioning					
24ALC4400	Final Testing and Commissioning of Ap Lei Chau PTW	0%	30	01-Nov-17	30-Nov-17
EoT Claim					
24ALC01781	Claim for Additional Extension of Time - under review	0%	656	01-Apr-15 A	30-Nov-17
Submission of Manuals					
24ALC01810	Preparation / Submission of final O&M manuals	0%	90	04-Jan-16 A	23-Sep-17
24ALC01820	As-Built Drawings Submission / Approval for Ap Lei Chau PTW	0%	60	12-Sep-17	10-Nov-17
Trainings for DSD Staff					
24ALC01830	Interim Training of DSD staff for control system and pumping system	0%	3	01-Nov-17	03-Nov-17



APPENDIX C
MONITORING REQUIREMENTS

APPENDIX C – Monitoring Requirements

Type of Monitoring	Parameter	Frequency	Monitored by	Locations of Measurement
Air Quality	1-hour TSP	3 times / 6-day	DC/2009/24	**CM_CB1a**(1): The Arcade, Cyberport **CM_WF1a**(1): Wah Ming House, Wah Fu Estate **CM_AB1b**(2): Works Site Boundary of Aberdeen PTW
	24-hour TSP	Once / 6-day		
Noise	L_{eq}(30 min.) dB(A) (0700 to 1900 hrs. on weekdays) / L_{eq}(5 min.) dB(A) (During restricted hours)	Once / week	DC/2009/24	M6a(1) (Cyberport PTW): Aegean Terrace M7a(1) (Wah Fu PTW): Wah Ming House M8 (Aberdeen PTW): Wah Lai House M9 (Ap Lei Chau PTW): Mei Chun Court, South Horizons

Remarks:

1: Refer to the monthly report of DC/2007/24, revision to the original monitoring location in EM&A Manual was made and was verified by IEC on 19 November 2009 and subsequently approved by EPD on 27 November 2009.

2: Relocation of the air quality monitoring station was verified by IEC on 15 July 2014; and approved by ER on 22 July 2014 and approved by EPD on 5 December 2014.

APPENDIX D
ACTION AND LIMIT LEVELS

Appendix D Action and Limit Levels

Table D-1 Action and Limit Levels for 1-Hour TSP and 24-Hour TSP

Monitoring Stations	Action Level ($\mu g/m^3$)		Limit Level ($\mu g/m^3$)	
	1-hour	24-hour	1-hour	24-hour
CM_CB1a	280	178	500	260
CM_WF1a	285	185		
CM_AB1b	283	174		

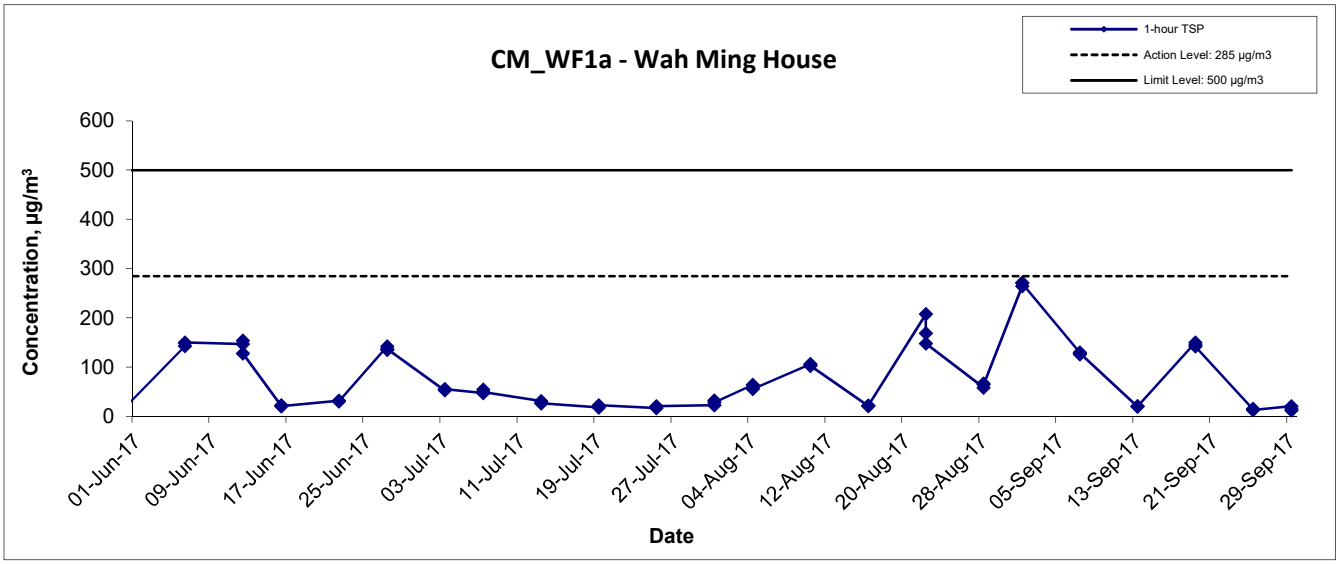
Table D-2 Action and Limit Level for Construction Noise

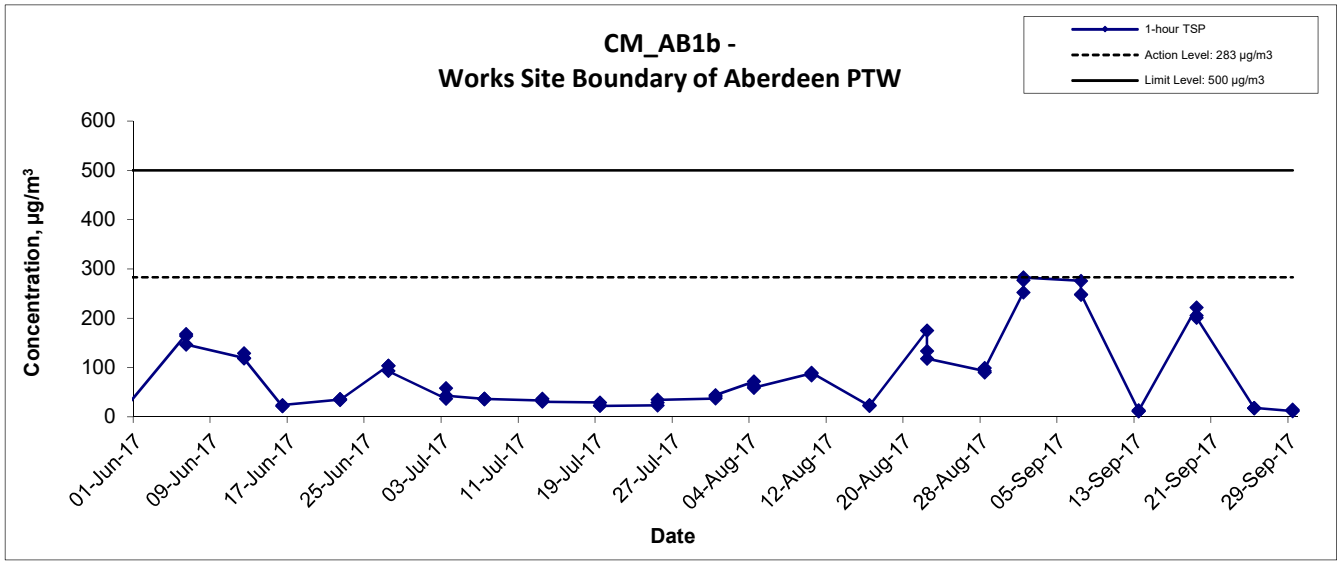
Monitoring Stations	Time Period	Action Level	Limit Level in dB(A)
M6a **M7a** **M8** **M9**	0700-1900 hours on normal weekdays	When one documented complaint is received	75[(1)]

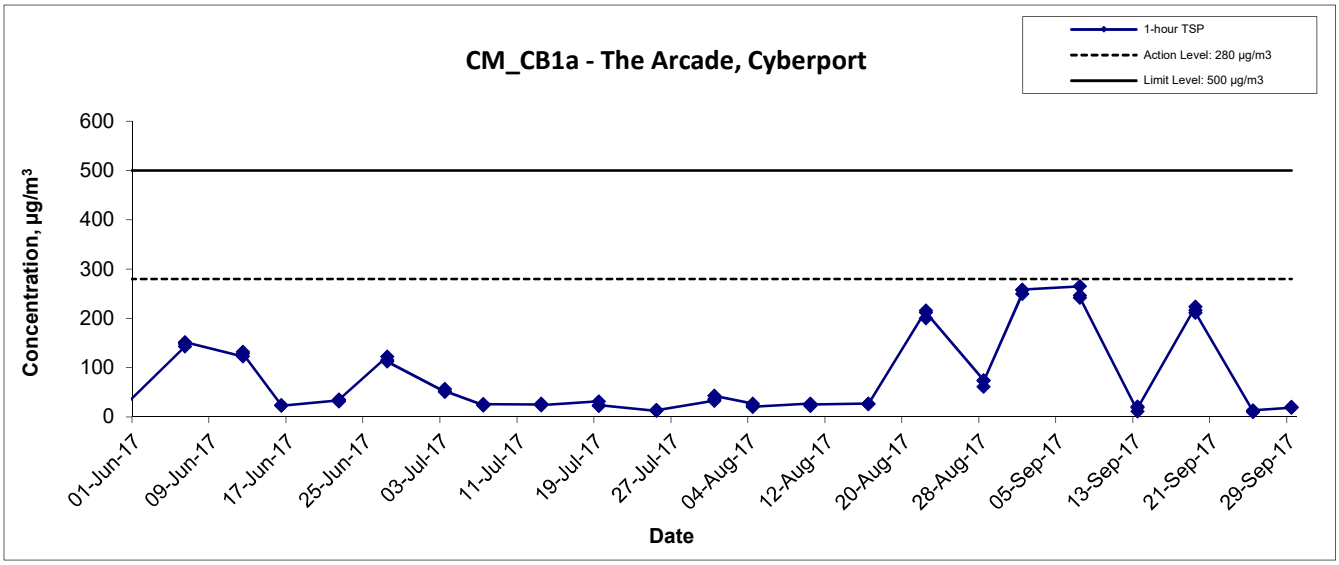
Remark: 1: 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

APPENDIX E
GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS

1-hr TSP Concentration Levels



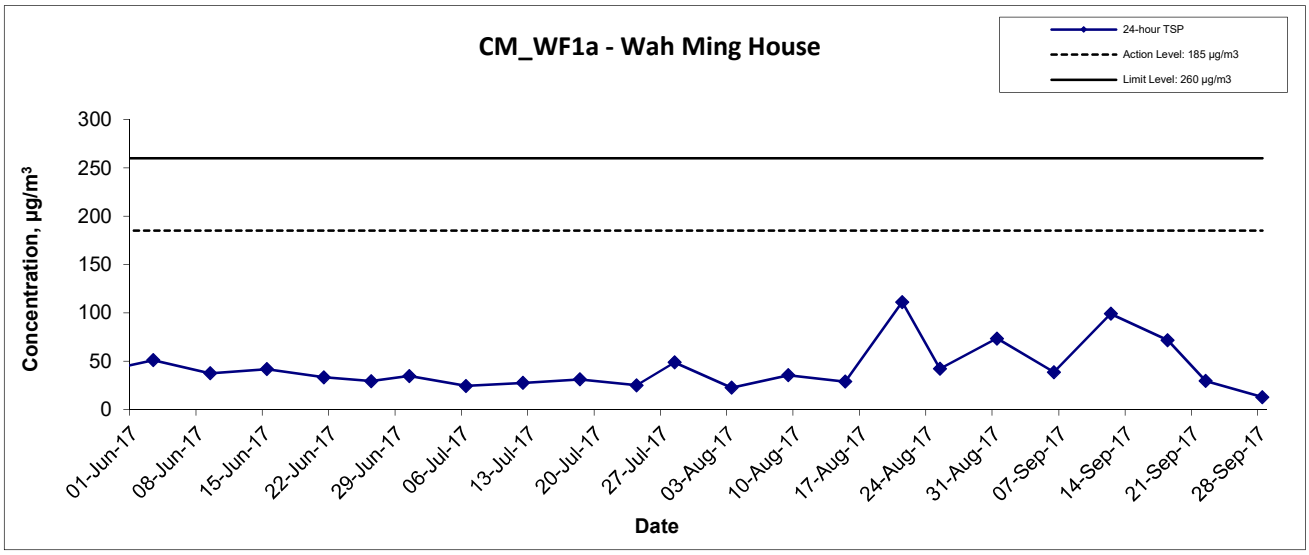


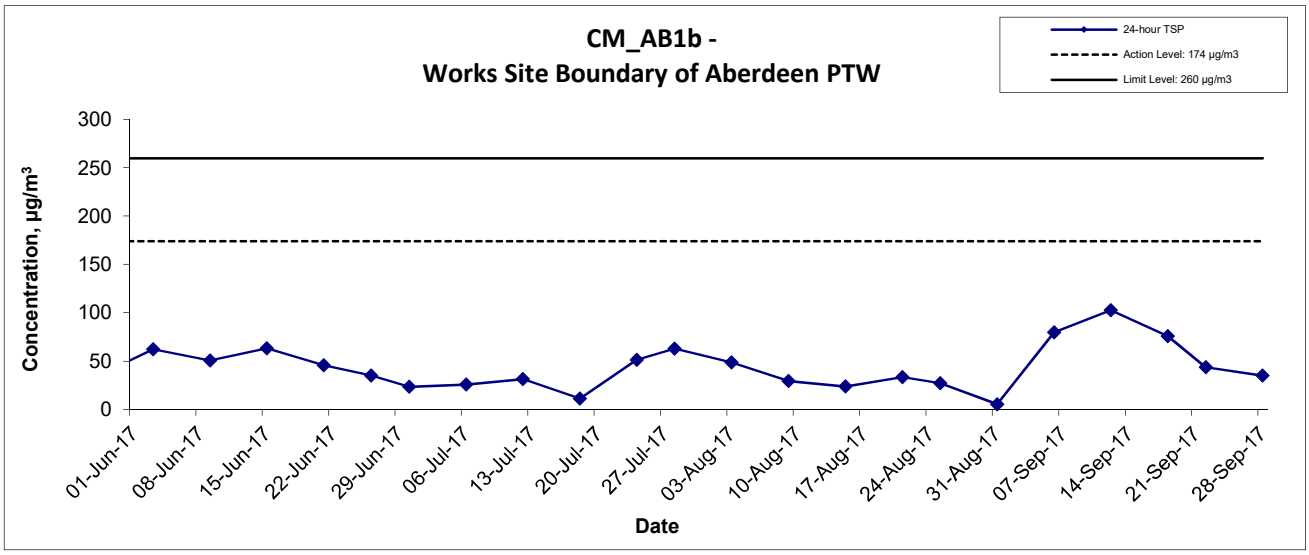


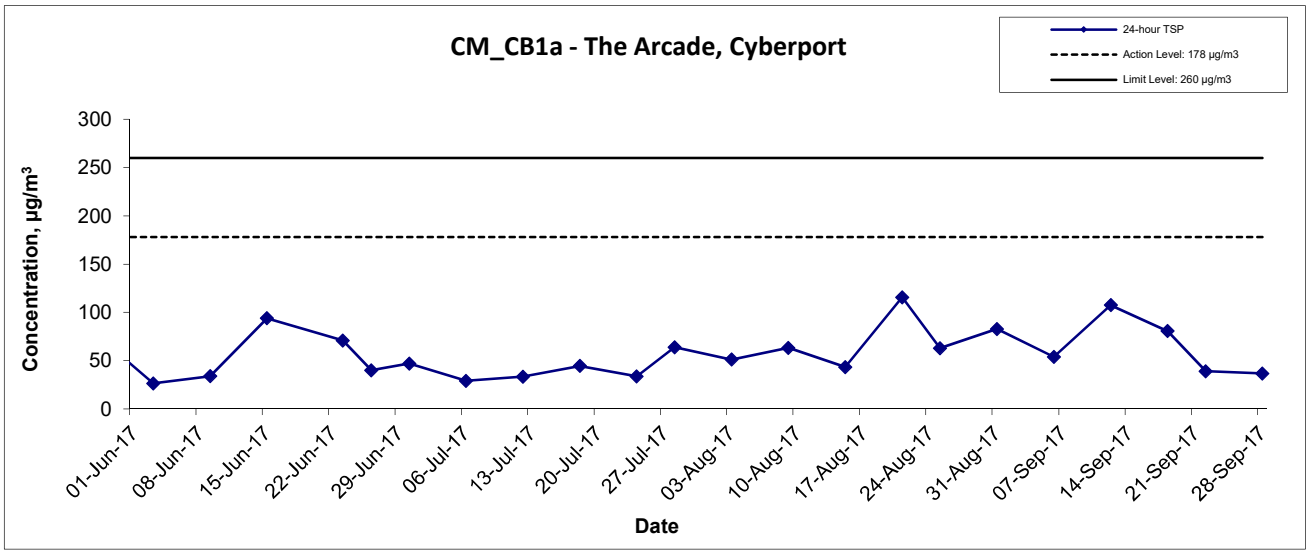
Title	Scale	Project No.
Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 1-hour TSP Monitoring Results	N.T.S	MA11060
	Date: Sep 17	Appendix: E

CINOTECH

24-hr TSP Concentration Levels





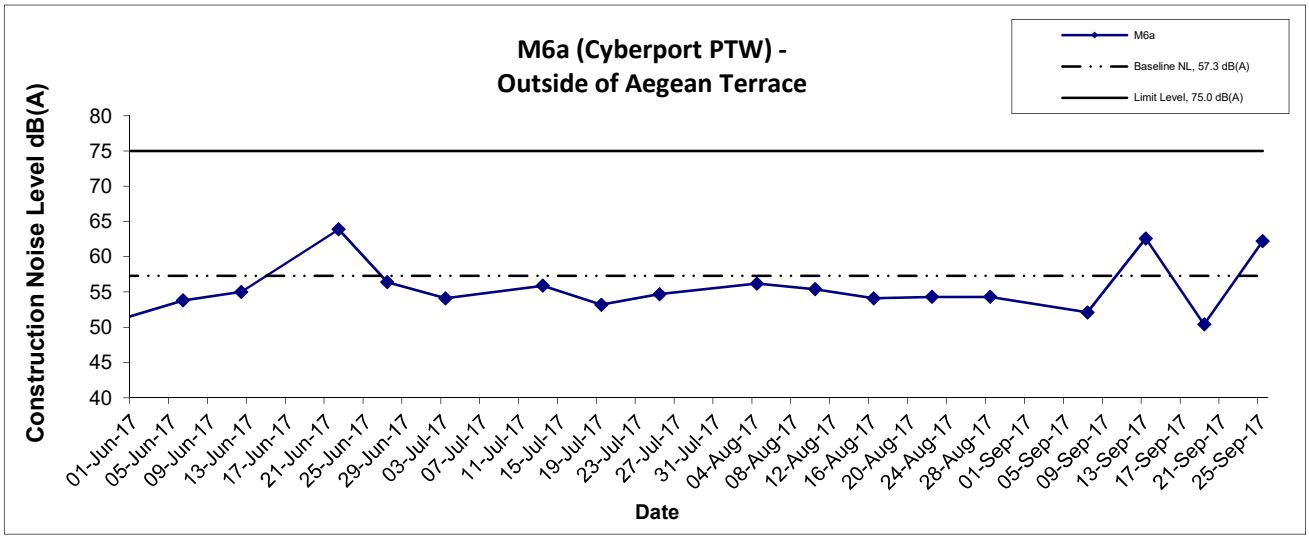


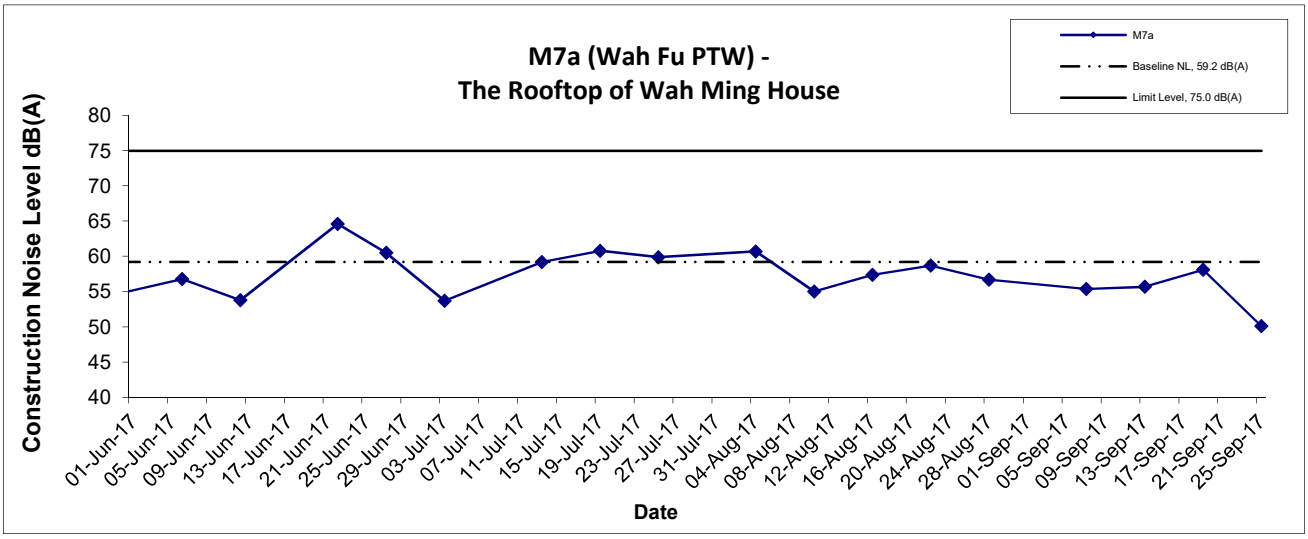
Title: Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau Graphical Presentation of 24-hour TSP Monitoring Results	Scale: N.T.S Date: Sep 17	Project No.: MA11060 Appendix: E	CINOTECH

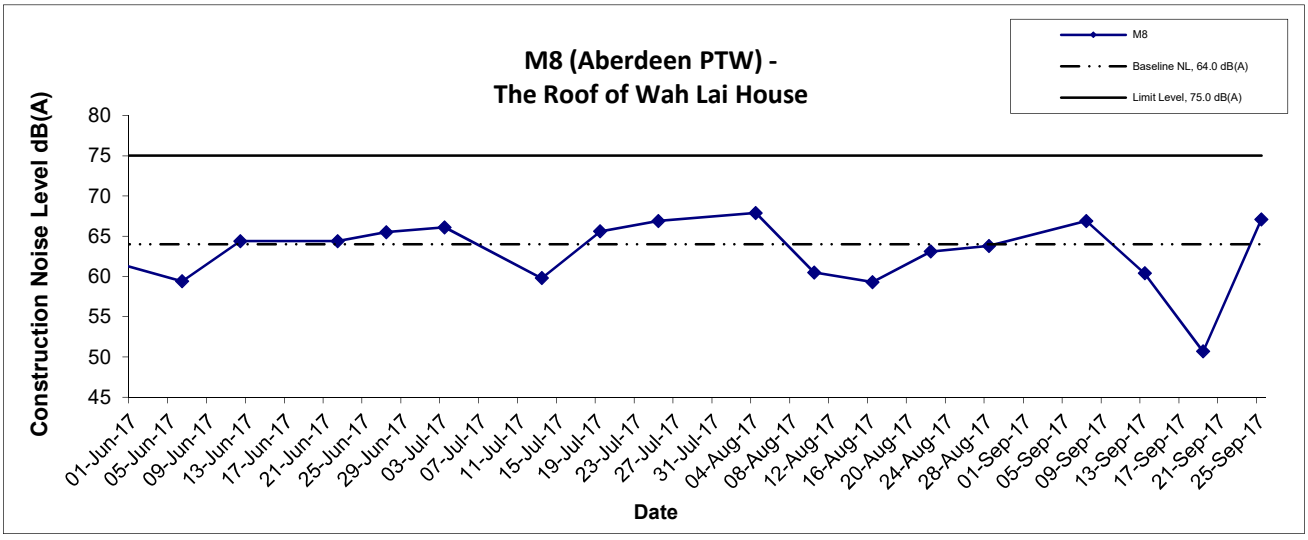
APPENDIX F
GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS

Noise Levels

(0700-1900 hrs on Normal Weekdays)





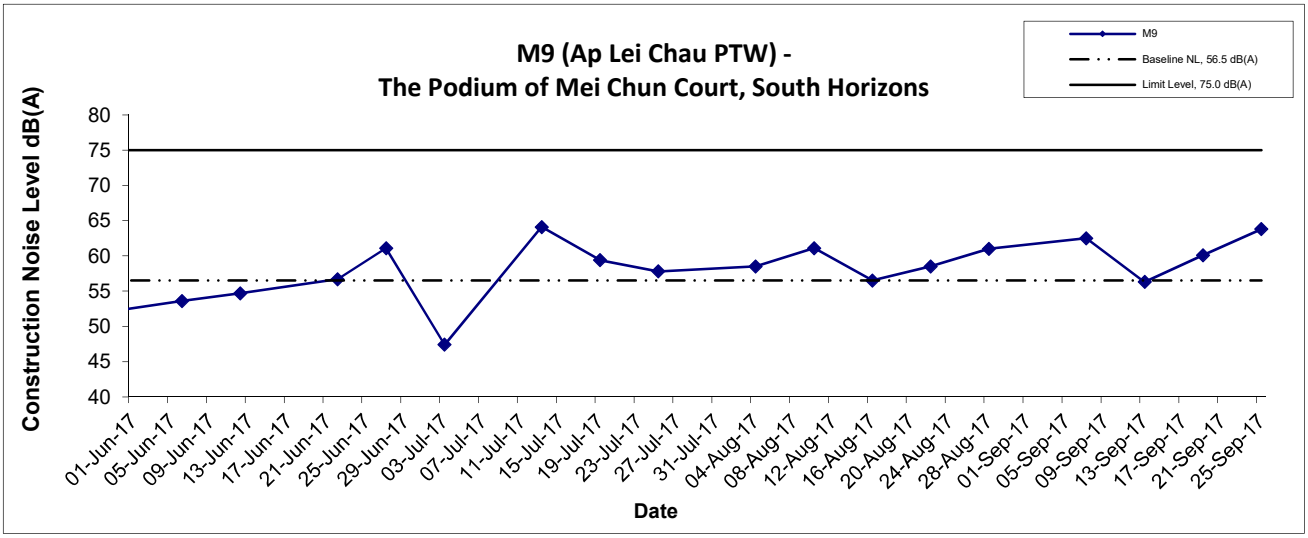


Title	Scale	Project No.
Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	N.T.S Date Sep 17	MA11060 Appendix F

CINOTECH

Noise Levels

(0700-1900 hrs on Normal Weekdays)



Title	Contract No. DC/2009/24 HATS 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Abredeen and Ap Lei Chau Graphical Presentation of Noise Monitoring Result	Scale N.T.S Date Sep 17	Project No. MA11060 Appendix F	CINOTECH

APPENDIX G
IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

APPENDIX G IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
A	**Air Quality**		
3.74	Skip hoist for material transport should be totally enclosed by impervious sheeting.	All construction sites	N/A
	Vehicle washing facilities should be provided at every vehicle exit point.		^
	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 hardcore.		^
	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit.		^
	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.		^
	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.		^
	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.		*
	Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.		^
	Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit.		^
	Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the 3 sides.		^
	Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.		^
3.74	Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	All construction sites	^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
B	**Airborne Noise**		
4.56–4.61	Use of quiet PME, movable barriers and acoustic mats.	All construction sites	*
4.67	Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program.		^
	Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program.		^
	Mobile plant, if any, shall be sited as far away from NSRs as possible.		^
	Machines and plant (such as trucks) that may be in intermittent use shall be shut down between works periods or shall be throttled down to a minimum.		^
4.67	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.		^
	Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.		^
C	**Water Quality**		
6.349 to 6.375	Construction Site Runoff and General Construction Activities The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	All construction sites	*
6.376	Effluent Discharge There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing saltwater intakes.		^
6.377	Accidental Spillage of Chemicals Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General)		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	Regulation should be observed and complied with for control of chemical wastes.		
6.378	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.		^
6.379	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.		^
6.380	Construction Works in Close Proximity of Storm Drains or Seafront: To minimize the potential water quality impacts from the construction works located at or near any watercourse, the practices outlined below should be adopted where applicable. • The use of less or smaller construction plants may be specified to reduce the disturbance to the storm water courses or marine environment. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the storm culvert or sea.	All construction sites	*

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
D	**Waste Management**		
9.107	Reusable steel or concrete panel shutters, fencing and hoarding and signboard should be used as a preferred alternative to items made of wood, to minimize wastage of wood. Attention should be paid to WBTC No. 19/2001 - Metallic Site Hoardings and Signboards to reduce the amount of timber used on construction sites. Metallic alternatives to timber are readily available and should be used rather than new timber. Precast concrete units should be adopted wherever feasible to minimize the use of timber formwork.	All construction sites	^
9.109	All waste materials should be segregated into categories covering: • excavated materials suitable for reuse on-site; • excavated materials suitable for public filling facilities; • remaining C&D waste for landfill; • chemical waste; and • general refuse for landfill.	All construction sites	*
9.113	Sort C&D waste from demolition of existing facilities to recover recyclable portions such as metals.		^
	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.		^
	Encourage collection of aluminium 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.		^
	Any unused chemicals or those with remaining functional capacity shall be recycled.		^
	Proper storage and site practices to minimize the potential for damage or contamination of construction materials.		^
9.115	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.		^
	Training of site personnel in proper waste management and chemical waste handling procedures.		^
9.115	Develop and provide toolbox talk for on-site sorting of C&D materials to enhance worker's awareness in handling, sorting, reuse and recycling of C&D materials.		^
	Provision of sufficient waste disposal points and regular collection of waste.		^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil		^

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
	interceptors.		
9.125	Bentonite slurries used in diaphragm wall construction should be reconditioned and reused wherever practicable. The disposal of residual used bentonite slurry should follow the good practice guidelines stated in ProPECC PN 1/94 "Construction Site Drainage".	All construction sites	N/A
9.131	Adequate number of portable toilets at temporary works areas or the PTWs to ensure that sewage from site staff would be properly collected.		^
9.133	General refuse should be stored in enclosed bins, skips or compaction units separating from C&D material and disposed of at designated landfill.		*
9.135	The recyclable component of the municipal waste generated by the workforce, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.		^
9.137	If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the approved Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.		*
9.142	Prior to excavation of the marine deposit layer, the deposit should be tested in accordance with the ETWB TC(W) No. 34/2002 and the results should be presented in a Preliminary Sediment Quality Report. The marine deposit should be disposed of at the disposal site designated by the Marine Fill Committee (MFC) or Director of Environmental Protection (DEP) depending on the test results.		N/A

EIA Ref.	Recommended Mitigation Measures	Location of the measure	Implementation Status
E	**Terrestrial Ecology**		
10.94	To implement effective noise mitigation measures as recommended in Section 4 of EIA.	All construction sites	N/A
10.95	Dust control practices such as regular watering, complete coverage of any aggregate or dusty material storage piles, and re-schedule of dusty activities during high-wind conditions as well as other measures recommended in Section 3 of EIA, should be implemented.		^
10.96	Fences/hoardings should be erected and installed along the boundary of the works areas.		^
10.97	Standard good site practices as suggested in Section 10 of EIA should be implemented.		N/A
10.98	Provision of proper drainage system and runoff control measures such as use of sand/silt traps, oil/grease separators, sedimentation tanks, etc.		^
F	**Landscape and Visual**		
Table 13.7	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	All construction sites	^
	Existing trees to be retained on site should be carefully protected during construction.		^
	Trees unavoidably affected by the works should be transplanted where practical.		^
	Compensatory tree planting should be provided to compensate for felled trees.		^
	Control of night-time lighting.		^
Table 13.7	Erection of decorative screen hoarding compatible with the surrounding setting.	All construction sites	N/A
G	**Marine Ecology**		
11.137	To minimize the potential indirect impacts on water quality from construction site runoff and various construction activities, the practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted.	All construction sites	*
H	**Hazard to Life**		
14A.201	Limiting use of cranes in terms of locations, lifting height, swing angle and setting up safety zone.	Exact location will be determined on construction site by the engineer	^

Remarks:	^ Compliance of mitigation measure;
	N/A Not Applicable;
	* Recommendation was made during site audit but improved/rectified by the contractor.
	# Recommendation was made during site audit and to be improved / rectified by the contractor.
	X Non-compliance of mitigation measure;
	● Non-compliance but rectified by the contractor;

APPENDIX H
SUMMARY OF ENVIRONMENTAL LICENSES AND PERMITS

Appendix H - Summary of Environmental Licenses and Permits

Permit Number	Valid Period		Details	Status
	From	To		
Water Discharge License				
WT00011629-2012	N/A	31/1/2017	Location: Sandy Bay PTW	Expiry
WT00011633-2012	N/A	31/1/2017	Location: Cyber Port PTW	
WT00011632-2012	N/A	31/1/2017	Location: Ap Lei Chau	
WT00027953-2017	N/A	31/3/2022	Location: Aberdeen PTW	Valid
WT00016837-2013	N/A	31/8/2018	Location: Wah Fu PTW	
Notification of Works Under APCO				
334694	6/9/2011	N/A	All PTWs	N/A
Registered Chemical Waste Producer				
5218-171-L2783-01	14/12/2011	N/A	Location: Sandy Bay PTW	Valid
5218-171-L2783-02	30/12/2011	N/A	Location: Cyber Port PTW	
5218-174-L2783-03	30/12/2011	N/A	Location: Ap Lei Chau	
5218-173-L2783-04	30/12/2011	N/A	Location: Aberdeen PTW	
5218-172-L2783-05	30/12/2011	N/A	Location: Wah Fu PTW	
Special Waste Admission Ticket				
13434	24/11/2016	23/11/2017	Location: Ap Lei Chau	Valid
13435	24/11/2016	23/11/2017	Location: Aberdeen PTW	Valid
13433	24/11/2016	23/11/2017	Location: Wah Fu PTW	Valid

APPENDIX I
SUMMARY OF AMOUNT OF WASTE GENERATED IN THE REPORTING PERIOD

Name of Department: DSD

Name of Contract : Harbour Area Treatment Scheme Stage 2A – Upgrading of Preliminary Treatment Works at Sandy Bay, Cyberport, Wah Fu, Ap Lei Chau and Aberdeen **Contract No. : DC/2009/24**

APPENDIX I MONTHLY SUMMARY WASTE FLOW TABLE FOR 2017 (YEAR)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Broken	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Special Waste
	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]	[in '000ton]
Year2012	1.002910	0.000000	0.000000	0.000000	1.002910	0.000000	6.680000	0.070000	0.070000	0.100000	0.014000	2.406456
Year2013	4.264035	0.000000	0.000000	0.000000	4.264035	0.000000	10.750000	0.000000	0.000000	0.350000	0.064890	2.232710
Year2014	4.639730	0.000000	0.000000	0.000000	4.639730	0.000000	0.000000	0.000000	0.000000	0.450000	0.145370	1.832460
Year2015	5.361825	0.000000	0.000000	0.000000	5.361825	0.000000	0.000000	0.000000	0.031000	0.050000	0.461870	1.082870
Year 2016	5.172790	0.000000	0.000000	0.060000	5.112790	0.000000	0.000000	0.000000	0.000000	0.000000	0.757580	0.980878
JAN	0.33416	0	0	0	0.33416	0	0	0	0	0	0.06044	0.08373
FEB	0.16203	0	0	0	0.16203	0	0	0	0	0	0.03384	0.0981
MAR	0.23135	0	0	0	0.23135	0	0	0	0	0	0.03388	0.13383
APR	0.15905	0	0	0	0.15905	0	0	0	0	0	0.04766	0.15085
MAY	0.16	0	0	0	0.16	0	0	0	0	0	0.024	0.15397
JUNE	0.33	0	0	0	0.33	0	0	0	0	0	0.057	0.14957
SUB-TOTAL	21.817880	0.000000	0.000000	0.060000	21.757880	0.000000	17.430000	0.070000	0.101000	0.950000	1.700530	9.305424
JULY	0.0955	0	0	0	0.0955	0	0	0	0	0	0.031	0.15771
AUG	0.103	0	0	0	0.103	0	0	0	0	0	0.2254	0.16411
SEPT	0.151	0	0	0	0.151	0	0	0	0	0	0.00422	0.14362
OCT	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
DEC	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	22.167380	0.000000	0.000000	0.060000	22.107380	0.000000	17.430000	0.070000	0.101000	0.950000	1.961150	9.770864

Forecast of Total Quantities of C&D materials to be Generated from the Contracts *												
Total Quantity Generated	Hard Rock and Broken	Reused in the Contract	Reused in other Projects	Disposal as Public Fill	Import Fill	Metals	Paper / Cardboard Packaging	Plastics (3)	Chemical Waste	Other, e.g. general refuse	Special Waste
[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000m^3]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000kg]	[in '000m^3]	[in '000ton]
24.714	1.544	1.73	0.06	21.38	0	30	1	1	4	1.65	9.6

Notes :

(1) The performance targets are given in PS Clause 6(14).

(2) Plastics refer to plastic bottles / containers, plastic sheets / foam from packaging material.

(3) The contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where to total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000m3. (PS Clause 5(4)(b) referes). [Delete Note (4) and the table above on the forecast, where inapplicable].

* (4) The assumed density (kg/m^3) for both C&D material and general refuse.
C&D material 2000kg/m3
General refuse 1.0 tonnes/m3

(5) Conversion factors for reporting purpose:
in-situ: rock = 2.5 tonnes/m3 ; soil = 2.0 tonnes/m3
excavated: rock = 2.0 tonnes/m3 ; soil = 1.8 tonnes/m3
broken concrete and bitumen = 2.5 tonnes/m3
C&D Waste = 1.0 tonnes/m3
bentonite slurry = 2.8 tonnes/m3
Paper = 800kg/m3
Chemical = 800kg/m3
Special waste = 0.6m3 / container

APPENDIX J
COMPLAINT LOG

APPENDIX J – COMPLAINT LOG

Reporting Period: July to September 2017

Remarks: No environmental complaint was received in the reporting quarter.

Log Ref.	Location	Received Date	Details of Complaint	Investigation/Mitigation Action	Status
N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

APPENDIX K
SUMMARY OF EXCEEDANCE

APPENDIX K – SUMMARY OF EXCEEDANCE

Reporting Period: July to September 2017

a) Exceedance Report for 1-hr TSP (NIL)

b) Exceedance Report for 24-hr TSP (NIL)

c) Exceedance Report for Construction Noise on normal week days (NIL)