

JOB No.: TCS01062/19

**EPD CONTRACT NO. EP/SP/86/15
ORGANIC WASTE TREATMENT FACILITIES PHASE 2**

**QUARTERLY ENVIRONMENTAL MONITORING AND
AUDIT (EM&A) SUMMARY REPORT
(JUNE TO AUGUST 2020)**

**PREPARED FOR
AJA JOINT VENTURE**

Date	Reference No.	Prepared By	Certified By
12 October 2020	TCS01062/19/600/R0098v2	 Martin Li (Environmental Consultant)	 Tam Tak Wing (Environmental Team Leader)

Version	Date	Remarks
1	18 September 2020	First Submission
2	12 October 2020	Amended against IEC's comments

Your ref TCS1062/19/300/L0099
Our ref 271491/02-09/KL/KL/NL-0651
File ref 02-09

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Attn: Mr. Chris Leung

19 October 2020

Dear Sir

**Contract No. EP/SP/86/15
Organic Waste Treatment Facilities Phase 2
Quarterly Environmental Monitoring & Audit Report (June to August 2020)**

Referring to your report referenced above dated 12 October 2020, we hereby verify that the captioned report ref. no. TCS1062/19/600/R0098v2 complied in general with the requirements as set out in the EM&A Manual.

Should you have any queries, please contact the undersigned at 2268 3256.

Yours faithfully



Kin Lo
Independent Environmental Checker

cc EPD – Ms. Queenie Ng, Ms. Angel Wong, Mr. Sunny Chiu, Mr. W.K. Lam,
Mr. Laurence Lau
AECOM – Mr. Desmond Ng, Mr. Ben Tsang, Mr. Tony Lu, Mr. Pang,
Mr. K. C. Chu, Mr. T. Y. Lou, Mr. YW Mok, Ms. Karie Ng
AJA JV – Ms. Tso So Fong, Mr. Lam Shing Fu, Mr. Johnny Leung, Mr. Kenneth Lau,
Mr. Esmond Ng, Mr. Gabriel Wong
AUES – Mr. T.W. Tam, Mr. Martin Li

EXECUTIVE SUMMARY

ES01 This is the 3rd Quarterly Environmental Monitoring and Audit (EM&A) Summary Report for the Service Contract to summarized environmental monitoring results and inspection findings during the period from **1 June to 31 August 2020** (hereinafter ‘the Reporting Period’).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Table ES-1 Summary of Environmental Monitoring Activities Undertaken in the Reporting Period

Issues	Environmental Monitoring Parameters / Inspection	Sessions
Construction Noise	Leq (30min) Daytime	52
Inspection / Audit	ET Regular Environmental Site Inspection	13

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES03 No daytime construction noise monitoring exceedance was recorded in this Reporting Period. The statistics of environmental exceedance and investigation of exceedance are summarized in the following table.

Table ES-2 Summary of Environmental Monitoring Parameter Exceedance in the Reporting Period

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action	
				Investigation Results	Corrective Actions
Construction Noise	Leq _{30min} Daytime	0	0	NA	NA

SITE INSPECTION

ES04 During the Reporting Period, weekly joint site inspections were undertaken to evaluate the site environmental performance. No non-compliances were observed during the weekly site inspection and environmental audit of the Reporting Period. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.

ENVIRONMENTAL COMPLAINT

ES05 No environmental complaint was recorded in this Reporting Period for the Project. The statistics of environmental complaint are summarized in the following table.

Table ES-3 Summary of Environmental Complaint Records in the Reporting Period

Reporting Period	Environmental Complaint Statistics			Related with the Works Contract
	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2020	0	0	NA	NA
1 – 31 July 2020	0	0	NA	NA
1 – 31 August 2020	0	0	NA	NA

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES06 No environmental summons or prosecutions was received in this Reporting Period for the Project. The statistics of environmental summons or prosecutions are summarized in the following tables.

Table ES-4 Summary of Environmental Summons Records in the Reporting Period

Reporting Period	Environmental Summons Statistics			Related with the Works Contract
	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2020	0	0	NA	NA
1 – 31 July 2020	0	0	NA	NA
1 – 31 August 2020	0	0	NA	NA

Table ES-5 Summary of Environmental Prosecutions Records in the Reporting Period

Reporting Period	Environmental Prosecution Statistics			Related with the Works Contract
	Frequency	Cumulative	Complaint Nature	
1 – 30 June 2020	0	0	NA	NA
1 – 31 July 2020	0	0	NA	NA
1 – 31 August 2020	0	0	NA	NA

REPORTING CHANGE

ES07 No reporting change was made in this Reporting Period.

FUTURE KEY ISSUES

ES08 Construction noise would be a key environmental issue during construction work of the Project. Noise mitigation measures such as using quiet plants should be implemented in accordance with the EM&A requirement.

ES09 In addition, all effluent discharge from the construction site shall fulfill the discharge licence stipulation.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Environmental Protection Department (hereinafter referred as “EPD”) is the Project Proponent for the Project “*Organic Waste Treatment Facilities Phase 2*” (hereinafter referred as “the Project”). The Project is a Designated Project to be implemented under Environmental Permit No. EP-460/2013 (hereinafter referred as “the EP”). The major construction work of the Project included:

- (i) Demolition and removal of the existing above ground structures of the Sha Ling Livestock Waste Composting Plant (SLCP);
- (ii) Construction of superstructure for an administration building and enclosed waste reception area;
- (iii) Installation of treatment facilities including waste pre-treatment equipment, digesters, biogas holding tanks, composting, wastewater treatment, air treatment systems; and
- (iv) Facilities for biogas processing, utilization and transmission;

1.1.2 AJA Joint Venture (hereinafter referred as “AJAJV”) has been awarded the *EPD Contract No. EP/SP/86/15 “Organic Waste Treatment Facilities Phase 2”*. In accordance with the Works Contract requirements, AJAJV shall take over the responsibility of the EP. Based on the requirement, Further Environmental Permit application was submitted by AJAJV to EPD on 10 September 2019 and granted on 2 October 2019. The Further Environmental Permit is named as FEP-01/460/2013 (hereinafter referred as “the FEP”).

1.1.3 According to the approved Environmental Monitoring and Audit Manual (hereinafter referred as “the EM&A Manual”), AJAJV employed Action-United Environmental Services & Consulting (hereinafter referred as “AUES”) as Environmental Team (hereinafter referred as “ET”) to implement monitoring programme and as well as the associated duties.

1.1.4 According to the EM&A Manual, construction noise was identified as the only key environmental issue during the construction phase of the Project and it is required to carry out construction noise monitoring throughout the construction phase. Furthermore, baseline noise monitoring as part of the EM&A programmes shall be conducted prior to the commencement of the construction works under the Project. Thus, baseline noise monitoring was conducted by ET from **25 September 2019** to **8 October 2019**. The baseline monitoring report compiled by the ET was verified by Independent Environmental Checker (hereinafter the “IEC”) and was submitted to EPD on 19th November 2019 for endorsement.

1.1.5 This is the **3rd** Quarterly EM&A Summary Report for the Service Contract to summarized monitoring results and inspection findings during the period from **1 June to 31 August 2020** (hereinafter ‘the Reporting Period’).

1.2 REPORT STRUCTURE

1.2.1 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-

Section 1	<i>Introduction</i>
Section 2	<i>Project Organization and Construction Progress</i>
Section 3	<i>Summary of Impact Monitoring Requirements</i>
Section 4	<i>Construction Noise Monitoring</i>
Section 5	<i>Waste Management</i>
Section 6	<i>Site Inspections</i>
Section 7	<i>Environmental Complaints and Non-Compliance</i>
Section 8	<i>Implementation Status of Mitigation Measures</i>
Section 9	<i>Conclusions and Recommendations</i>

2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1.1 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*. Details of responsibilities of respective parties can be referred to EM&A Monthly Report.

2.2 CONSTRUCTION PROGRESS

2.2.1 3-month rolling construction program of the Project is enclosed in *Appendix D*; and the major construction activities undertaken in the Reporting Period is presented as below:

June 2020

- Soil nailing
- ELS excavation

July 2020

- Earth Mat
- Soil Nail
- Excavation
- AD Tank footing

August 2020

- Boundary wall first pour
- Excavation works for Reception Building
- Removal of trees
- Earth mat

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project of contract 1 are presented in *Tables 2-1*.

Table 2-1 Status of Environmental Licenses and Permits of the Project

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
1	Notification pursuant to Air pollution Control (Construction Dust) Regulation	Application No. 448863	--	--	Notified on 9 September 2019
2	Chemical Waste Producer Registration	Ref. no.: 5211-641-A2957-01	--	--	Issued on 9 Oct 2019
3	Water Pollution Control Ordinance - Discharge License	Application No. 448913	--	--	Application made on 10 Sep 2019
4	Waste Disposal Regulation - Billing Account for Disposal of Construction Waste	Account no. 7035307	2 Oct 2019	NA	Valid
5	Further Environmental Permit	FEP-01/460/2019	2 Oct 2019	NA	Valid
6	Construction Noise Permit	GW-RN0074-20	13 Feb 2020	28 Jun 2020	Valid

Item	Description	License/Permit Status			
		Permit no./ account no./ Ref. no.	Valid Period		Status
			From	To	
		GW-RN0422-20	29 Jun 2020	27 Dec 2020	Valid
		GW-RN0536-20	28 Jul 2020	27 Jan 2021	Valid
7	Water Discharge Licence	WT00035196-201 9	20 Mar 2020	31 Mar 2025	Valid

3. SUMMARY OF IMPACT MONITORING REQUIREMENTS

3.1 GENERAL

3.1.1 According to Environmental Monitoring and Audit requirements set out in the Approved EM&A manual, construction noise was identified as the only key environmental issues during the construction phase of the Project.

3.2 MONITORING PARAMETERS

3.2.1 The construction noise monitoring requirement stated in the approved EM&A Manual is summarized in *Table 3-1*.

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters
Noise	<ul style="list-style-type: none"> Leq(30min) in normal working days (Monday to Saturday) 07:00-19:00 except public holiday Supplementary information for data auditing, statistical results such as L₁₀ and L₉₀ shall also be obtained for reference.

3.3 MONITORING LOCATIONS

3.3.1 According to the EM&A Manual Section 4.2.3, four (4) designated noise sensitive receivers (NSR) were recommended as construction noise monitoring stations. Site visit was conducted by the ET on 23th September 2019 to review and study sensitive receivers at surrounding and adjacent to the Project. Due to the presence of steel wire fencing and village dogs, two of the designated monitoring locations N2 and N3 were not accessible. Hence, two alternative locations N2a and N3a are proposed as a temporary noise monitoring locations to carry out impact noise monitoring until the alternative locations are approved by EPD. Details of the locations for construction noise monitoring in the Reporting Period is listed in *Table 3-2* and showed in *Appendix C*.

Table 3-2 Impact Monitoring Stations – Construction Noise

ID	Location
N1	Village House No. 308, Sha Ling
N2a	Village House No. 318, Sha Ling
N3a	Village House No. 261, Sha Ling
N4	Village House in Sha Ling

Remark: N2a and N3a are temporary noise monitoring location. If there is any new alternative location(s) available in future, the impact monitoring will be carried out at the new alternative location(s) upon EPD agreement.

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 Noise monitoring shall be conducted at the all available designated monitoring stations or alternative locations. The monitoring frequency shall depend on scale of the construction activities. According to EM&A manual, regular noise monitoring should be carried out once a week when noise generating activities are underway and the monitoring requirement is presented below:

- one set of Leq(30min) measurements between 07:00 and 19:00 hours on normal weekdays

3.5 MONITORING EQUIPMENT

3.5.1 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms⁻¹.

3.6 ACTION/LIMIT (A/L) LEVELS

3.6.1 Action and Limit levels for construction noise as stipulated in the approved Environmental Monitoring and Audit Manual are listed in *Tables 3-3*.

Table 3-3 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)
	Time Period: 0700-1900 hours on normal weekdays	
N1	When one or more documented complaints are received	75 dB(A)
N2a		
N3a		
N4		

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

4. CONSTRUCTION NOISE MONITORING

4.1 GENERAL

4.1.1 In the Reporting Period, construction noise monitoring was performed at monitoring location N1, N2a, N3a and N4. No construction work was carried out during restricted hours in the reporting period, therefore no additional noise monitoring during restricted hours was performed.

4.2 RESULTS OF NOISE MONITORING

4.2.1 In the Reporting Period, a total of 52 sessions of daytime construction noise monitoring were performed at the agreed monitoring locations in the reporting period. Since the noise measurement was made under free field condition, a façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines. The daytime noise monitoring results are summarized in **Table 4-1**. The graphical plots of construction noise monitoring result are shown in **Appendix E**.

4.2.2 No adverse impact due to weather condition on the monitoring result was observed in reporting quarter. A summary of meteorological information for the Reporting Period is shown in **Appendix F**.

Table 4-1 Summary of Construction Noise Monitoring Results

Monitoring Location	Leq, 30min (dB(A))	
	Min	Max
N1	55.4	64.4
Record Date	17-Jul-20	30-Jun-20, 23-Jul-20
N2	49.3	59.5
Record Date	8-Jun-20	24-Jun-20
N3a	52.8	70.4
Record Date	30-Jun-20	23-Jul-20
N4	58.0	70.9
Record Date	23-Jul-20	30-Jun-20

4.2.3 Summary of A/L Level exceedance of construction noise and statistical analysis of compliance for construction noise monitoring results are summarized in **Table 4-2**

Table 4-2 Summaries of Action/Limit Level Exceedance of Construction Noise

Station	Limit Level	Action Level	Received Date
N1	0	0	NA
N2	0		
N3a	0		
N4	0		

4.2.4 As shown in **Table 4-2**, the noise level measured at the designated monitoring locations were below 75dB(A). No adverse weather condition which may affect the monitoring result was encountered during the course of noise monitoring in the reporting period. Furthermore, no documented complaint is received, indicating no exceedance of Action Level.

5. WASTE MANAGEMENT

5.1 GENERAL WASTE MANAGEMENT

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

5.2 RECORDS OF WASTE QUANTITIES

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

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

5.2.2 The quantities of waste for disposal in this Reporting Period are summarized in *Tables 5-1* and *5-2*.

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

Type of Waste	Quantity			Disposal Location
	Jun 2020	Jul 2020	Aug 2020	
Total C&D Materials (Inert) ('000m ³)	17.647	9.345	2.481	TM38 and other projects
Reused in this Contract (Inert) ('000m ³)	0	0	0	-
Reused in other Projects (Inert) ('000m ³)	17.459	9.263	2.434	-
Disposal as Public Fill (Inert) ('000m ³)	0.188	0.082	0.047	TM38

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

Type of Waste	Quantity			Disposal Location
	Jun 2020	Jul 2020	Aug 2020	
Recycled Metal ('000kg)	0	0	0	-
Recycled Paper / Cardboard Packing ('000kg)	0.4	0	0	Collected by paper recycling company
Recycled Plastic ('000kg)	0	0	0	-
Chemical Wastes ('000kg)	0	0	0	-
General Refuses ('000m ³)	0.009	0.006	0.011	NENT

6. SITE INSPECTION

6.1 REQUIREMENTS

6.1.1 According to the approved EM&A Manual, the environmental site inspection shall be formulated by ET Leader. Weekly environmental site inspections should be carried out to confirm the environmental performance.

6.2 FINDINGS / DEFICIENCIES DURING THE REPORTING PERIOD

6.2.1 In the Reporting Period, **13** events of joint site inspection by the Employer’s Representative (ER), ET, IEC and the Contractor were undertaken for the Contract to evaluate the site environmental performance. No non-compliance was identified during the site inspection. The summaries of findings / deficiencies recorded in the site inspection during the Reporting Period are presented in **Table 6-1**.

6.2.2 The findings / deficiencies of the Project observed during the weekly site inspection are listed in **Table 6-1**.

Table 6-1 Summary of Reminders/Observations of Site Inspection in Reporting Period

Reporting Period	Date of site inspection	Nos. of findings / reminders	Follow-Up Status
June 2020	2, 9, 16, 23 and 30 June 2020	3	Completed
July 2020	7, 14, 21 and 28 July 2020	3	Completed
August 2020	4, 11, 18 and 25 August 2020	0	Completed

7. ENVIRONMENTAL COMPLAINT, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

7.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

7.1.1 In the Reporting Period, no environmental complaint, summons and prosecution under the EM&A Programme was lodged for the project. The statistical summary table of environmental complaint is presented in *Tables 7-1, 7-2 and 7-3.*

Table 7-1 Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 30 June 2020	0	0	NA
1 – 31 July 2020	0	0	NA
1 – 31 August 2020	0	0	NA

Table 7-2 Statistical Summary of Notification of Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Summons Nature
1 – 30 June 2020	0	0	NA
1 – 31 July 2020	0	0	NA
1 – 31 August 2020	0	0	NA

Table 7-3 Statistical Summary of Successful Prosecutions

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Prosecution Nature
1 – 30 June 2020	0	0	NA
1 – 31 July 2020	0	0	NA
1 – 31 August 2020	0	0	NA

8. ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

8.1 GENERAL REQUIREMENTS

8.1.1 The environmental mitigation measures that recommended in the Environmental Mitigation Implementation Schedule (EMIS) in the approved EM&A Manual covered the issues of dust, noise, water and waste and they are summarized presented in [Appendix H](#).

8.1.2 AJAJV had been implementing the required environmental mitigation measures according to the Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by AJAJV in this Reporting Period are summarized in [Table 8-1](#).

Table 8-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> • Any wastewater generated should be appropriately treated by treatment facilities; • Drainage channels were provided to convey run-off into the treatment facilities; and • Drainage systems were regularly and adequately maintained.
Air Quality	<ul style="list-style-type: none"> • Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather; • Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers; • Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet; • Public roads around the site entrance/exit had been kept clean and free from dust; and • Tarpaulin covering of any dusty materials on a vehicle leaving the site.
Noise	<ul style="list-style-type: none"> • Good site practices to limit noise emissions at the sources; • Use of quiet plant and working methods; • Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs; • Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs; • Alternative use of plant items within one worksite, where practicable.
Waste Management	<ul style="list-style-type: none"> • Any excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible; • Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner; • Trip ticket system for the disposal of C&D materials to any designed public filling facility and/or landfill was implemented; and • Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.
General	<ul style="list-style-type: none"> • The site was generally kept tidy and clean.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

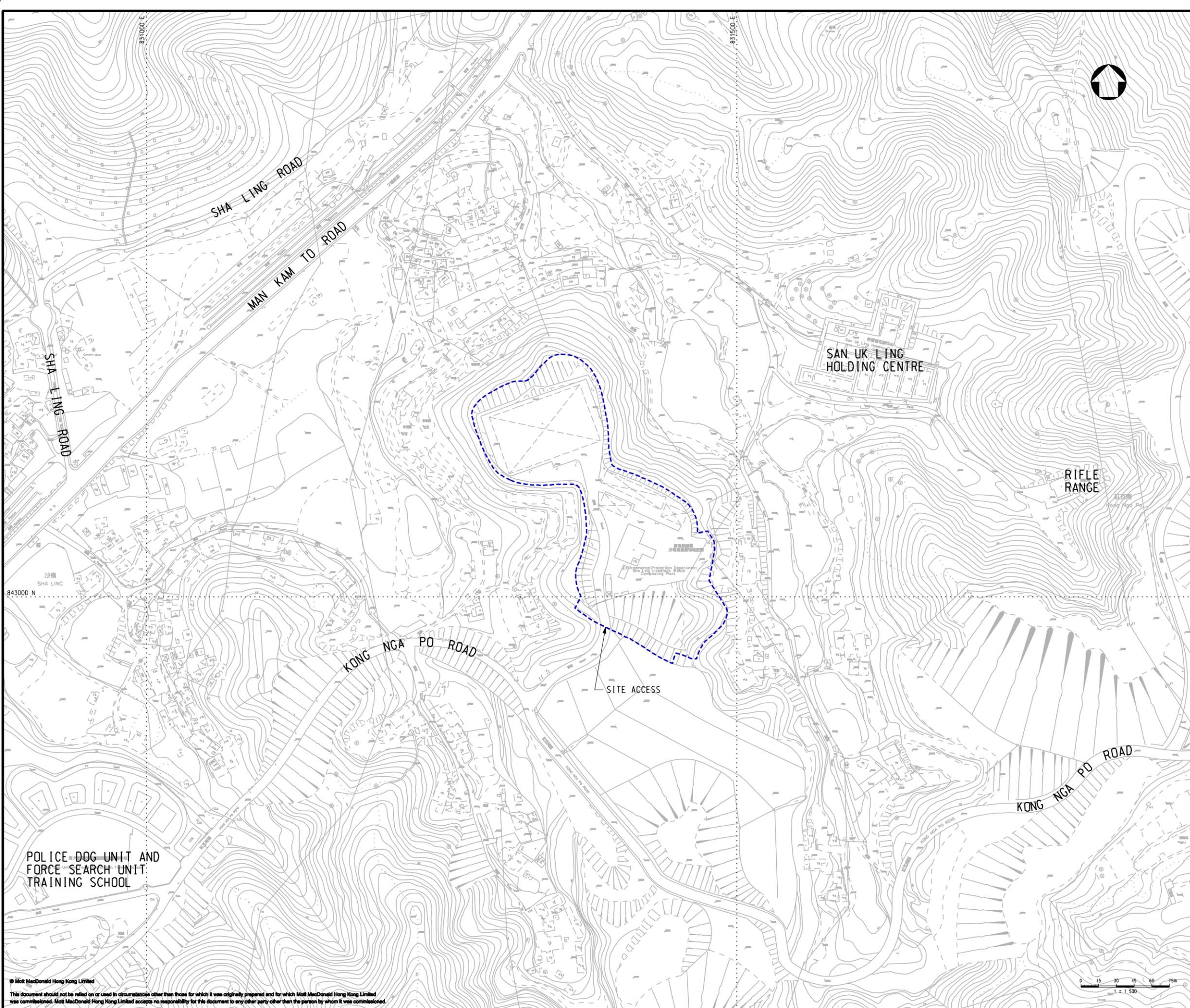
- 9.1.1 This is the **3rd** Quarterly Environmental Monitoring and Audit (EM&A) Summary Report for the Service Contract to summarize monitoring results and inspection findings during the period from **1 June to 31 August 2020** (the Reporting Period).
- 9.1.2 In the Reporting Period, no daytime construction noise monitoring results that triggered the Limit Level was recorded and no noise complaint (which is an Action Level exceedance) was received by the ER, EPD and the Contractors.
- 9.1.3 During the Reporting Period, weekly joint site inspections were undertaken to evaluate the site environmental performance. No non-compliances were observed during the weekly site inspection and environmental audit of the Reporting Period. Minor deficiencies found in the weekly site inspection were in general rectified within the specified deadlines. The environmental performance of the Project was therefore considered satisfactory.
- 9.1.4 No documented complaint, notification of summons or successful prosecution was received under the Project.

9.2 RECOMMENDATIONS

- 9.2.1 Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants or temporary noise barrier installation at the construction noise predominated area should be implemented in accordance with the EM&A requirement.
- 9.2.2 In addition, all effluent discharge shall be ensured to fulfill the discharge licence stipulation.
- 9.2.3 All the trees proposed to be retained in-situ should be properly preserved and protected during the construction works. Tree Preservation and Protection Works for these retained trees shall follow Section 3 and 26 of CEDD's General Specification for Engineering Works and Section 26 of Contract Specification Part B.
- 9.2.4 Trees to be felled shall be in accordance with the Tree Preservation and Removal Proposal (TPRP) to be approved by relevant approval authority. The tree removal work shall only commence after such approval has been granted.
- 9.2.5 Contract Specification Part B Section 1.78 "Waste Management" and DEVB's "Guidelines on Yard Waste Reduction and Treatment" should be referred before tree removal and plan the necessary arrangement.

Appendix A

Layout plan of the Project



Notes

Key to symbols

 PROPOSED SITE AREA

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	JUN 13	MING	GENERAL REVISION	MR	AFK
P1	DEC 12	MING	FIRST ISSUE	MR	AFK



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Client



Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

Project

**AGREEMENT NO. CE34/2011(EP)
DEVELOPMENT OF ORGANIC WASTE
TREATMENT FACILITIES PHASE 2 -
FEASIBILITY STUDY**

Title

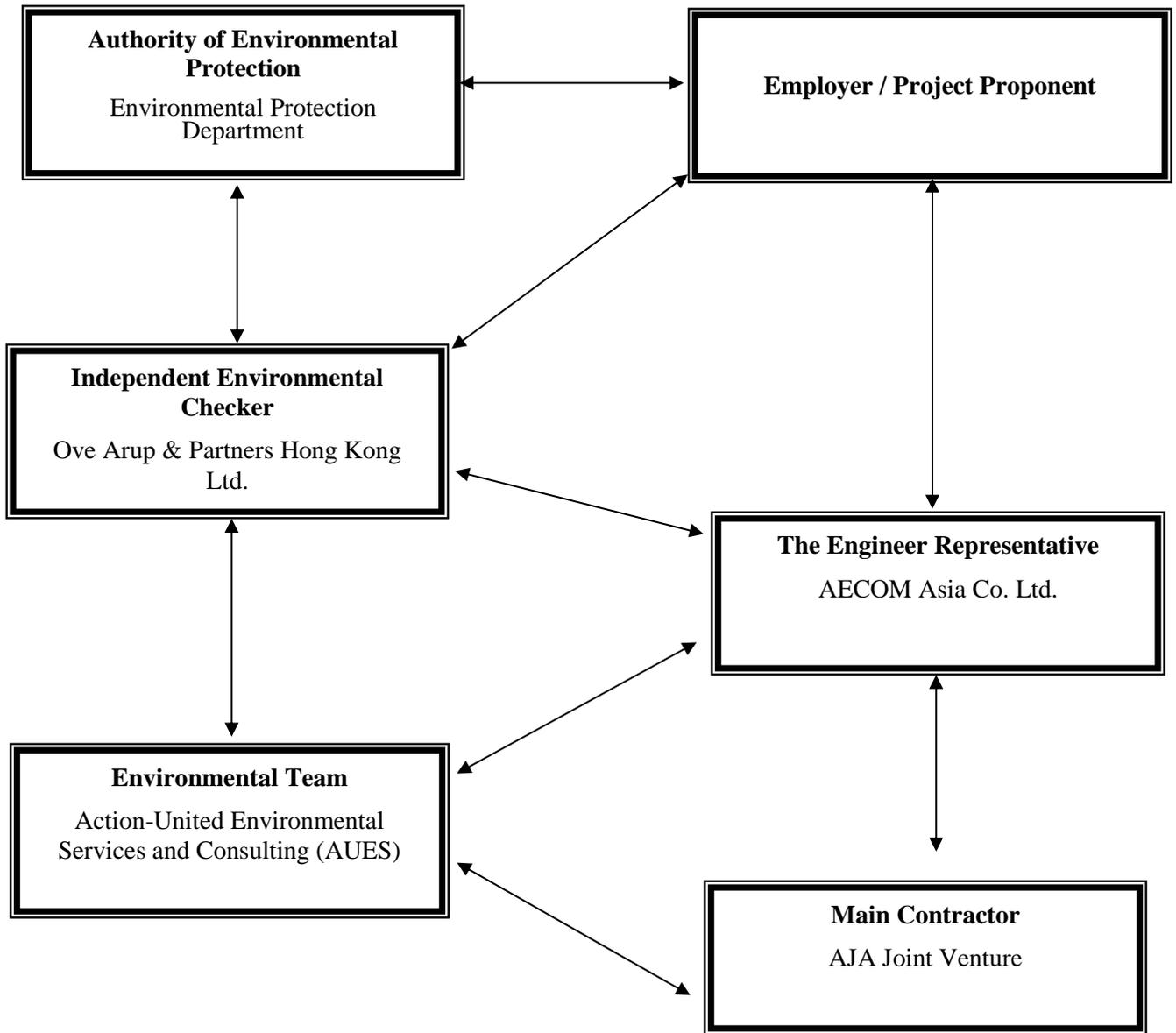
LOCATION OF THE PROJECT

Designed	HY	Eng check	AT
Drawn	MING	Coordination	AT
Dwg check	HY	Approved	AFK
Scale at A1	1:1500	Status	PRE
Drawing Number		Rev	P2

FIGURE 1.1

Appendix B
Organization Chart

Project Organization Chart



Contact Details of Key Personnel for the Project

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
EPD	Project Proponent	Sunny Chiu	3151 7209	3528 0492
AECOM	Resident Engineer	Terrence Lam	5579 5239	3010 8507
AECOM	Resident Engineer	TY Lou	5620 4008	3010 8507
ARUP	Independent Environmental Checker	Kin Lo	2268 3256	2268 3380
ARUP	Environmental Consultant	Chloe Cheung	2268 3573	2268 3380
ARUP	Engineer (Safety, Environment and Planning)	Kitty Lee WK	2908 4604	2268 3955
AJAJV	Project Manager	Victor Wu	2862 5013	2862 5013
AJAJV	Construction Manager	Johnny Leung	9494 0581	9494 0581
AJAJV	Project Environmental Manager	Gabriel Wong	6114 9590	6114 9590
AUES	Environmental Team Leader	T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Nicola Hon	2959 6059	2959 6079
AUES	Environmental Consultant	Ben Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Martin Li	2959 6059	2959 6079

Legend:

EPD (Employer) – Environmental Protection Department

AECOM (Project Consultant) – AECOM Asia Co. Ltd.

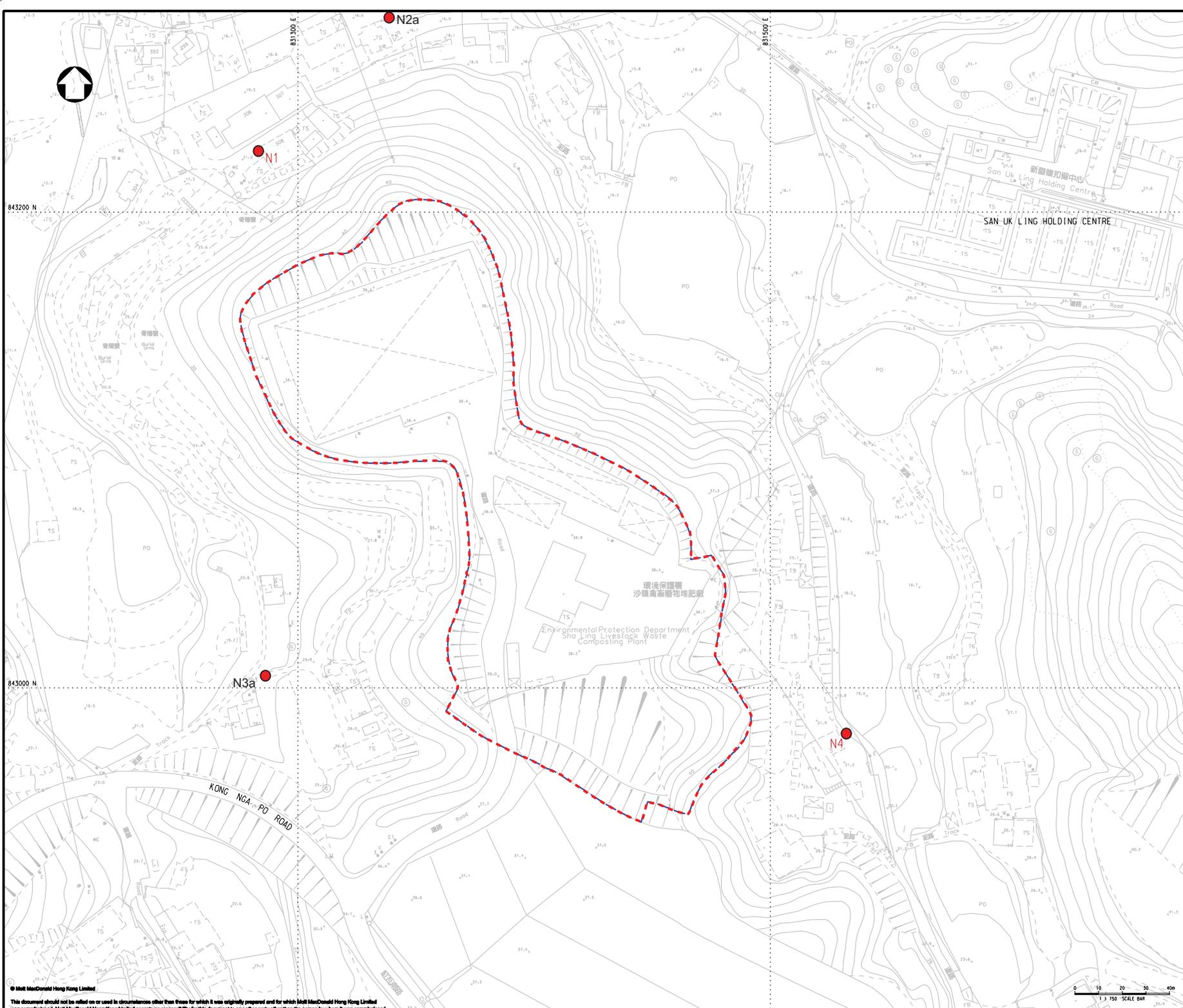
AJAJV (Main Contractor) – AJA Joint Venture

ARUP (IEC) – Ove Arup & Partners Hong Kong Ltd.

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

Appendix C

Monitoring Locations for Impact Monitoring



Notes

Key to symbols

- - - - - Construction Site Boundary
- Noise Monitoring Station

Reference drawings

P2	JUL 13	MING	GENERAL REVISION	AM	AFK
P1	DEC 12	MING	FIRST ISSUE	SC	AFK
Rev	Date	Drawn	Description	Chk'd	App'd

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Client



Environmental Protection Department
The Government of the Hong Kong
Special Administrative Region

Project
AGREEMENT NO. CE34/2011(EP)
DEVELOPMENT OF ORGANIC WASTE
TREATMENT FACILITIES PHASE 2 -
FEASIBILITY STUDY

Title
PROPOSED LOCATIONS OF
CONSTRUCTION NOISE
MONITORING STATIONS

Designed	SC	Eng check	AT
Drawn	MING	Coordination	AT
Dwg check	EY	Approved	AFK
Scale at A1	1:750	Status	PRE
Drawing Number		Rev	P2

FIGURE 4.1

Appendix D

3-Month Rolling Construction Programme



Contract No. EP/SP/86/15
Organic Waste Treatment Facilities Phase 2

CONTRACTOR'S SUBMISSION FORM (CSF)

To: Independent Consultant
Attn: Mr. Robert Bates / Mr. David Bradley

Submission Ref. No: OWTF2 / ALC / CSF / PLP / 00251 /

Your Ref. No: NIL

Title of Submission: Three-Month Rolling Programme

Description of Contents:

Method Statement Plan Others

Please find enclosed the Three-Month Rolling Programme for the next three months pursuant to Clause 1.4.1.2 of Specification Part A, for your information and records.

Specification/ Drawing Reference (if applicable):

Specification Part A, Clause 1.4.2

List of Attachment (if applicable):

Three-Month Rolling Programme (printed 9-Apr-20)

Purpose of Submission: For Approval/Certification For Information For Record

Date of Required Response:

From: Deputy Project Manager

Name: Mr. Chris Leung

Signature: 

Date: 08 May 2020

Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020					
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14
Contract No. EP/SP/86/15 - Organic Resources Recovery Centre, Phase 2		1253	12-Aug-19	15-Jan-23	12-Aug-19 A	15-Jan-23	0						
KEY DATES (LOA, Commencement, Completion)		1253	12-Aug-19	15-Jan-23	12-Aug-19 A	15-Jan-23	-225						
O2_G1000	LETTER OF ACCEPTANCE (FOT, Appdx. A)	0	12-Aug-19		12-Aug-19 A								
O2_G1020	PROJECT START - COMMENCEMENT OF WORKS (28d from LOA, FOT, Appdx. A)	0	05-Sep-19		05-Sep-19 A								
O2_G1040	Original Contract Construction Duration - (1004d from LOA, FOT, Appdx. A)	1004	05-Sep-19	04-Jun-22	05-Sep-19 A	04-Jun-22	0						
O2_G1060	PROJECT COMPLETION	0		15-Jan-23		15-Jan-23*	-225						
GENERAL SUBMISSIONS (CONTRACT REQUIREMENTS)		996	03-Sep-19	25-May-22	03-Sep-19 A	25-May-22	235						
Construction Programme		262	03-Sep-19	21-May-20	03-Sep-19 A	21-May-20	-68						
O2_G2220	Prepare & submit Critical Path Network to Employer, ER & IC (Clause 1.4.2 of Specs Part A, v	28	01-Mar-20	28-Mar-20	01-Mar-20 A	31-Mar-20 A							
O2_G2240	IC checks & certifies Programme (COC Clause 14.1, w/in 14days of receipt by IC)	14	03-Sep-19	16-Sep-19	03-Sep-19 A	09-Apr-20 A							
O2_G2260	IC checks & certifies Critical Path Network (Clause 1.4.2 of Specs Part A, w/in 14d of receipt c	14	01-Apr-20	14-Apr-20	01-Apr-20 A	07-May-20	-68						
O2_G2280	Employer Consents to Contract Programme (COC Clause 14.3, w/in 14days of receipt of certi	14	12-Apr-20	25-Apr-20	10-Apr-20 A	07-May-20	-61						
O2_G2320	Employer Consents to Critical Path Network (Clause 1.4.2 of Specs Part A, w/in 14d of receipt	14	08-May-20	21-May-20	08-May-20	21-May-20	-68						
Project Management Plan (PMP)		222	23-Sep-19	01-May-20	15-Oct-19 A	01-May-20	-165						
O2_G2640	Re-submit PMP to Independent Consultant for Certification	7	23-Sep-19	29-Sep-19	15-Oct-19 A	17-Jan-20 A							
O2_G2660	Independent Consultants Certify the PMP	14	30-Sep-19	13-Oct-19	18-Jan-20 A	29-Jan-20 A							
O2_G2680	Independent Consultants Issue the Certified PMP to the Employer	7	14-Oct-19	20-Oct-19	30-Jan-20 A	05-Feb-20 A							
O2_G2700	Employer's Comments on the Certified PMP	14	06-Feb-20	19-Feb-20	06-Feb-20 A	12-Feb-20 A							
O2_G2720	Re-submit PMP to Independent Consultant as per Employer's Comments	7	01-Feb-20	07-Feb-20	12-Feb-20 A	06-Mar-20 A							
O2_G2740	Independent Consultants Certify the Revised PMP	7	04-Mar-20	11-Mar-20	07-Mar-20 A	19-Mar-20 A							
O2_G2800	Independent Consultants Issue the Certified Revised PMP to the Employer	7	11-Mar-20	18-Mar-20	20-Mar-20 A	26-Mar-20 A							
O2_G2820	Employer's Consent to Certified Revised PMP	14	18-Mar-20	01-Apr-20	27-Mar-20 A	01-May-20	-165						
O2_G2840	Employer's Consent - PMP	0		01-May-20		01-May-20	-165						
Human Resource Plan (HRP)		215	30-Sep-19	01-May-20	21-Dec-19 A	01-May-20	-125						
O2_G3840	Independent Consultants Certify the HRP	14	30-Sep-19	13-Oct-19	21-Dec-19 A	20-Jan-20 A							
O2_G3850	Independent Consultants Issue the Certified HRP to the Employer	7	14-Oct-19	20-Oct-19	21-Jan-20 A	27-Jan-20 A							
O2_G3860	Employer's Comments on the Certified HRP	14	06-Feb-20	19-Feb-20	28-Jan-20 A	12-Feb-20 A							
O2_G3870	Re-submit HRP to Independent Consultant as per Employer's Comments	7	20-Feb-20	26-Feb-20	13-Feb-20 A	02-Mar-20 A							
O2_G3880	Independent Consultants Certify the Revised HRP	7	04-Mar-20	11-Mar-20	03-Mar-20 A	16-Mar-20 A							
O2_G3890	Independent Consultants Issue the Certified Revised HRP to the Employer	7	11-Mar-20	18-Mar-20	17-Mar-20 A	23-Mar-20 A							
O2_G3900	Employer's Consent to Certified Revised HRP	14	18-Mar-20	01-Apr-20	24-Mar-20 A	01-May-20	-125						
O2_G3910	Employer's Consent - HRP	0		01-May-20		01-May-20	-125						
Works Plan (WP)		271	09-Sep-19	05-Jun-20	21-Sep-19 A	05-Jun-20	-160						
O2_G4020	Independent Consultants Comments on WP	14	09-Sep-19	22-Sep-19	21-Sep-19 A	06-Jan-20 A							
O2_G4030	Re-submit WP to Independent Consultant for Certification	7	23-Sep-19	29-Sep-19	07-Jan-20 A	16-Mar-20 A							
O2_G4040	Independent Consultants Certify the WP	14	06-Mar-20	20-Mar-20	20-Feb-20 A	27-Mar-20 A							
O2_G4050	Independent Consultants Issue the Certified WP to the Employer	7	20-Mar-20	27-Mar-20	28-Mar-20 A	03-Apr-20 A							
O2_G4060	Employer's Comments on the Certified WP	14	04-Apr-20	17-Apr-20	04-Apr-20 A	01-May-20	-160						
O2_G4070	Re-submit WP to Independent Consultant as per Employer's Comments	7	02-May-20	08-May-20	02-May-20	08-May-20	-160						
O2_G4080	Independent Consultants Certify the Revised WP	7	09-May-20	15-May-20	09-May-20	15-May-20	-160						
O2_G4090	Independent Consultants Issue the Certified Revised WP to the Employer	7	16-May-20	22-May-20	16-May-20	22-May-20	-160						
O2_G4100	Employer's Consent to Certified Revised WP	14	23-May-20	05-Jun-20	23-May-20	05-Jun-20	-160						
O2_G4110	Employer's Consent - WP	0		05-Jun-20		05-Jun-20	-160						
Design Plan (DP)		203	03-Dec-19	22-Jun-20	03-Dec-19 A	22-Jun-20	-177						
O2_G2460a	Prepare Design Plan (for Enhancement Works)	28	03-Dec-19	30-Dec-19	03-Dec-19 A	20-Feb-20 A							
O2_G4210	Submit DP to IC for Checking	0		11-Feb-20		20-Feb-20 A							
O2_G4220	Independent Consultants Comments on DP	14	12-Feb-20	25-Feb-20	21-Feb-20 A	06-Mar-20 A							
O2_G4230	Re-submit DP to Independent Consultant for Certification	7	08-Mar-20	14-Mar-20	07-Mar-20 A	22-Apr-20 A							
O2_G4240	Independent Consultants Certify the DP	14	05-Apr-20	18-Apr-20	01-Apr-20 A	27-Apr-20 A							
O2_G4250	Independent Consultants Issue the Certified DP to the Employer	7	19-Apr-20	25-Apr-20	28-Apr-20 A	04-May-20	-177						
O2_G4260	Employer's Comments on the Certified DP	14	05-May-20	18-May-20	05-May-20	18-May-20	-177						
O2_G4270	Re-submit DP to Independent Consultant as per Employer's Comments	7	19-May-20	25-May-20	19-May-20	25-May-20	-177						
O2_G4280	Independent Consultants Certify the Revised DP	7	26-May-20	01-Jun-20	26-May-20	01-Jun-20	-177						
O2_G4290	Independent Consultants Issue the Certified Revised DP to the Employer	7	02-Jun-20	08-Jun-20	02-Jun-20	08-Jun-20	-177						
O2_G4300	Employer's Consent to Certified Revised DP	14	09-Jun-20	22-Jun-20	09-Jun-20	22-Jun-20	-177						



File Name: ORRC2_R3-3A 3M 2004a
 Layout: ORRC2 (3MRP) R2
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 ORRC2 (3M)_1, ORRC2 (3M)_2.
 Printed on: 07-May-20

Legend:
— Primary Baseline
— Remaining Work
— Critical Remaining Work
— Actual Work
◆ Baseline Milestone
▼ Start Milestone

**Contract No. EP/SP/86/15
 Organic Waste Treatment Facilities, Phase 2
 Initial Works Programme (with Design Enhancement)
 3 Month Rolling Programme**

PROGRESS REPORT APRIL 2020			
Date	Revision	Checked	Approv...
07-May-20	Progress up to 30 Apr 2020		

Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020						
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14	
O2_G4310	Employer's Consent - DP	0		22-Jun-20		22-Jun-20	-177							
Asset Management Plan (AMP)		201	14-Oct-19	01-May-20	27-Nov-19 A	01-May-20	-125							
O2_G4450	Independent Consultants Issue the Certified AMP to the Employer	7	14-Oct-19	20-Oct-19	27-Nov-19 A	02-Jan-20 A								
O2_G4460	Employer's Comments on the Certified AMP	14	21-Oct-19	03-Nov-19	03-Jan-20 A	23-Jan-20 A								
O2_G4470	Re-submit AMP to Independent Consultant as per Employer's Comments	7	04-Nov-19	10-Nov-19	24-Jan-20 A	10-Mar-20 A								
O2_G4480	Independent Consultants Certify the Revised AMP	7	04-Mar-20	11-Mar-20	11-Mar-20 A	19-Mar-20 A								
O2_G4490	Independent Consultants Issue the Certified Revised AMP to the Employer	7	11-Mar-20	18-Mar-20	20-Mar-20 A	27-Mar-20 A								
O2_G4500	Employer's Consent to Certified Revised AMP	14	18-Mar-20	01-Apr-20	28-Mar-20 A	01-May-20	-125							
O2_G4510	Employer's Consent - AMP	0		01-May-20		01-May-20	-125							
Environmental Management Plan (EMP)		201	14-Oct-19	01-May-20	21-Nov-19 A	01-May-20	-125							
O2_G4650	Independent Consultants Issue the Certified EMP to the Employer	7	14-Oct-19	20-Oct-19	21-Nov-19 A	02-Jan-20 A								
O2_G4660	Employer's Comments on the Certified EMP	14	21-Oct-19	03-Nov-19	03-Jan-20 A	23-Jan-20 A								
O2_G4670	Re-submit EMP to Independent Consultant as per Employer's Comments	7	04-Nov-19	10-Nov-19	24-Jan-20 A	04-Feb-20 A								
O2_G4680	Independent Consultants Certify the Revised EMP	7	03-Feb-20	09-Feb-20	05-Feb-20 A	25-Feb-20 A								
O2_G4690	Independent Consultants Issue the Certified Revised EMP to the Employer	7	10-Feb-20	16-Feb-20	26-Feb-20 A	18-Mar-20 A								
O2_G4700	Employer's Consent to Certified Revised EMP	14	01-Mar-20	14-Mar-20	19-Mar-20 A	01-May-20	-125							
O2_G4710	Employer's Consent - EMP	0		01-May-20		01-May-20	-125							
Quality Plan (QP)		271	09-Sep-19	05-Jun-20	21-Sep-19 A	05-Jun-20	-160							
O2_G4820	Independent Consultants Comments on QP	14	09-Sep-19	22-Sep-19	21-Sep-19 A	06-Jan-20 A								
O2_G4830	Re-submit QP to Independent Consultant for Certification	7	23-Sep-19	29-Sep-19	07-Jan-20 A	11-Jan-20 A								
O2_G4840	Independent Consultants Certify the QP	14	30-Sep-19	13-Oct-19	12-Jan-20 A	19-Mar-20 A								
O2_G4850	Independent Consultants Issue the Certified QP to the Employer	7	14-Oct-19	20-Oct-19	25-Jan-20 A	15-Apr-20 A								
O2_G4860	Employer's Comments on the Certified QP	14	02-Apr-20	15-Apr-20	16-Apr-20 A	01-May-20	-160							
O2_G4870	Re-submit QP to Independent Consultant as per Employer's Comments	7	02-May-20	08-May-20	02-May-20	08-May-20	-160							
O2_G4880	Independent Consultants Certify the Revised QP	7	09-May-20	15-May-20	09-May-20	15-May-20	-160							
O2_G4890	Independent Consultants Issue the Certified Revised QP to the Employer	7	16-May-20	22-May-20	16-May-20	22-May-20	-160							
O2_G4900	Employer's Consent to Certified Revised QP	14	23-May-20	05-Jun-20	23-May-20	05-Jun-20	-160							
O2_G4910	Employer's Consent - QP	0		05-Jun-20		05-Jun-20	-160							
Safety & Health Plan (SHP)		201	14-Oct-19	01-May-20	03-Dec-19 A	01-May-20	-125							
O2_G5050	Independent Consultants Issue the Certified SHP to the Employer	7	14-Oct-19	20-Oct-19	03-Dec-19 A	02-Jan-20 A								
O2_G5060	Employer's Comments on the Certified SHP	14	21-Oct-19	03-Nov-19	03-Jan-20 A	23-Jan-20 A								
O2_G5070	Re-submit SHP to Independent Consultant as per Employer's Comments	7	04-Nov-19	10-Nov-19	24-Jan-20 A	14-Feb-20 A								
O2_G5080	Independent Consultants Certify the Revised SHP	7	02-Feb-20	08-Feb-20	15-Feb-20 A	20-Feb-20 A								
O2_G5090	Independent Consultants Issue the Certified Revised SHP to the Employer	7	09-Feb-20	15-Feb-20	21-Feb-20 A	27-Feb-20 A								
O2_G5100	Employer's Consent to Certified Revised SHP	14	16-Feb-20	29-Feb-20	28-Feb-20 A	01-May-20	-125							
O2_G5110	Employer's Consent - SHP	0		01-May-20		01-May-20	-125							
Operation Plan (OP)		225	11-Nov-19	22-Jun-20	11-Nov-19 A	22-Jun-20	-177							
O2_G5220	Independent Consultants Comments on OP	14	11-Nov-19	24-Nov-19	11-Nov-19 A	11-Feb-20 A								
O2_G5230	Re-submit OP to Independent Consultant for Certification	7	01-Feb-20	07-Feb-20	12-Feb-20 A	23-Apr-20 A								
O2_G5240	Independent Consultants Certify the OP	14	02-Apr-20	15-Apr-20	24-Apr-20 A	27-Apr-20 A								
O2_G5250	Independent Consultants Issue the Certified OP to the Employer	7	16-Apr-20	22-Apr-20	28-Apr-20 A	04-May-20	-177							
O2_G5260	Employer's Comments on the Certified OP	14	05-May-20	18-May-20	05-May-20	18-May-20	-177							
O2_G5270	Re-submit OP to Independent Consultant as per Employer's Comments	7	19-May-20	25-May-20	19-May-20	25-May-20	-177							
O2_G5280	Independent Consultants Certify the Revised OP	7	26-May-20	01-Jun-20	26-May-20	01-Jun-20	-177							
O2_G5290	Independent Consultants Issue the Certified Revised OP to the Employer	7	02-Jun-20	08-Jun-20	02-Jun-20	08-Jun-20	-177							
O2_G5300	Employer's Consent to Certified Revised OP	14	09-Jun-20	22-Jun-20	09-Jun-20	22-Jun-20	-177							
O2_G5310	Employer's Consent - OP	0		22-Jun-20		22-Jun-20	-177							
Handback Plan (HP)		170	08-Mar-20	24-Aug-20	22-Jan-20 A	01-May-20	989							
O2_G2580	Prepare Handback Plan (Clause 7.1 & 7.8 of Specs Part A, w/in 12months from LOA)	0		10-Aug-20		22-Jan-20 A								
O2_G5410	Submit HP to IC for Checking	0		10-Aug-20		22-Jan-20 A								
O2_G5420	Independent Consultants Comments on HP	14	11-Aug-20	24-Aug-20	23-Jan-20 A	29-Jan-20 A								
O2_G5430	Re-submit HP to Independent Consultant for Certification	7	08-Mar-20	14-Mar-20	29-Jan-20 A	29-Jan-20 A								
O2_G5440	Independent Consultants Certify the HP	14	15-Mar-20	28-Mar-20	29-Jan-20 A	29-Jan-20 A								
O2_G5450	Independent Consultants Issue the Certified HP to the Employer	7	29-Mar-20	04-Apr-20	30-Jan-20 A	30-Jan-20 A								
O2_G5460	Employer's Comments on the Certified HP	14	05-Apr-20	18-Apr-20	31-Jan-20 A	05-Feb-20 A								



File Name: ORRC2_R3-3A 3M 2004a
 Layout: ORRC2 (3MRP) R2
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 ORRC2 (3M)_1, ORRC2 (3M)_2.
 Printed on: 07-May-20

■ Primary Baseline
■ Remaining Work
■ Critical Remaining Work
■ Actual Work
◆ Baseline Milestone
▼ Start Milestone

Contract No. EP/SP/86/15
Organic Waste Treatment Facilities, Phase 2
Initial Works Programme (with Design Enhancement)
3 Month Rolling Programme

PROGRESS REPORT APRIL 2020

Date	Revision	Checked	Approv...
07-May-20	Progress up to 30 Apr 2020		

Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020							
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14		
O2_G5470	Re-submit HP to Independent Consultant as per Employer's Comments	7	19-Apr-20	25-Apr-20	06-Feb-20 A	12-Feb-20 A									
O2_G5480	Independent Consultants Certify the Revised HP	7	26-Apr-20	02-May-20	13-Feb-20 A	20-Feb-20 A									
O2_G5490	Independent Consultants Issue the Certified Revised HP to the Employer	7	03-May-20	09-May-20	21-Feb-20 A	04-Mar-20 A									
O2_G5500	Employer's Consent to Certified Revised HP	14	10-May-20	23-May-20	04-Mar-20 A	01-May-20	989								
O2_G5510	Employer's Consent - HP	0		01-May-20		01-May-20	989								
Subcontractor Management Plan (ScMP)		257	23-Sep-19	05-Jun-20	24-Oct-19 A	05-Jun-20	-160								
O2_G5630	Re-submit ScMP to Independent Consultant for Certification	7	23-Sep-19	29-Sep-19	24-Oct-19 A	20-Jan-20 A									
O2_G5640	Independent Consultants Certify the ScMP	14	30-Sep-19	13-Oct-19	21-Jan-20 A	14-Feb-20 A									
O2_G5650	Independent Consultants Issue the Certified ScMP to the Employer	7	02-Feb-20	08-Feb-20	15-Feb-20 A	21-Feb-20 A									
O2_G5660	Employer's Comments on the Certified ScMP	14	09-Feb-20	22-Feb-20	22-Feb-20 A	01-May-20	-160								
O2_G5670	Re-submit ScMP to Independent Consultant as per Employer's Comments	7	02-May-20	08-May-20	02-May-20	08-May-20	-160								
O2_G5680	Independent Consultants Certify the Revised ScMP	7	09-May-20	15-May-20	09-May-20	15-May-20	-160								
O2_G5690	Independent Consultants Issue the Certified Revised ScMP to the Employer	7	16-May-20	22-May-20	16-May-20	22-May-20	-160								
O2_G5700	Employer's Consent to Certified Revised ScMP	14	23-May-20	05-Jun-20	23-May-20	05-Jun-20	-160								
O2_G5710	Employer's Consent - ScMP	0		05-Jun-20		05-Jun-20	-160								
Environmental Monitoring		800	05-Nov-19	25-May-22	05-Nov-19 A	25-May-22	9								
O2_G3160	Environmental Impact Monitoring	800	05-Nov-19	25-May-22	05-Nov-19 A	25-May-22	9								
Payment Milestone		53	01-May-20	22-Jun-20	01-May-20	22-Jun-20	-75								
MC1.1	MC1.1 - Substantial Completion of Temporary Office for Employer's Representative & Independent Consultant	0		01-May-20		01-May-20	-22								
MC1.3	MC1.3 Employer's consent granted on the draft Contractor's Plans	0		22-Jun-20		22-Jun-20	-177								
DESIGN		454	31-Oct-19	26-Jan-21	04-Oct-19 A	26-Jan-21	719								
Design Workshops		38	18-May-20	24-Jun-20	18-May-20	24-Jun-20	-193								
O2_D0110a	Hazard and Operability Review 1 (HAZOP 1)	2	18-May-20	19-May-20	18-May-20*	19-May-20	-193								
O2_D0120a	Construction Hazard Assessment and Identification Review 1 (CHAR 1)	1	20-May-20	20-May-20	20-May-20	20-May-20	-193								
O2_D0130a	Construction Hazard Assessment and Identification Review 2 (CHAR 2)	2	20-Jun-20	21-Jun-20	20-Jun-20	21-Jun-20	-193								
O2_D0140a	Hazard and Operability Review 2 (HAZOP 2)	3	22-Jun-20	24-Jun-20	22-Jun-20	24-Jun-20	-193								
Civil, ABWF and Landscape - Design Criteria Submission (COC 80 & Spec. A - 5.4.2)		29	31-Jan-20	28-Feb-20	04-Oct-19 A	15-May-20	-235								
O2_D1110	IC Certifies Civil Works Design Criteria Submission	15	31-Jan-20	14-Feb-20	04-Oct-19 A	08-May-20	-235								
O2_D1120	Civil Works Design Criteria Check Certificate- consent granted by the ER & Employer	14	15-Feb-20	28-Feb-20	19-Oct-19 A	15-May-20	-235								
E&M Design Loading Freeze (For Structural Cal. Purposes)		31	01-Mar-20	31-Mar-20	03-Dec-19 A	24-May-20	-214								
O2_D1200a	Frozen E&M Equipment Loading and General Layout (for Enhancement Works)	31	01-Mar-20	31-Mar-20	03-Dec-19 A	24-May-20	-214								
O2_D1210a	Provide Civil Guidance Drawings (for Enhancement Works)	31	01-Mar-20	31-Mar-20	03-Dec-19 A	24-May-20	-214								
Variation of the Latest Environmental Permit		285	29-Feb-20	26-Jan-21	14-Dec-19 A	26-Jan-21	240								
O2_V1020a	Identify & Evaluate Potential Environmental Impacts Associated with the Proposed Design Criteria	43	29-Feb-20	18-Apr-20	14-Dec-19 A	01-Feb-20 A									
O2_V1030a	Prepare and submit Draft Environmental Review Report (ERR) to EAD for Administrative Review	22	20-Apr-20	14-May-20	03-Feb-20 A	08-May-20	240								
O2_V1040a	Revision and finalisation of ERR	36	09-May-20	19-Jun-20	09-May-20	19-Jun-20	240								
O2_V1050a	VEP Submission	9	20-Jun-20	30-Jun-20	20-Jun-20	30-Jun-20	240								
O2_V1060a	VEP Approval	180	01-Jul-20	26-Jan-21	01-Jul-20	26-Jan-21	240								
Temporary Works Design		214	31-Oct-19	31-May-20	31-Oct-19 A	31-May-20	-78								
Reception Building		92	01-Mar-20	31-May-20	25-Dec-19 A	31-May-20	-219								
O2_D1410	Recep Bldg: IC Approval on ELS	30	01-Mar-20	30-Mar-20	25-Dec-19 A	01-May-20	-219								
O2_D1420	Recep Bldg: ER Approval on ELS	30	02-May-20	31-May-20	02-May-20	31-May-20	-219								
Granulation Building		214	31-Oct-19	31-May-20	31-Oct-19 A	31-May-20	-195								
O2_D1510	Granu Bldg: IC Approval on ELS	30	31-Oct-19	29-Nov-19	31-Oct-19 A	01-May-20	-195								
O2_D1520	Granu Bldg: ER Approval on ELS	30	02-May-20	31-May-20	02-May-20	31-May-20	-195								
AD Tanks & Fire Wall		183	31-Oct-19	30-Apr-20	31-Oct-19 A	01-May-20	-48								
O2_D1610	Fire Wall: IC Approval on ELS	30	31-Oct-19	29-Nov-19	31-Oct-19 A	20-Mar-20 A									
O2_D1620	Fire Wall: ER Approval on ELS	30	01-Apr-20	30-Apr-20	21-Mar-20 A	01-May-20	-48								
Design - General Building Plan / Facility Architectural		279	09-Jan-20	13-Oct-20	03-Dec-19 A	13-Oct-20	-76								
General Building Plan		155	09-Jan-20	11-Jun-20	03-Dec-19 A	11-Jun-20	-76								
O2_D2100a	Detailed Design submission on GBP (for Enhancement Works)	37	31-Jan-20	07-Mar-20	03-Dec-19 A	08-Jan-20 A									
O2_D2110	Completion of Detail Design Preparation (DDS) - General Building Plan	0		31-Jan-20		08-Jan-20 A									
O2_D2120	IC Certify the DDS in accordance with Design Checking Procedures	42	09-Jan-20	19-Feb-20	09-Jan-20 A	04-May-20	-112								
O2_D2130	Certification of DDS on General Plan	84	31-Jan-20	23-Apr-20	09-Jan-20 A	04-May-20	-112								



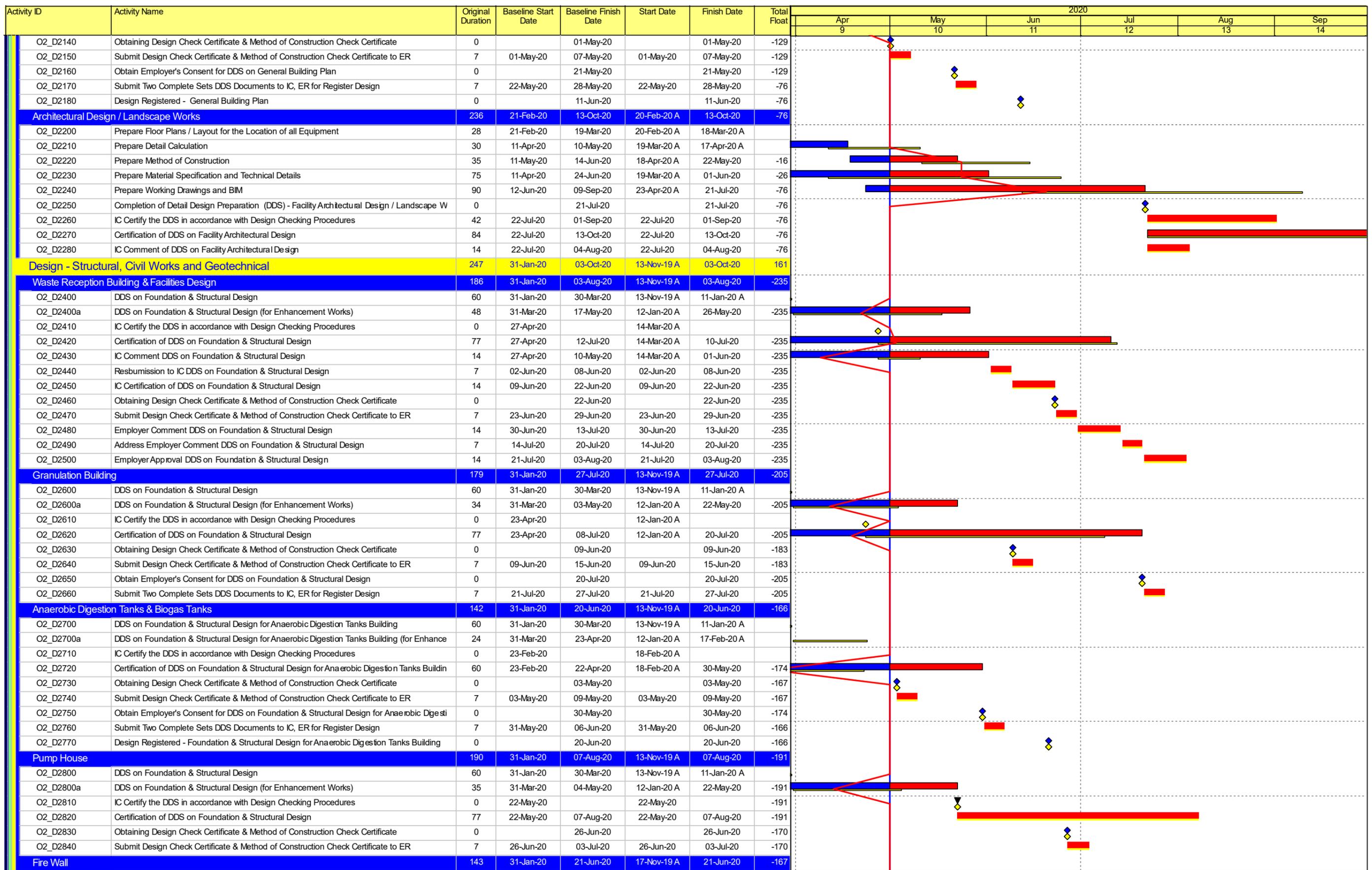
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Legend:
— Primary Baseline
— Remaining Work
— Critical Remaining Work
— Actual Work
◆ Baseline Milestone
▼ Start Milestone

◆ FINL

**Contract No. EP/SP/86/15
 Organic Waste Treatment Facilities, Phase 2
 Initial Works Programme (with Design Enhancement)
 3 Month Rolling Programme**

PROGRESS REPORT APRIL 2020			
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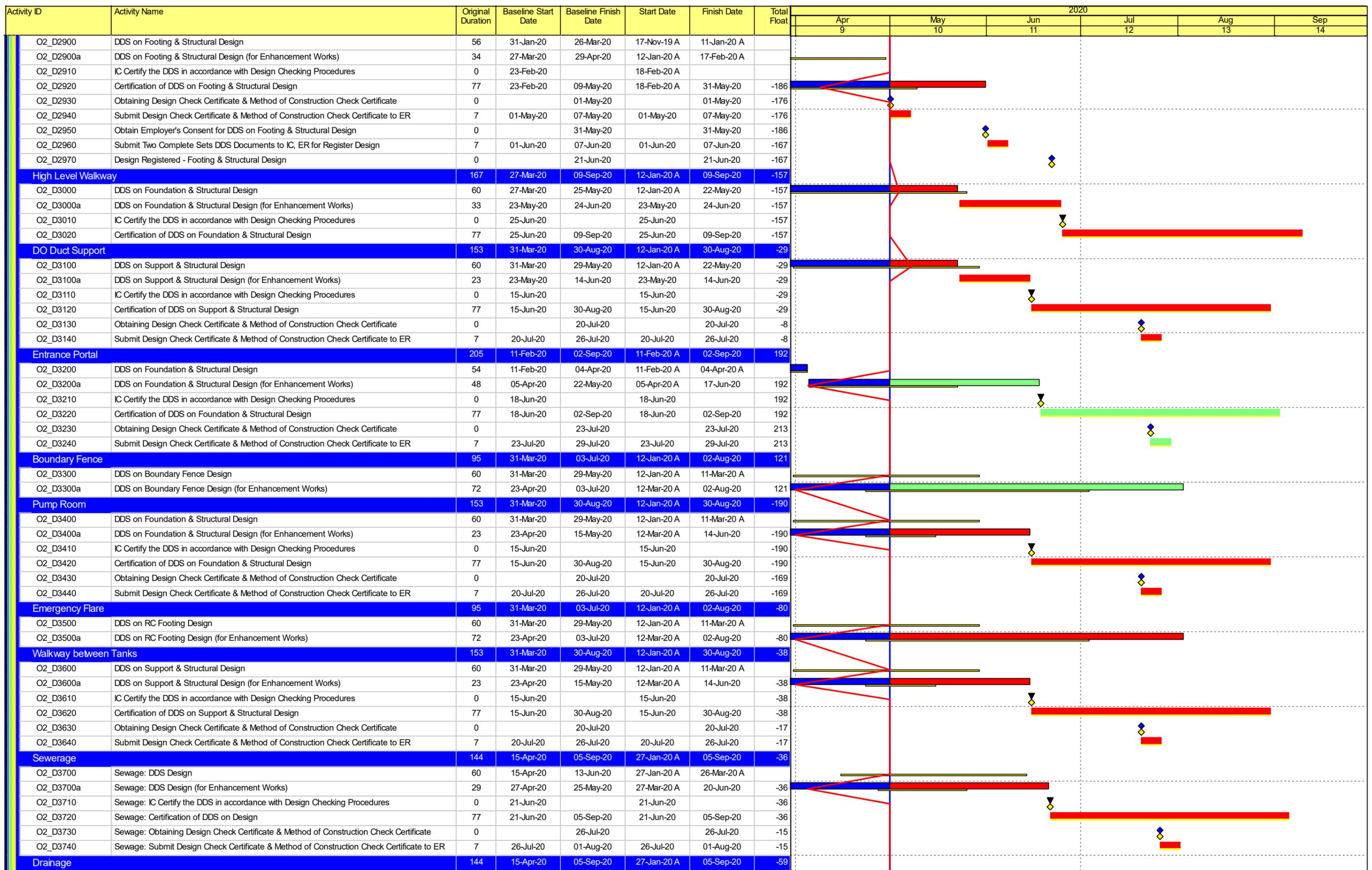


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Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020					
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14
O2_D3800	Drainage: DDS Design	60	15-Apr-20	13-Jun-20	27-Jan-20 A	26-Mar-20 A							
O2_D3800a	Drainage: DDS Design (for Enhancement Works)	29	27-Apr-20	25-May-20	27-Mar-20 A	20-Jun-20	-59						
O2_D3810	Drainage: IC Certify the DDS in accordance with Design Checking Procedures	0	21-Jun-20		21-Jun-20		-59						
O2_D3820	Drainage: Certification of DDS Design	77	21-Jun-20	05-Sep-20	21-Jun-20	05-Sep-20	-59						
O2_D3830	Drainage: Obtaining Design Check Certificate & Method of Construction Check Certificate	0		26-Jul-20		26-Jul-20	-38						
O2_D3840	Drainage: Submit Design Check Certificate & Method of Construction Check Certificate to ER	7	26-Jul-20	01-Aug-20	26-Jul-20	01-Aug-20	-38						
Ducting and Drawpits		172	15-Apr-20	03-Oct-20	27-Jan-20 A	03-Oct-20	-32						
O2_D3900	Ducting: DDS Design	60	15-Apr-20	13-Jun-20	27-Jan-20 A	26-Mar-20 A							
O2_D3900a	Ducting: DDS Design (for Enhancement Works)	57	27-Apr-20	22-Jun-20	27-Mar-20 A	18-Jul-20	-32						
O2_D3910	Ducting: IC Certify the DDS in accordance with Design Checking Procedures	0	19-Jul-20		19-Jul-20		-32						
O2_D3920	Ducting: Certification of DDS Design	77	19-Jul-20	03-Oct-20	19-Jul-20	03-Oct-20	-32						
External Watermain, Firemain and Hydrant		144	15-Apr-20	05-Sep-20	27-Jan-20 A	05-Sep-20	72						
O2_D4000	Watermain: DDS Design	60	15-Apr-20	13-Jun-20	27-Jan-20 A	26-Mar-20 A							
O2_D4000a	Watermain: DDS Design (for Enhancement Works)	29	27-Apr-20	25-May-20	27-Mar-20 A	20-Jun-20	72						
O2_D4010	Watermain: IC Certify the DDS in accordance with Design Checking Procedures	0	21-Jun-20		21-Jun-20		72						
O2_D4020	Watermain: Certification of DDS Design	77	21-Jun-20	05-Sep-20	21-Jun-20	05-Sep-20	72						
O2_D4030	Watermain: Obtaining Design Check Certificate & Method of Construction Check Certificate	0		26-Jul-20		26-Jul-20	93						
O2_D4040	Watermain: Submit Design Check Certificate & Method of Construction Check Certificate to E	7	26-Jul-20	01-Aug-20	26-Jul-20	01-Aug-20	93						
Roadwork		144	15-Apr-20	05-Sep-20	27-Jan-20 A	05-Sep-20	150						
O2_D4100	Roadwork: DDS Design	60	15-Apr-20	13-Jun-20	27-Jan-20 A	26-Mar-20 A							
O2_D4100a	Roadwork: DDS Design (for Enhancement Works)	29	27-Apr-20	25-May-20	27-Mar-20 A	20-Jun-20	150						
O2_D4110	Roadwork: IC Certify the DDS in accordance with Design Checking Procedures	0	21-Jun-20		21-Jun-20		150						
O2_D4120	Roadwork: Certification of DDS Design	77	21-Jun-20	05-Sep-20	21-Jun-20	05-Sep-20	150						
O2_D4130	Roadwork: Obtaining Design Check Certificate & Method of Construction Check Certificate	0		26-Jul-20		26-Jul-20	171						
O2_D4140	Roadwork: Submit Design Check Certificate & Method of Construction Check Certificate to E	7	26-Jul-20	01-Aug-20	26-Jul-20	01-Aug-20	171						
Weighbridge System Design		129	16-Apr-20	22-Aug-20	18-Mar-20 A	22-Aug-20	-3						
O2_D4200	DDS on Weighbridge system design	60	16-Apr-20	14-Jun-20	18-Mar-20 A	05-Jul-20	-3						
O2_D4200a	DDS on Weighbridge system design	6	06-Jul-20	11-Jul-20	06-Jul-20	11-Jul-20	-3						
O2_D4210	Approval of DDS from Independent Consultants	42	12-Jul-20	22-Aug-20	12-Jul-20	22-Aug-20	-3						
Geotechnical Works		180	31-Jan-20	28-Jul-20	09-Jan-20 A	28-Jul-20	158						
O2_D4300	DDS on Geotechnical Matters	60	31-Jan-20	30-Mar-20	09-Jan-20 A	08-Mar-20 A							
O2_D4300a	DDS on Geotechnical Matters (for Enhancement Works)	5	09-Apr-20	13-Apr-20	09-Mar-20 A	05-May-20	158						
O2_D4310	IC Certify the DDS in accordance with Design Checking Procedures	0	06-May-20		06-May-20		158						
O2_D4320	Certification of DDS on Piling & Structural Design for Geotechnical Matters	77	06-May-20	21-Jul-20	06-May-20	21-Jul-20	158						
O2_D4330	Obtaining Design Check Certificate & Method of Construction Check Certificate	0		10-Jun-20		10-Jun-20	179						
O2_D4340	Submit Design Check Certificate & Method of Construction Check Certificate to ER	7	10-Jun-20	16-Jun-20	10-Jun-20	16-Jun-20	179						
O2_D4350	Obtain Employer's Consent for DDS on Piling & Structural Design for Geotechnical Matters	0		21-Jul-20		21-Jul-20	158						
O2_D4360	Submit Two Complete Sets DDS Documents to IC, ER for Register Design	7	22-Jul-20	28-Jul-20	22-Jul-20	28-Jul-20	158						
External Facade		186	01-Feb-20	04-Aug-20	01-Feb-20 A	04-Aug-20	-12						
O2_D4400	DDS on External Facade Design	60	01-Feb-20	31-Mar-20	01-Feb-20 A	31-Mar-20 A							
O2_D4400a	DDS on External Facade Design (for Enhancement Works)	5	23-Apr-20	27-Apr-20	23-Apr-20 A	05-May-20	-12						
O2_D4410	IC Certify the DDS in accordance with Design Checking Procedures	0	06-May-20		06-May-20		-12						
O2_D4420	Certification of DDS on External Facade Design	91	06-May-20	04-Aug-20	06-May-20	04-Aug-20	-12						
O2_D4430	Obtaining Design Check Certificate & Method of Construction Check Certificate	0		17-Jun-20		17-Jun-20	16						
O2_D4440	Submit Design Check Certificate & Method of Construction Check Certificate to ER	7	17-Jun-20	23-Jun-20	17-Jun-20	23-Jun-20	16						
Design - E&M and Process System (Spec. 5.4.3)		241	31-Jan-20	27-Sep-20	03-Dec-19 A	27-Sep-20	24						
E&M Design Criteria Submission		119	31-Jan-20	28-May-20	03-Dec-19 A	24-Apr-20 A							
O2_D6032a	Prepare & Submit Further Information for Enhancement Works	28	31-Jan-20	27-Feb-20	03-Dec-19 A	30-Jan-20 A							
O2_D6034a	IC Review & Issue Design Criteria Check Certificate for Enhancement Works	14	01-Mar-20	14-Mar-20	31-Jan-20 A	18-Feb-20 A							
O2_D6036a	Prepare & Submit Further Information / Amendments to IC	7	15-Mar-20	21-Mar-20	19-Feb-20 A	23-Apr-20 A							
O2_D6038a	IC Review & Issue Design Criteria Check Certificate	14	08-Apr-20	21-Apr-20	13-Mar-20 A	24-Apr-20 A							
O2_D6040	Submit Design Criteria Check Certificate to Employer for Enhancement Works	7	22-May-20	28-May-20	24-Apr-20 A	24-Apr-20 A							
Waste Reception Building & Facilities (WRBF)		162	01-Mar-20	09-Aug-20	04-Feb-20 A	09-Aug-20	-219						
O2_D6100a	WRBF - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	90	01-Mar-20	29-May-20	04-Feb-20 A	24-May-20	-219						
O2_D6110	WRBF - IC Review & Comment on DDS & Method of Construction	14	25-May-20	07-Jun-20	25-May-20	07-Jun-20	-219						
O2_D6120	WRBF - Prepare & Submit Further Information / Amendments of DDS & Method of Construction	7	08-Jun-20	14-Jun-20	08-Jun-20	14-Jun-20	-219						



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Contract No. EP/SP/86/15
Organic Waste Treatment Facilities, Phase 2
Initial Works Programme (with Design Enhancement)
3 Month Rolling Programme

PROGRESS REPORT APRIL 2020			
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Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020					
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14
O2_D6130	WRBF - IC Review & Issue DDS Certificate	14	15-Jun-20	28-Jun-20	15-Jun-20	28-Jun-20	-219						
O2_D6140	WRBF - Submit DDS Certificate to Employer	7	29-Jun-20	05-Jul-20	29-Jun-20	05-Jul-20	-219						
O2_D6150	WRBF - Employer Review & Comment on DDS	14	06-Jul-20	19-Jul-20	06-Jul-20	19-Jul-20	-219						
O2_D6160	WRBF - Prepare & Submit Further Information / Amendments of DDS to Employer	7	20-Jul-20	26-Jul-20	20-Jul-20	26-Jul-20	-219						
O2_D6170	WRBF - Employer Grant Consent for DDS	14	27-Jul-20	09-Aug-20	27-Jul-20	09-Aug-20	-219						
Anaerobic Digestion System, Biogas Cleaning & Storage System(ADBS)		124	01-Mar-20	02-Jul-20	04-Feb-20 A	02-Jul-20	-187						
O2_D6200a	ADBS - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	60	01-Mar-20	29-Apr-20	04-Feb-20 A	03-Apr-20 A							
O2_D6210	ADBS - IC Review & Comment on DDS & Method of Construction	14	04-May-20	17-May-20	04-Apr-20 A	29-Apr-20 A							
O2_D6220	ADBS - Prepare & Submit Further Information / Amendments of DDS & Method of Constructic	7	18-May-20	24-May-20	30-Apr-20 A	07-May-20	-187						
O2_D6230	ADBS - IC Review & Issue DDS Certificate	14	08-May-20	21-May-20	08-May-20	21-May-20	-187						
O2_D6240	ADBS - Submit DDS Certificate to Employer	7	22-May-20	28-May-20	22-May-20	28-May-20	-187						
O2_D6250	ADBS - Employer Review & Comment on DDS	14	29-May-20	11-Jun-20	29-May-20	11-Jun-20	-187						
O2_D6260	ADBS - Prepare & Submit Further Information / Amendments of DDS to Employer	7	12-Jun-20	18-Jun-20	12-Jun-20	18-Jun-20	-187						
O2_D6270	ADBS - Employer Grant Consent for DDS	14	19-Jun-20	02-Jul-20	19-Jun-20	02-Jul-20	-187						
CHP & Electrical Generation + HV (CHP)		95	02-May-20	04-Aug-20	05-Mar-20 A	04-Aug-20	-206						
O2_D6300a	CHP - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	90	02-May-20	30-Jul-20	05-Mar-20 A	02-Jun-20	-206						
O2_D6310	CHP - IC Review & Comment on DDS & Method of Construction	14	03-Jun-20	16-Jun-20	03-Jun-20	16-Jun-20	-206						
O2_D6320	CHP - Prepare & Submit Further Information / Amendments of DDS & Method of Construction	7	17-Jun-20	23-Jun-20	17-Jun-20	23-Jun-20	-206						
O2_D6330	CHP - IC Review & Issue DDS Certificate	14	24-Jun-20	07-Jul-20	24-Jun-20	07-Jul-20	-206						
O2_D6340	CHP - Submit DDS Certificate to Employer	7	08-Jul-20	14-Jul-20	08-Jul-20	14-Jul-20	-206						
O2_D6350	CHP - Employer Review & Comment on DDS	14	15-Jul-20	28-Jul-20	15-Jul-20	28-Jul-20	-206						
O2_D6360	CHP - Prepare & Submit Further Information / Amendments of DDS to Employer	7	29-Jul-20	04-Aug-20	29-Jul-20	04-Aug-20	-206						
Granulation System (GS)		157	01-Mar-20	04-Aug-20	04-Feb-20 A	04-Aug-20	-113						
O2_D6400a	GS - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	120	01-Mar-20	28-Jun-20	04-Feb-20 A	02-Jun-20	-176						
O2_D6410	GS - IC Review & Comment on DDS & Method of Construction	14	03-Jun-20	16-Jun-20	03-Jun-20	16-Jun-20	-113						
O2_D6420	GS - Prepare & Submit Further Information / Amendments of DDS & Method of Construction!	7	17-Jun-20	23-Jun-20	17-Jun-20	23-Jun-20	-113						
O2_D6430	GS - IC Review & Issue DDS Certificate	14	24-Jun-20	07-Jul-20	24-Jun-20	07-Jul-20	-113						
O2_D6440	GS - Submit DDS Certificate to Employer	7	08-Jul-20	14-Jul-20	08-Jul-20	14-Jul-20	-113						
O2_D6450	GS - Employer Review & Comment on DDS	14	15-Jul-20	28-Jul-20	15-Jul-20	28-Jul-20	-113						
O2_D6460	GS - Prepare & Submit Further Information / Amendments of DDS to Employer	7	29-Jul-20	04-Aug-20	29-Jul-20	04-Aug-20	-113						
Waste Water Treatment Plant (WWTP)		156	01-Mar-20	03-Aug-20	04-Feb-20 A	03-Aug-20	-119						
O2_D6500a	WWTP - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	90	01-Mar-20	29-May-20	04-Feb-20 A	18-May-20	-143						
O2_D6510	WWTP - IC Review & Comment on DDS & Method of Construction	14	19-May-20	01-Jun-20	19-May-20	01-Jun-20	-119						
O2_D6520	WWTP - Prepare & Submit Further Information / Amendments of DDS & Method of Construct	7	02-Jun-20	08-Jun-20	02-Jun-20	08-Jun-20	-119						
O2_D6530	WWTP - IC Review & Issue DDS Certificate	14	09-Jun-20	22-Jun-20	09-Jun-20	22-Jun-20	-119						
O2_D6540	WWTP - Submit DDS Certificate to Employer	7	23-Jun-20	29-Jun-20	23-Jun-20	29-Jun-20	-119						
O2_D6550	WWTP - Employer Review & Comment on DDS	14	30-Jun-20	13-Jul-20	30-Jun-20	13-Jul-20	-119						
O2_D6560	WWTP - Prepare & Submit Further Information / Amendments of DDS to Employer	7	14-Jul-20	20-Jul-20	14-Jul-20	20-Jul-20	-119						
O2_D6570	WWTP - Employer Grant Consent for DDS	14	21-Jul-20	03-Aug-20	21-Jul-20	03-Aug-20	-119						
Centralized Air Pollution Control System (CAPC)		120	22-Apr-20	19-Aug-20	25-Mar-20 A	05-Aug-20	-87						
O2_D6600a	CAPC - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	120	22-Apr-20	19-Aug-20	25-Mar-20 A	22-Jul-20	-149						
O2_D6610	CAPC - IC Review & Comment on DDS & Method of Construction	14	23-Jul-20	05-Aug-20	23-Jul-20	05-Aug-20	-87						
Electrical Design (ELED)		120	08-May-20	04-Sep-20	20-Mar-20 A	31-Jul-20	-131						
O2_D6700a	ELED - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	120	08-May-20	04-Sep-20	20-Mar-20 A	17-Jul-20	-131						
O2_D6710	ELED - IC Review & Comment on DDS & Method of Construction	14	18-Jul-20	31-Jul-20	18-Jul-20	31-Jul-20	-131						
Control & Instrumentation (C&I)		120	04-May-20	31-Aug-20	04-May-20	31-Aug-20	-191						
O2_D6800a	C&I - Prepare & Submit DDS & Method of Construction to IC (Enhancement Works)	120	04-May-20	31-Aug-20	04-May-20	31-Aug-20	-191						
Vehicle Washing Plant (VWP)		117	01-May-20	25-Aug-20	02-Apr-20 A	25-Aug-20	12						
O2_D8100	VWP - Prepare & Submit DDS & Method of Construction to IC	90	01-May-20	29-Jul-20	02-Apr-20 A	30-Jun-20	12						
O2_D8110	VWP - IC Review & Comment on DDS & Method of Construction	28	01-Jul-20	28-Jul-20	01-Jul-20	28-Jul-20	12						
O2_D8120	VWP - Prepare & Submit Further Information / Amendments of DDS & Method of Constructioi	28	29-Jul-20	25-Aug-20	29-Jul-20	25-Aug-20	12						
Weightbridge (WB)		117	01-May-20	25-Aug-20	02-Apr-20 A	25-Aug-20	57						
O2_D8200	WB - Prepare & Submit DDS & Method of Construction to IC	90	01-May-20	29-Jul-20	02-Apr-20 A	30-Jun-20	57						
O2_D8210	WB - IC Review & Comment on DDS & Method of Construction	28	01-Jul-20	28-Jul-20	01-Jul-20	28-Jul-20	57						
O2_D8220	WB - Prepare & Submit Further Information / Amendments of DDS & Method of Construction	28	29-Jul-20	25-Aug-20	29-Jul-20	25-Aug-20	57						
Building Services (BS)		150	01-May-20	27-Sep-20	02-Apr-20 A	27-Sep-20	-28						



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Initial Works Programme (with Design Enhancement)
3 Month Rolling Programme

PROGRESS REPORT APRIL 2020			
Date	Revision	Checked	Approv...
07-May-20	Progress up to 30 Apr 2020		

Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020					
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14
Mechanical Ventilation & Air-Conditioning (MVAC)		120	01-May-20	28-Aug-20	01-May-20	28-Aug-20	-168						
O2_D7000	MVAC - Prepare & Submit DDS & Method of Construction to IC	120	01-May-20	28-Aug-20	01-May-20	28-Aug-20	-168						
Fire Services (FS)		103	01-May-20	11-Aug-20	06-Apr-20 A	11-Aug-20	-27						
O2_D7100	FS - Prepare & Submit DDS & Method of Construction to IC	90	01-May-20	29-Jul-20	06-Apr-20 A	14-Jul-20	-27						
O2_D7110	FS - IC Review & Comment on DDS & Method of Construction	28	15-Jul-20	11-Aug-20	15-Jul-20	11-Aug-20	-27						
Plumbing & Drainage (P&D)		90	30-Jun-20	27-Sep-20	30-Jun-20	27-Sep-20	-168						
O2_D7200	P&D - Prepare & Submit DDS & Method of Construction to IC	90	30-Jun-20	27-Sep-20	30-Jun-20	27-Sep-20	-168						
Electrical Services (ELE)		120	31-May-20	27-Sep-20	06-Apr-20 A	31-Aug-20	-37						
O2_D7300	ELE - Prepare & Submit DDS & Method of Construction to IC	120	31-May-20	27-Sep-20	06-Apr-20 A	31-Aug-20	-37						
Communication, Security, BMS & Others ELV System (C&S)		120	31-May-20	27-Sep-20	31-May-20	27-Sep-20	-28						
O2_D7400	C&S - Prepare & Submit DDS & Method of Construction to IC	120	31-May-20	27-Sep-20	31-May-20	27-Sep-20	-28						
Lifts		117	01-May-20	25-Aug-20	02-Apr-20 A	25-Aug-20	-110						
O2_D7500	LIFT - Prepare & Submit DDS & Method of Construction to IC	90	01-May-20	29-Jul-20	02-Apr-20 A	30-Jun-20	-110						
O2_D7510	LIFT - IC Review & Comment on DDS & Method of Construction	28	01-Jul-20	28-Jul-20	01-Jul-20	28-Jul-20	-110						
O2_D7520	LIFT - Prepare & Submit Further Information / Amendments of DDS & Method of Construction	28	29-Jul-20	25-Aug-20	29-Jul-20	25-Aug-20	-110						
Payment Milestone		0	02-Jul-20	02-Jul-20	02-Jul-20	02-Jul-20	927						
MC2.1.2	MC2.1.2 - Completion of Design of Anaerobic Digestion treatment system	0		02-Jul-20		02-Jul-20	927						
E&M EQUIPMENT PROCUREMENT & DELIVERY		360	03-Jul-20	27-Jun-21	03-Jul-20	27-Jun-21	-34						
O2_D9020	Fabrication & Delivery of Anaerobic Digestion Equipment	360	03-Jul-20	27-Jun-21	03-Jul-20	27-Jun-21	-187						
O2_D9025a	Fabrication & Delivery of Emergency Flare	280	03-Jul-20	08-Apr-21	03-Jul-20	08-Apr-21	46						
CIVIL , STRUCTURAL AND BUILDING WORKS		366	05-Nov-19	04-Nov-20	05-Nov-19 A	04-Nov-20	802						
Site Establishment Works		100	14-Feb-20	23-May-20	29-Nov-19 A	30-Mar-20 A							
O2_CS1190	Employer Representative Officer's & IC Accommodation	73	14-Feb-20	23-May-20	29-Nov-19 A	30-Mar-20 A							
O2_CS1200	Contractor's Accommodation	73	14-Feb-20	23-May-20	29-Nov-19 A	30-Mar-20 A							
O2_CS1210	Provision of Survey Equipment & Computer Facilities	49	02-Mar-20	27-Apr-20	03-Jan-20 A	30-Mar-20 A							
O2_CS1220	Completion of Site Establishment Works	0		30-Mar-20		30-Mar-20 A							
Demolition Works		181	05-Nov-19	02-Jul-20	05-Nov-19 A	25-Feb-20 A							
O2_CS1350	Demolition Works - Saling Livestock Waste Composting Plant	72	05-Nov-19	03-Feb-20	05-Nov-19 A	03-Jan-20 A							
O2_CS1360	Demolition works completed	0		29-Apr-20		03-Jan-20 A							
O2_CS1370a	Cable re-routing and pulling by CLP	47	25-Apr-20	02-Jul-20	03-Jan-20 A	18-Feb-20 A							
O2_CS1380a	Demolition of remaining CLP Substation	18	12-Mar-20	03-Apr-20	10-Feb-20 A	25-Feb-20 A							
Waste Reception Building and Facilities (incl Admin Area etc)		101	18-Mar-20	11-Aug-20	18-Mar-20 A	11-Aug-20	-170						
RC Works - Waste Reception Building (incl Vehicle Washing Area) (grid SA-SE/S1-S6)		101	18-Mar-20	11-Aug-20	18-Mar-20 A	11-Aug-20	-170						
O2_CS2010a	Sheet Piling	20	18-Mar-20	17-Apr-20	18-Mar-20 A	17-Apr-20 A							
O2_CS2020a	Excavation & ELS to +34mPD	45	18-Apr-20	20-Jun-20	18-Apr-20 A	20-Jun-20	-170						
O2_CS2030a	Excavation & ELS to +31mPD	36	22-Jun-20	11-Aug-20	22-Jun-20	11-Aug-20	-170						
Anaerobic Digestion Tanks (4 AD Tanks)		128	07-Mar-20	05-Sep-20	30-Dec-19 A	05-Sep-20	-40						
AD Tanks - Foundation & RC Works		128	07-Mar-20	05-Sep-20	30-Dec-19 A	05-Sep-20	-40						
O2_CS3010	Sheet Piling Stage 1 for 2 nos of Tanks	14	25-Apr-20	15-May-20	30-Dec-19 A	15-Jan-20 A							
O2_CS3020	Excavation for 2 nos of Tanks	20	07-Mar-20	30-Mar-20	16-Jan-20 A	11-Feb-20 A							
O2_CS3030	Install Soil Nail Anchor for 2 nos of Tanks	20	07-Mar-20	30-Mar-20	31-Jan-20 A	22-Feb-20 A							
O2_CS3040	Complete Excavation for 2 nos of Tanks	12	24-Mar-20	09-Apr-20	24-Feb-20 A	07-Mar-20 A							
O2_CS3050	Raft Footing for 2 nos of Tanks	30	02-May-20	12-Jun-20	04-Apr-20 A	12-Jun-20	-139						
O2_CS3060	Sheet Piling Stage 2 for Remaining 2 nos of Tanks	14	16-Jul-20	03-Aug-20	16-Jan-20 A	30-Jan-20 A							
O2_CS3070	Excavation for Remaining 2 nos of Tanks	20	25-Mar-20	25-Apr-20	25-Mar-20 A	21-May-20	-116						
O2_CS3080	Install Soil Nail Anchor for Remaining 2 nos of Tank	20	02-May-20	29-May-20	02-Apr-20 A	05-May-20	-116						
O2_CS3090	Complete Excavation for Remaining 2 nos of Tanks	12	07-May-20	22-May-20	07-May-20	22-May-20	-116						
O2_CS3100	Raft Footing for Remaining 2 nos of Tanks	30	13-Jun-20	25-Jul-20	13-Jun-20	25-Jul-20	-10						
O2_CS3140	1st Lift of Chamber Wall for Tanks (5m height)	30	13-Jun-20	25-Jul-20	13-Jun-20	25-Jul-20	-139						
O2_CS3150	2nd Lift of Chamber Wall for Tanks (5m height)	30	27-Jul-20	05-Sep-20	27-Jul-20	05-Sep-20	-139						
Pump House		90	27-Jun-20	28-Oct-20	27-Jun-20	28-Oct-20	-139						
O2_CS3700	Foundation + Excavation	90	27-Jun-20	28-Oct-20	27-Jun-20	28-Oct-20	-139						
Firewall		75	25-Jul-20	04-Nov-20	25-Jul-20	04-Nov-20	-10						
O2_CS3800	Complete Base Slab of Remaining 2 No. of AD Tanks	0		25-Jul-20		25-Jul-20	-10						
O2_CS3810	Fire Wall at the First 2 AD Tank	75	27-Jul-20	04-Nov-20	27-Jul-20	04-Nov-20	-10						



File Name: ORRC2_R3-3A 3M 2004a
 Layout: ORRC2 (3MRP) R2
 Task filter: TASK filters: ORRC2 (3M),
 ORRC2 (3M)_1, ORRC2 (3M)_2.
 Printed on: 07-May-20

■ Primary Baseline
■ Remaining Work
■ Critical Remaining Work
■ Actual Work
◆ Baseline Milestone
▼ Start Milestone

Contract No. EP/SP/86/15
Organic Waste Treatment Facilities, Phase 2
Initial Works Programme (with Design Enhancement)
3 Month Rolling Programme

PROGRESS REPORT APRIL 2020			
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07-May-20	Progress up to 30 Apr 2020		

Activity ID	Activity Name	Original Duration	Baseline Start Date	Baseline Finish Date	Start Date	Finish Date	Total Float	2020					
								Apr 9	May 10	Jun 11	Jul 12	Aug 13	Sep 14
Granulation Building & Facilities (incl. CAPC, WWTP, Dewatering System)		119	07-Mar-20	24-Aug-20	07-Mar-20 A	24-Aug-20	44						
Foundation		119	07-Mar-20	24-Aug-20	07-Mar-20 A	24-Aug-20	44						
O2_CS4020	Sheet Piling	25	07-Mar-20	07-Apr-20	07-Mar-20 A	07-Apr-20 A							
O2_CS4030	Stage 1 Excavation down to +35.3	53	09-Apr-20	27-Jun-20	09-Apr-20 A	27-Jun-20	-150						
O2_CS4040	Stage 2 Excavation down to +31.1	41	29-Jun-20	24-Aug-20	29-Jun-20	24-Aug-20	-150						
O2_CS4050	Install Soil Nail Anchor	48	18-Jun-20	24-Aug-20	18-Jun-20	24-Aug-20	-150						
O2_CS4130	Raft Footing NF~N/N1~N6	40	30-May-20	25-Jul-20	30-May-20	25-Jul-20	65						
Payment Milestone		0	02-May-20	02-May-20	04-Mar-20 A	04-Mar-20 A							
MC3.1.1	MC3.1.1 - Completion of site formation	0		02-May-20		04-Mar-20 A							
STATUTORY INSPECTION (FSD, WA, EMSD)		305	03-Jul-20	03-May-21	03-Jul-20	03-May-21	336						
Gas Safety - EMSD		180	03-Jul-20	29-Dec-20	03-Jul-20	29-Dec-20	-7						
O2_EM8450a	Application for Construction Approval of Notifiable Gas Installation (Form 104)	180	03-Jul-20	29-Dec-20	03-Jul-20	29-Dec-20	-7						
Environmental Protection - EPD		300	08-Jul-20	03-May-21	08-Jul-20	03-May-21	336						
O2_EM8760a	EPD Submission & Approval for Air Pollution Control - Genset	300	08-Jul-20	03-May-21	08-Jul-20	03-May-21	336						



File Name: ORRC2_R3-3A 3M 2004a
 Layout: ORRC2 (3MRP) R2
 Task filter: TASK filters: ORRC2 (3M),
 ORRC2 (3M)_1, ORRC2 (3M)_2.
 Printed on: 07-May-20

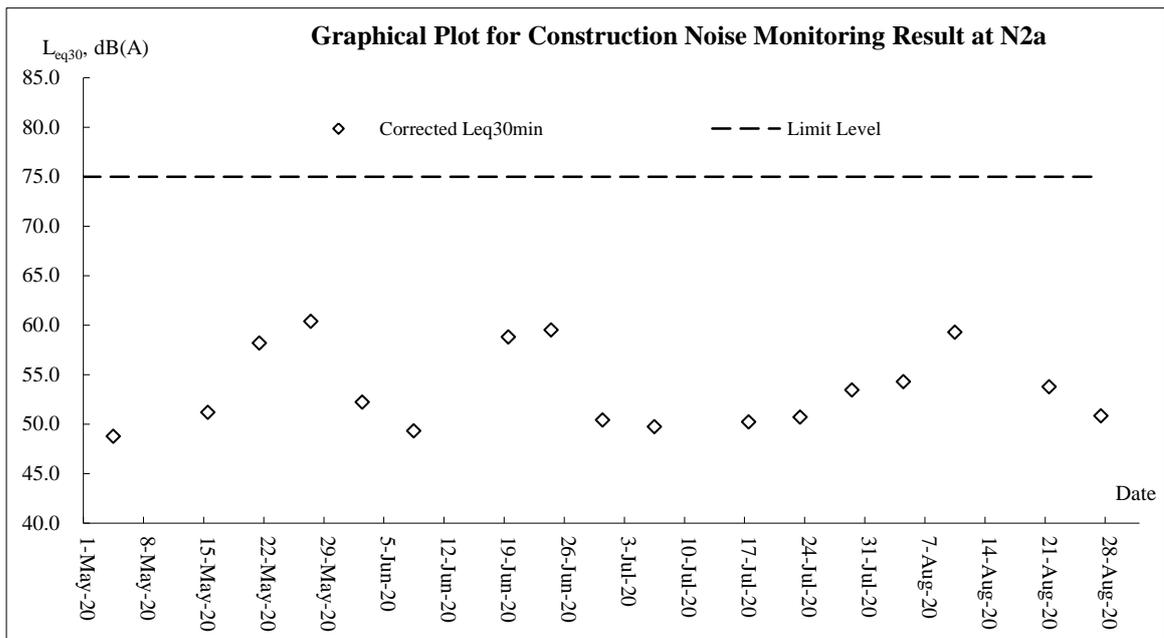
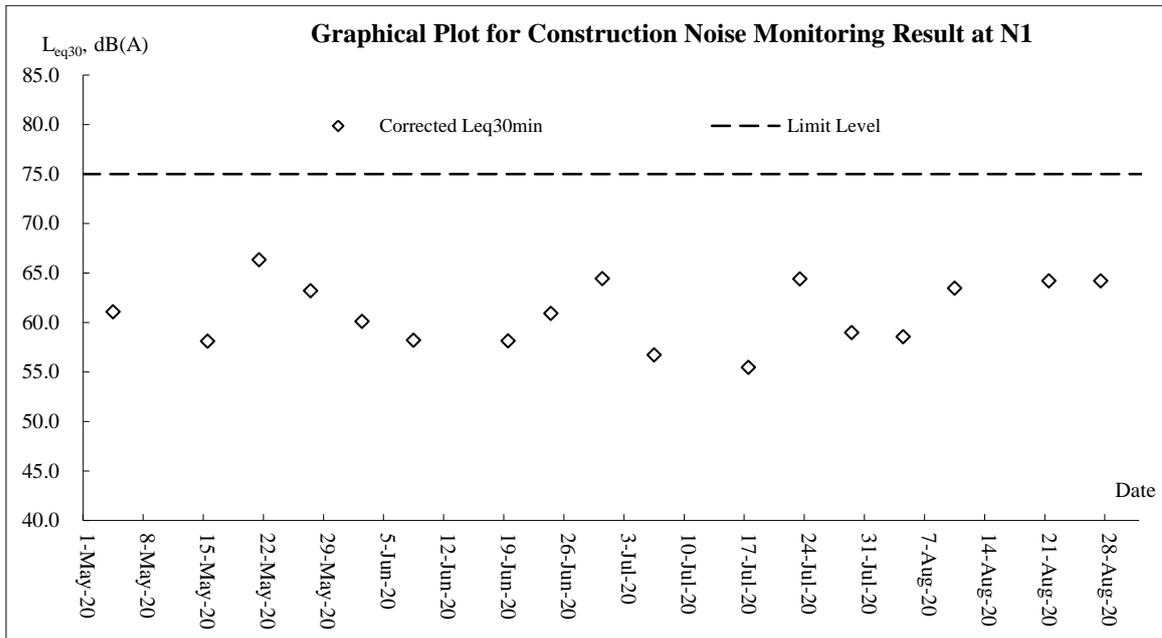
Contract No. EP/SP/86/15
Organic Waste Treatment Facilities, Phase 2
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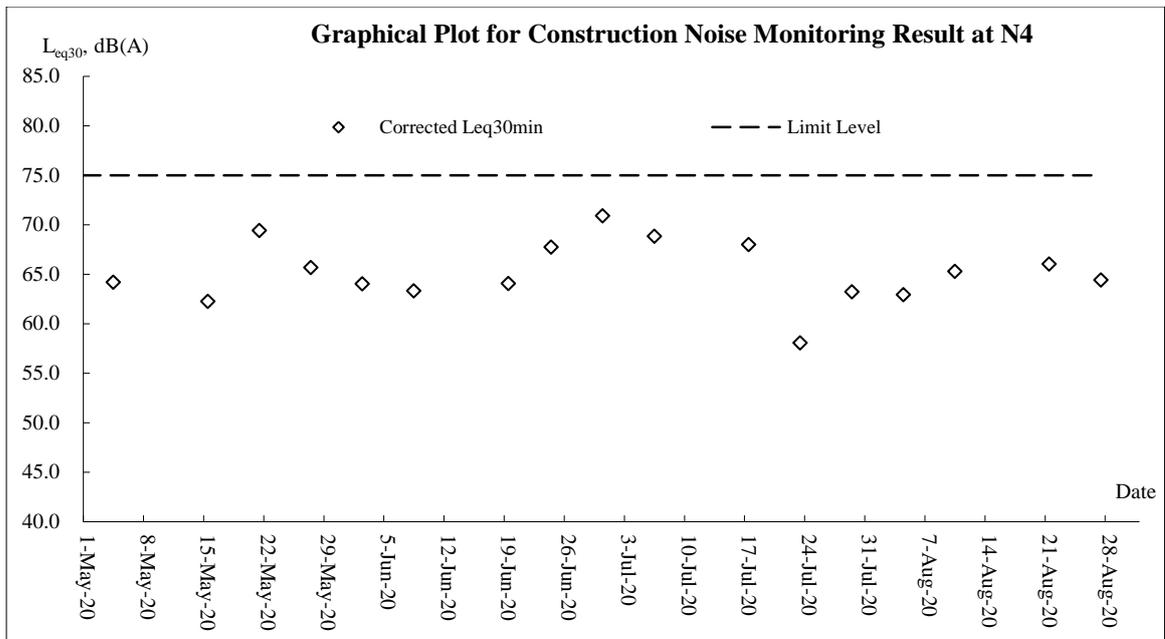
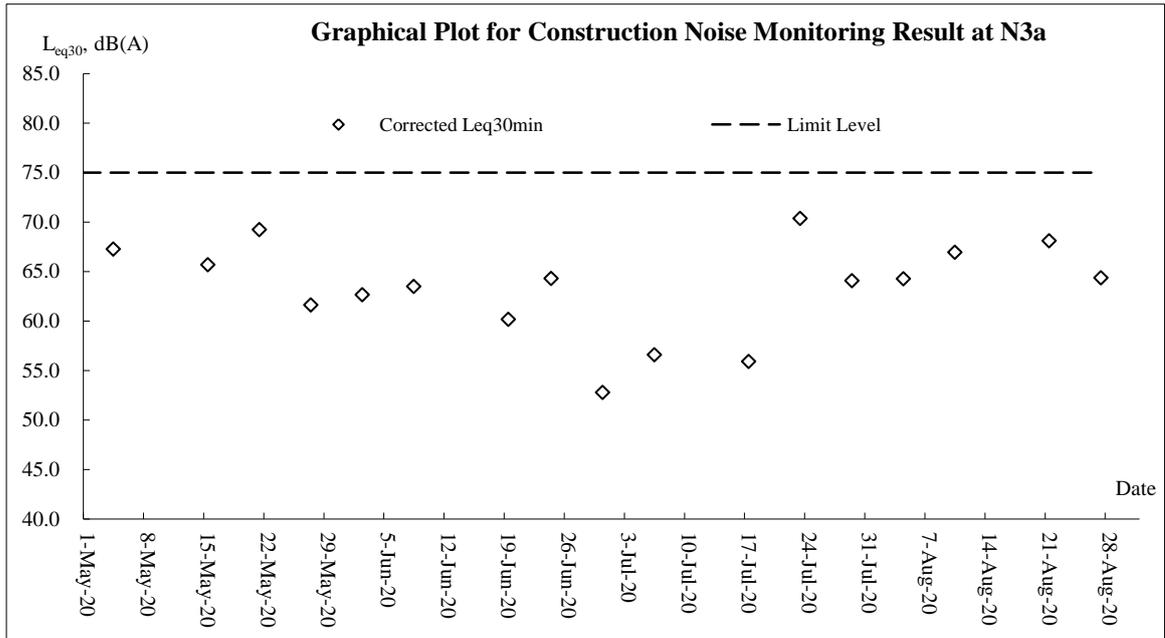
PROGRESS REPORT APRIL 2020			
Date	Revision	Checked	Approv...
07-May-20	Progress up to 30 Apr 2020		

Appendix E

Graphical Plots of Monitoring Results

Construction Noise





Appendix F

Meteorological Information

The weather of June 2020

Mainly attributing to the stronger than usual subtropical ridge over southern China, June 2020 was much hotter than usual in Hong Kong. The monthly mean minimum temperature was 27.8 degrees, 1.6 degrees above the normal figure and the highest on record for June. The monthly mean temperature and monthly mean maximum temperature were 29.6 degrees and 32.3 degrees respectively, both were the second highest on record for June. With a total of 18 hot nights, June 2020 was on par with July 1993 as one of the highest record of number of hot nights in a month. The 12 consecutive hot nights that started from 19 June also set a new record for June. Moreover, the first half of this year was exceptionally warm. The mean maximum temperature of 25.7 degrees and mean temperature of 23.0 degrees were both the highest on record for the same period. The mean minimum temperature of 21.1 degrees was the third highest on record for the same period. June 2020 was also marked by sunny weather with the monthly total sunshine duration amounting to 192.5 hours, about 32 percent above the normal of 146.1 hours. Despite the heavy rain episode on 6 – 8 June, the monthly total rainfall was only 397.2 millimetres, about 13 percent below the normal figure of 456.1 millimetres. The accumulated rainfall for the first half of the year of 963.4 millimetres was about 12 percent below the normal figure of 1096.9 millimetres.

The weather of July 2020

With a stronger than usual subtropical ridge persisting over southern China for most of the time in the month, July 2020 became the hottest month in Hong Kong since records began in 1884. The monthly mean maximum temperature of 33.3 degrees, monthly mean temperature of 30.2 degrees and monthly mean minimum temperature of 28.3 degrees were 1.9 degrees, 1.4 degrees and 1.5 degrees above their corresponding normals and all of them were the highest of the correspondingly monthly mean values on record. With a total of 21 hot nights, July 2020 was the month with the highest number of hot nights on record and the 11 consecutive hot nights that started from 5 July also set a new record for July. Moreover, there were 20 very hot days in the month, the highest number of very hot days in a month on record. With long spell sunny weather, the month was also much drier than usual. The total monthly rainfall was only 125.4 millimetres, about 33 percent of the normal figure of 376.5 millimetres. The accumulated rainfall for the first seven months of the year was 1088.8 millimetres, about 26 percent below the normal figure of 1473.3 millimetres.

The weather of August 2020

Mainly attributing to the warmer than normal sea surface temperature over the northern part of the South China Sea, August 2020 was hotter than usual in Hong Kong. The monthly mean temperature of 29.0 degrees was 0.4 degree above the normal figure of 28.6 degrees. Together with the extremely high temperature weather in June and July, Hong Kong experienced the hottest summer on record from June to August 2020. The mean temperature of 29.6 degrees, mean minimum temperature of 27.7 degrees and mean maximum temperature of 32.6 degrees for June to August 2020 were all the highest on record for the same period. There were 16 very hot days in August 2020, the highest number of very hot days on record for August. Moreover, from January to August, the annual number of very hot days in 2020 already reached 43, which is 32.8 days above the annual normal and broke the previous highest record of 38 days set in 2016. The number of hot nights up to August 2020 also reached 46, on par with the highest record in 2019. The monthly rainfall was 448.4 millimetres, about 4 percent above the normal figure of 432.2 millimetres. The accumulated rainfall recorded in the first eight months of the year was 1537.2 millimetres, about 19 percent below the normal figure of 1905.5 millimetres for the same period.

*The detailed meteorological data for each successive day can be referred to in the Monthly EM&A Reports (June 2020, July 2020 and August 2020).

Appendix G

Waste Flow Table

Name of Department : EPD
 Contract No: EP/SP/86/15

Monthly Summary Waste Flow Table for August 2020

Version: 0

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantity of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects (see Note 10)	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging (see Notes 4)	Plastics (see Notes 2 &4)	Chemical Waste	Others, eg. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)
sub-total of 2019	2.419	0.000	0.000	1.387	1.032	0.000	317.020	0.000	0.000	0.000	0.070
Jan-20	5.850	0.000	0.000	3.298	2.552	0.000	0.013	0.000	0.000	0.000	0.010
Feb-20	11.087	0.000	0.000	11.087	0.000	0.000	0.053	0.100	0.000	0.000	0.002
Mar-20	11.779	0.000	0.000	10.823	0.956	0.000	0.000	0.100	0.000	0.000	0.013
Apr-20	10.326	0.000	0.000	10.304	0.022	0.000	0.000	0.050	0.000	0.000	0.021
May-20	12.556	0.000	0.000	12.534	0.022	0.000	0.000	0.500	0.000	0.000	0.006
Jun-20	17.647	0.000	0.000	17.459	0.188	0.000	0.000	0.400	0.000	0.000	0.009
Sub total (since 2019)	71.664	0.000	0.000	66.892	4.772	0.000	317.086	1.150	0.000	0.000	0.131
Jul-20	9.345	0.000	0.000	9.263	0.082	0.000	0.000	0.000	0.000	0.000	0.006
Aug-20	2.481	0.000	0.000	2.434	0.047	0.000	0.000	0.000	0.000	0.000	0.011
Sep-20											
Oct-20											
Nov-20											
Dec-20											
Total (since 2019)	83.490	0.000	0.000	78.589	4.901	0.000	317.086	1.150	0.000	0.000	0.148

Appendix H

Environmental Mitigation Implementation Schedule (Extracted from EM&A Manual)

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
Air Quality Impact (Construction)									
3.8.1.1	2.4	<p>General Dust Control Measures</p> <p>Dust emissions could be suppressed by regular water spraying on site. In general, water spraying twice a day could reduce dust emission from active construction area by 50%. However, for the Project more frequent water spraying is proposed. Watering eight times per day, or once every 1.5 hours, is suggested at all active works areas in order to achieve a higher dust suppression efficiency of 87.5%.</p>	Within construction site / Duration of the construction phase	Contractor		✓			EIA Recommendation and Air Pollution Control (Construction Dust) Regulation
3.8.1.2	2.4	<p>Best Practice For Dust Control</p> <p>The relevant best practices for dust control as stipulated in the <i>Air Pollution Control (construction Dust) Regulation</i> should be adopted to further reduce the construction dust impacts of the Project. These best practices include:</p> <p><i>Good Site Management</i></p> <ul style="list-style-type: none"> ▪ Good site management is important to help reducing potential air quality impact down to an acceptable level. As a general guide, the Contractor should maintain a high standard of housekeeping to prevent emissions of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning. <p><i>Disturbed Parts of the Roads</i></p> <ul style="list-style-type: none"> ▪ Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or ▪ Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road 	Within construction site / Duration of the construction phase	Contractor		✓			EIA Recommendation and Air Pollution Control (Construction Dust) Regulation

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		surface wet. <i>Exposed Earth</i> <ul style="list-style-type: none"> Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seeding with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies. <i>Loading, Unloading or Transfer of Dusty Materials</i> <ul style="list-style-type: none"> All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet. <i>Debris Handling</i> <ul style="list-style-type: none"> Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides. Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped. <i>Transport of Dusty Materials</i> <ul style="list-style-type: none"> Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards. <i>Wheel washing</i> <ul style="list-style-type: none"> Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. <i>Use of vehicles</i> <ul style="list-style-type: none"> The speed of the trucks within the site should be controlled to about 10km/hour in order to reduce adverse dust impacts and secure the safe movement around the site. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely 							

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle. <i>Site hoarding</i> <ul style="list-style-type: none"> Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit. 							
Air Quality Impact (Operation)									
3.8.2	2.3	Odour patrol at site boundary of the Project	Site boundary / During operation stage (the need to continue the odour patrol after the end of the 2-year monitoring period would depend on the monitoring results and should be agreed with EPD)	OWTF Operator	✓		✓		EIAO-TM
3.8.2	2.4	Install gas cleaning equipment and stack on the CHP and odour treatment unit <ul style="list-style-type: none"> The preliminary design suggests the use of a two stage process involving either a biofilter or Ultraviolet Light (UV-C) together with ozone treatment as the first stage, and an activated carbon filter as the second stage for the odour treatment unit. It is recommended to install the UV-C and ozone treatment system with second stage active carbon filters as this has a lower footprint requirement than the biofilter option. However, the actual unit installed depends on the final design by the contractor in the design phase. The preliminary design incorporates a combination of thermal and catalytic treatment processes to remove pollutants from the exhaust gasses from the CHP. Both the odour treatment unit and the CHP emissions are suggested to be directed to a flue to aid the dispersion and minimise effects on ASRs. 	CHP and odour treatment unit	Design Consultant / OWTF Operator	✓		✓		EIA Recommendation
Hazard Risk Assessment (Operation)									

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
4.9	3.2	<p>The HA has assumed that the following “Good Practices” and “recommended design measures” for the safe operation of OWTF 2 shall be carried out as far as reasonably practicable:</p> <ul style="list-style-type: none"> ▪ The process plant building will be provided with adequate number of gas detectors distributed over the various areas of potential leak sources to provide adequate coverage. ▪ All electrical equipment inside the building will be classified in accordance with the electrical area classification requirements. No unclassified electrical equipment will be used during operations or maintenance. ▪ Reference can be made to Codes of Practice and guidance issued in Europe that applies to places where explosive atmospheres may occur (called ‘ATEX’ requirements). These are covered as part of the European Directive: the Explosive Atmospheres Directive (99/92/EC) and the UK regulations, Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR). Where potentially explosive atmospheres may occur in the workplace, the requirements include, identifying and classifying (zoning) areas where potentially explosive atmospheres may occur; avoiding ignition sources in zoned areas, in particular those from electrical and mechanical equipment; where necessary, identifying the entrances to zoned areas; providing appropriate anti-static clothing for employees; and before they come into operation, verifying the overall explosion protection safety of areas where explosive atmospheres may occur. ▪ All safety valves design shall take into account discharging any released fluid to a safe location, or stopping misdirection of fluid flows in order to avoid hazardous outcome. ▪ Safety markings and crash barriers will be provided to the aboveground piping, digesters and the gas holder near the entrance. ▪ Lightning protection installations will be installed following IEC 62305, BS EN 62305, AS/NZS 1768, NFPA 780 or equivalent standards. ▪ A 10m high boundary wall with fire resistance will be 	During design and operation phases	Design Consultant / OWTF Operator	✓		✓		EIAO & EIAO TM Annex 4

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		<p>provided in the vicinity of the digester tanks, gasholders and gas purification equipment to protect the equipment against external fires, and to provide some protection to external areas from the effects of fire/explosion.</p> <ul style="list-style-type: none"> ▪ Suitable fire extinguishers will be provided within the site. An External Water Spray System (EWSS) will be installed in appropriate areas, such as around the gasholders, gas purification, desulphurisation units, and digester areas. The facilities will also be equipped with fire and gas detection system and fire suppression system. Stringent procedures are implemented to prohibit smoking or naked flames to be used on-site. ▪ Fixed crash barriers will be provided in areas where process equipment is adjacent to the internal roadway to protect against vehicle collision. Adequate warning signage and lighting will also be provided and maximum speed limit will also be in place. 							
Noise Impact (Construction)									
5.9.1	4.2.7	<p>Good Site Practice Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:</p> <ul style="list-style-type: none"> ▪ only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works; ▪ machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; ▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs; ▪ mobile plant should be sited as far away from NSRs as possible; and ▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site 	Within construction site / During construction phase	Contractor		✓			EIAO, EIAO-TM and Noise Control Ordinance

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		construction activities.							
5.9.1	4.2.7	Selection of Quieter PME The recommended quieter PME adopted in the assessment were taken from the EPD's QPME Inventory and British Standard, namely <i>Noise Control on Construction and Open Sites, BS 5228: Part 1: 2009</i> . It should be noted that the silenced PME selected for assessment can be found in Hong Kong.	Within construction site / During construction phase	Contractor		✓			EIAO, EIAO-TM and Noise Control Ordinance
5.9.1	4.2.7	Use of Movable Noise Barriers Movable noise barriers can be very effective in screening noise from particular items of plant when constructing the Project. Noise barriers located along the active works area close to the noise generating component of a PME could produce at least 10 dB(A) screening for stationary plant and 5 dB(A) for mobile plant provided the direct line of sight between the PME and the NSRs is blocked.	Within construction site / During construction phase	Contractor		✓			EIAO, EIAO-TM and Noise Control Ordinance
5.9.1	4.2.7	Use of Noise Enclosure/ Acoustic Shed The use of noise enclosure or acoustic shed is to cover stationary PME such as air compressor and generator. With the adoption of the noise enclosure, the PME could be completely screened, and noise reduction of 15 dB(A) can be achieved according to the EIAO Guidance Note No.9/2010.	Within construction site / During construction phase	Contractor		✓			EIAO, EIAO-TM and Noise Control Ordinance
5.9.1	4.2.7	Use of Noise Insulating Fabric Noise insulating fabric can also be adopted for certain PME (e.g. pilling machine etc). The fabric should be lapped such that there are no openings or gaps on the joints. According to the approved Tsim Sha Tsui Station Northern Subway EIA report (AEIAR-127/2008), a noise reduction of 10 dB(A) can be achieved for the PME lapped with the noise insulating fabric.	Within construction site / During construction phase	Contractor		✓			EIAO, EIAO-TM and Noise Control Ordinance
Noise Impact (Operation)									
5.9.2	4.2.7	Fixed Plant Noise Specification of the maximum allowable sound power levels of the proposed fixed plants should be followed. The following noise reduction measures should be considered as far as practicable during operation: <ul style="list-style-type: none"> ▪ Choose quieter plant such as those which have been effectively silenced; 	Within construction site / During operation phase / Throughout operation phase	Design Consultant / Contractor	✓		✓		EIAO, EIAO-TM and Noise Control Ordinance

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		<ul style="list-style-type: none"> ▪ Include noise levels specification when ordering new plant (including chillier and E/M equipment); ▪ Locate fixed plant/louver away from any NSRs as far as practicable; ▪ Locate fixed plant in walled plant rooms or in specially designed enclosures; ▪ Locate noisy machines in a completely separate building; ▪ Install direct noise mitigation measures including silencers, acoustic louvers and acoustic enclosure where necessary; and ▪ Develop and implement a regularly scheduled plant maintenance programme so that equipment is properly operated and serviced in order to maintain a controlled level of noise. 							
Water Quality Impact (Construction)									
6.8.1.1	5.3	<p>Construction site runoff</p> <p>The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended to protect water quality and sensitive uses of the coastal area, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts:</p> <ul style="list-style-type: none"> ▪ At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system should be undertaken by the Contractor prior to the commencement of construction; ▪ Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of efficient silt 	Within construction site / Duration of the construction phase	Contractor		✓			ProPECC Note PN 1/94

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		<p>removal facilities should be based on the guidelines in Appendix A1 of ProPECC Note PN 1/94. Sizes may vary depending upon the flow rate. The detailed design of the sand/silt traps should be undertaken by the Contractors prior to the commencement of construction.</p> <ul style="list-style-type: none"> ▪ All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times. ▪ Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities. ▪ All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facility should be provided at construction site exit where practicable. Wash-water should have sand and silt settled out and removed regularly to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. ▪ Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system. ▪ Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and stormwater runoff being directed into 							

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		foul sewers. <ul style="list-style-type: none"> ▪ Precautions should be taken at any time of the year when rainstorms are likely. Actions should be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC Note PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes. ▪ Bentonite slurries used in piling or slurry walling should be reconditioned and reused wherever practicable. Temporary enclosed storage locations should be provided on-site for any unused bentonite that needs to be transported away after all the related construction activities are completed. The requirements in ProPECC Note PN 1/94 should be adhered to in the handling and disposal of bentonite slurries. 							
6.8.1.2	5.3	General construction activities Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used.	Within construction site / During construction phase	Contractor		✓			ProPECC Note PN 1/94
6.8.1.3	5.3	Excavation works The construction programme should be properly planned to minimise excavation works during the wet season (April to September), temporarily exposed slope/soil surfaces should be covered by a tarpaulin or other means, as far as practicable. Interception channels should be provided (e.g. along the crest/edge of the excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94.	Within construction site / During construction phase	Contractor		✓			ProPECC Note PN 1/94
6.8.1.4	5.3	Accidental spillage <ul style="list-style-type: none"> ▪ The Contractor should register as a chemical waste producer 	Within construction site / During construction phase	Contractor		✓			ProPECC Note PN 1/94 and Waste Disposal

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
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		<p>if chemical wastes are produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.</p> <ul style="list-style-type: none"> ▪ Maintenance of vehicles and equipment, involving activities with potential for leakage and spillage, should only be undertaken within areas appropriately equipped to control these discharges. ▪ Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. ▪ 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: <ul style="list-style-type: none"> – 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. 						Ordinance	
6.8.1.5	5.3	<p>Sewage effluent from construction workforce</p> <p>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be</p>	<p>Within construction site / During construction phase</p>	Contractor		✓			ProPECC Note PN 1/94

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
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		responsible for appropriate disposal and maintenance.							
Water Quality Impact (Operation)									
6.8.2.1	5.3	<p>Sewage effluent and sewerage impact</p> <p>In order to minimise the risk of exceeding capacity of the sewerage system, on-site underground storage of effluent is recommended for the OWTF 2, with a capacity of 6 hours of peak flow. Using the values presented in the preliminary design, the on-site storage required to buffer excess capacity would be equivalent to 30 m³. A below ground effluent retention tank would function to store effluent produced during peak periods when usage of the Sha Ling pumping station is high. Effluent stored during such periods could then be pumped out of the retention tank and discharged into the public sewer during off-peak times when capacity is sufficient.</p>	Within construction site / During design and operation phase	Design Consultant / OWTF Operator	✓		✓		EIA recommendations
6.8.2.2	5.3	<p>Wastewater generation from organic waste treatment processes</p> <p>Wastewater must be collected and diverted to the wastewater treatment plant (WWTP).</p> <p>An adequately sized WWTP with technologies such as membrane bioreactor, reverse osmosis or multi-phase separation process or system should be provided for the OWTF 2. Polluting parameters in the effluent should be in compliance with the requirements as specified in the TM-DSS.</p> <p><i>Leachate from the waste reception and composting process</i></p> <ul style="list-style-type: none"> A drainage system will be provided at the reception area connecting to the proposed onsite WWTP. The leachate would be treated in the WWTP and there would be no direct discharge of leachate. <p><i>Dewatering of the digestate from the separators</i></p> <ul style="list-style-type: none"> The wastewater generated from the dewatering of digestate from the digesters is expected to be around 229.18 m³/day and a peak flow of 5.31L/s. The on-site WWTP will deploy suitable treatment process in order to reduce the pollution level to an acceptable standard. The effluent shall be treated according to the TM-DSS standard before discharging to foul sewers. 	Within construction site / During design and operation phase	Design Consultant / OWTF Operator	✓		✓		TM-DSS, Water Pollution Control Ordinance

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		<p><i>Condensate from biogas drying, odour treatment and ventilation system</i></p> <ul style="list-style-type: none"> Condensate from biogas handling and wastewater from the odour treatment process would be collected and transferred to the WWTP. There is no direct discharge of wastewater to the sewer. <p><i>Washing of waste delivery trucks</i></p> <ul style="list-style-type: none"> Surplus wastewater generated from the vehicle washing facilities would be collected and transferred to the WWTP for further treatment before discharging to the foul sewer. <p><i>Untreated wastewater from wastewater treatment plant</i></p> <ul style="list-style-type: none"> Maintenance of the WWTP and its connection pipe work would be conducted regularly to confirm the condition of the holding tank and pipes. This will ensure early detection of any damage for repair or replacement. <p><i>Leakage of materials from WWTP</i></p> <ul style="list-style-type: none"> Regular scheduled maintenance of the WWTP will be carried out to confirm the condition of the facility and detect any damages at an early stage for repair or replacement. 							
6.8.2.3	5.3	<p>Contaminated stormwater runoff and accidental spillages</p> <p>Regular maintenance of plant facilities, as recommended in Section 6.8.2.2 of the EIA report, will be performed to confirm the condition of plant facilities and detect any damage for repair or replacement. Training should be provided to the employees on handling accidental spillage, so that in such cases, actions can be carried out quickly to avoid runoff to nearby streams/drains.</p>	Within construction site / During operation phase / Throughout operation phase	OWTF Operator			✓		TM-DSS; Water Pollution Control Ordinance
Waste Management Implications (Construction)									
7.6.1.1	6.3	<p>Good Site Practices</p> <p>Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> Obtain the relevant waste disposal permits from appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and subsidiary Regulations and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); 	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor			✓		Waste Disposal Ordinance; Regulation and the Land (Miscellaneous Provisions) Ordinance;

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		<ul style="list-style-type: none"> ▪ Provide staff training for proper waste management and chemical handling procedures; ▪ Provide sufficient waste disposal points and regular waste collection; ▪ Provide appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; ▪ Carry out regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; ▪ Separate chemical wastes for special handling and disposal to licensed facilities for treatment; and ▪ Employ licensed waste collectors to collect waste. 							Waste Disposal (Chemical Wastes) (General) Regulation; Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site
7.6.1.2	6.3	<p>Waste Reduction Measures</p> <p>Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> ▪ Design foundation works to minimise the amount of excavated material to be generated; ▪ Provide training on the importance of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; ▪ Sort demolition debris and excavated materials from demolition works to recover reusable/recyclable portions ▪ Segregation and storage of different types of waste in different containers or skips to enhance reuse or recycling of materials and their proper disposal ▪ Encourage collection of recyclable waste such as waste paper and aluminium cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force ▪ Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste 	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor	✓	✓			Waste Disposal Ordinance
7.6.1.3	6.3	<p>Excavated and C&D Materials</p> <p>In order to minimise impacts resulting from collection and transportation of C&D material for off-site disposal, the</p>	Project construction site / Throughout construction stage / Until completion	Contractor	✓	✓			Waste Disposal Ordinance ; DEVB Technical

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		<p>excavated materials should be reused on-site as fill material as backfilling material and for landscaping works far as practicable. Other mitigation requirements are:</p> <ul style="list-style-type: none"> ▪ A Waste Management Plan (WMP), which becomes part of the Environmental Management Plan (EMP), should be prepared in accordance with ETWB TC(W) No.19/2005; ▪ A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) should be adopted for easy tracking; and ▪ In order to monitor the disposal of excavated and non-inert C&D material at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to DEVB TC(W) No. 6/2010). 	of all construction activities					<p>Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition Materials;</p> <p>Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site</p>	
7.6.1.4	6.3	<p>Chemical Waste</p> <p>Should chemical wastes be produced at the construction site, the Contractor would be required to register with 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, or corrosive). The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the CWTC in Tsing Yi, or any other licensed facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p>	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor		✓			<p>Code of Practice on the Packaging Labelling and Storage of Chemical Wastes;</p> <p>Waste Disposal (Chemical Waste) (General) Regulation</p>
7.6.1.5	6.3	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separated from excavated and non-inert C&D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	Project construction site / Throughout construction stage / Until completion of all construction activities	Contractor		✓			<p>Waste Disposal Ordinance and Public Health and Municipal Services Ordinance - Public Cleansing and Prevention of Nuisances</p>

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Waste Management Implications (Operation)									
7.6.2.1	6.3	<p>Good site practices</p> <p>Adoption of the following good operational practices should be recommended to minimise waste management impacts:</p> <ul style="list-style-type: none"> ▪ Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation and the Land (Miscellaneous Provision) Ordinance (Cap. 28); ▪ Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; ▪ Use of a waste haulier licensed to collect specific category of waste; ▪ A trip-ticket system should be included as one of the contractual requirements and implemented by the Environmental Team to monitor the disposal of solid wastes at public filling facilities and landfills, and to control fly tipping. Reference should be made to DEVB TC(W) No. 6/2010. ▪ Training of site personnel in proper waste management and chemical waste handling procedures; ▪ Separation of chemical wastes for special handling and appropriate treatment at a licensed facility; ▪ Routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors; ▪ Provision of sufficient waste disposal points and regular collection for disposal; ▪ Adoption of appropriate measures to minimise windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers; and, ▪ Implementation of a recording system for the amount of 	Construction site / On a regular basis / Throughout operation stage	OWTF Operator			✓		Regulation Waste Disposal Ordinance; Waste Disposal (Chemical Waste) (General); Regulation and the Land (Miscellaneous Provision) Ordinance; DEVB Technical Circular (Works) No. 6/2010.

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		wastes generated, recycled and disposed of (including the disposal sites).							
7.6.2.2	6.3	<p>Waste reduction measures</p> <p>Adoption of the following good operational practices should be recommended to ensure waste reduction:</p> <ul style="list-style-type: none"> ▪ 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, plastic bottles and packaging material (e.g. carton boxes) and office paper by individual collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force; and ▪ Any unused chemicals or those with remaining functional capacity should be reused as far as practicable. 	Construction site / On a regular basis / Throughout operation stage	OWTF Operator			✓		Waste Disposal Ordinance; Waste Disposal (Chemical Waste) (General); Regulation and the Land (Miscellaneous Provision) Ordinance
7.6.2.3	6.3	<p>Waste generated from pre-treatment process</p> <p>Wastes generated from pre-treatment process should be recycled as far as possible. Wastes generated from pre-treatment process should also be separated from any chemical waste and stored in covered skips. The recyclables should be collected by licensed collectors, while the rest of the waste should be removed from the site on a daily basis to minimise odour, pest and litter impacts. Open burning must be strictly prohibited.</p>	Pre-treatment process / Throughout operation stage	OWTF Operator			✓		Waste Disposal (Chemical Waste) (General)
7.6.2.4	6.3	<p>Chemical Waste</p> <ul style="list-style-type: none"> ▪ Chemical waste generated from machinery maintenance and servicing should be managed in accordance with the Code of Practice on the Packaging, Labelling and storage of Chemical Wastes under the provisions of Waste Disposal (Chemical Waste) (General) Regulation. The chemical waste should be collected by drum-type containers and, when transported off-site, removed by licensed chemical waste contractors. Alternatively, some of the chemical waste may be retained on-site for re-use by the Project in the manufacture of biogas or other products, subject to their composition being confirmed as suitable for such application. 	Construction site Throughout operation stage	OWTF Operator			✓		Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation

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		<ul style="list-style-type: none"> Plant / equipment maintenance schedules should be planned in order to minimise the generation of chemical waste. Non-recyclable chemical wastes and lubricants should be disposed of at appropriate facilities, such as CWTC. Copies or counterfoils from collection receipts issued by the licensed waste collector should be kept for recording purpose. Recyclable chemical waste will be transported off-site for treatment by a licensed collector. The Contractor will need to register with EPD as a chemical waste producer. 							
7.6.2.5	6.3	<p>General Refuse</p> <ul style="list-style-type: none"> Waste generated in site offices should be reduced through segregation and collection of recyclables. To promote the recycling of wastes such as used paper, aluminium cans and plastic bottles, it is recommended that recycling bins should be clearly labelled and placed at locations with easy access. For the collection of recyclable materials, they should be collected by licensed collectors. General refuse, other than segregated recyclable wastes, should be separated from any chemical waste and stored in covered skips. The general refuse should be removed from the site on a daily basis to minimise odour, pest and litter impacts. Also, open burning of refuse must be strictly prohibited. 	Construction site / On a regular basis / Throughout operation stage	OWTF Operator			✓		Waste Disposal Ordinance
Ecological Impact (Construction)									
8.7	7.3	For precautionary purposes and to further ensure that no wild flora species of conservation interest will be affected, prior to commencement of any construction works, it is recommended to conduct a detailed vegetation survey as baseline monitoring to update the exact locations, number and condition of individuals of <i>Aquilaria sinensis</i> and any other floral species of conservation interest within the Project Area. A Vegetation Survey Report summarizing the findings and recommendations of the detailed vegetation survey should be prepared and submitted to AFCD for approval no later than one month prior to commencement of construction works.	Before Project commencement	OWTF Operator	✓				EIAO-TM
8.7	7.3	During construction phase, erection of a temporary protective	Throughout construction	OWTF Operator			✓		EIAO-TM

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		fence along the plantation area where trees and vegetation, including those of conservation concern identified under the detailed vegetation survey, would be retained within the Project Area is recommended for precautionary purposes to avoid any potential impact from construction activities such as vehicle movement and materials storage. Establishment of the protective fence could also raise the awareness of personnel to be present and protection of the plants. While the protective fence should be properly maintained, monitoring of individuals of <i>Aquilaria sinensis</i> and any other floral species of conservation interest identified in the detailed vegetation survey during construction phase on a monthly basis should be conducted to make sure that they are not affected by the construction works of the Project.	stage						
Ecological Impact (Operation)									
No mitigation measure is required.									
Landscape and Visual Impact (Construction)									
Table 10.7 (CP1)	Table 8.1 (CP1)	<p>Preservation of Existing Vegetation</p> <p>The development proposals would avoid disturbance to the existing trees as far as practicable within the confines of the development site. A preliminary tree survey has been undertaken to establish the existing resources. A tree survey review with formal tree removal application will be submitted to the relevant government departments for approval in accordance with ETWB TC(W) 03/2006 Tree Preservation, during the detailed design phase of the Project. Based on the preliminary findings it would be possible to retain 441 of the existing trees. If possible, all trees which are not in conflict with the proposals would be retained and shall be protected through the means of fencing, where appropriate, to prevent potential damage to tree canopies and root zones from vehicles and materials storage. Specifications for the protection of existing trees will be circulated to the relevant government authorities for approval together with the formal tree removal application.</p>	Construction site / Throughout construction stage / Until completion of all construction activities	Contractor	✓	✓			Technical Circular (Works) No. 3/2006
Table 10.7 (CP2)	Table 8.1 (CP2)	<p>Control of site construction activities</p> <ul style="list-style-type: none"> Storage of materials should be carefully arranged to minimise potential landscape and visual impact. 	Construction site / Throughout construction stage / Until completion	Contractor	✓	✓			EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		<ul style="list-style-type: none"> ▪ The location and appearance of site accommodation should be carefully designed to minimise potential landscape and visual impact. ▪ Site lighting should be carefully designed to prevent light spillage, ▪ Extent of the works area and construction period should be minimised as far as practicable. ▪ Screen hoarding with compatible design to blend into the surrounding natural environment should be considered. ▪ Temporary works areas should be reinstated at the earliest possible opportunity. 	of all construction activities						
Table 10.7 (CP3)	Table 8.1 (CP3)	<p>Transplantation of existing trees</p> <p>Under current proposal, no tree is recommended to be transplanted since the trees in conflict with the proposed works are not suitable to be transplanted. However, should transplantation be proposed in the detailed design stage after an update tree survey, the recommended final recipient sites should be adjacent to their current locations. Enough time should be reserved for tree transplantation works to increase the survival rate of the transplanting trees. To ensure the survival of transplanted trees, protection work should be considered. The tree transplantation proposal will be submitted to relevant authorities for approval together with the formal tree removal application.</p>	Construction site / Throughout construction stage / Until completion of all construction activities	Contractor	✓	✓			Technical Circular (Works) No. 3/2006
Landscape and Visual Impact (Operation)									
Table 10.8 (OP1)	Table 8.2 (OP1)	<p>Design of the Proposed OWTF</p> <p>OWTF will incorporate design features as part of design mitigation measures including</p> <ul style="list-style-type: none"> ▪ Integrated design approach - the location of OWTF should be within the existing Livestock Waste Composting Plant, as far as technically feasible. The location and orientation of the OWTF should be away from landscape and visually sensitive areas such as ponds and woodlands. ▪ Building massing – the proposed use of simple responsive design includes having specific height profile requirement 	Construction site / During design stage	Design Consultant / OWTF Operator	✓				EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		<p>such as, single-storey, lower than the adjacent building structures, and avoiding large built structure for supporting facilities to reduce the intrusion of mass in the rural areas.</p> <ul style="list-style-type: none"> ▪ Treatment of built structures – the structural design should seek to reduce the apparent visual mass of the facilities further through the use of natural materials such as wooden frames or other sustainable materials such as recycled plastics. ▪ Responsive building finishes – Natural tones should be considered for the colour palette for proposed structures. Non-reflective finishes are recommended on the outward facing building facades to reduce glare effect. ▪ Responsive lighting design – Aesthetic design of architectural and lighting with following glare design measures: <ul style="list-style-type: none"> – Directional and full cut off lighting is recommended within the boundaries of OWTF to minimise light spillage to the surroundings; – Minimise geographical spread of lighting, only applying for safety at the key access points and staircases; and <p>Limited lighting intensity to meet the minimum safety and operation requirement.</p>							
Table 10.8 (OP2)	Table 8.2 (OP2)	<p>Amenity / Compensatory Planting</p> <p>Tree retention within the works area is considered to be important. New tree plantings will be concentrated in the proposed amenity areas along the boundaries of the site and along the exterior of OWTF buildings. Although a preliminary planting proposal is not yet available at the moment of producing this EIA Report, anticipated new tree planting within the Project site should be able to fully compensate for the loss of 14 trees proposed to be felled in terms of both quantity and quality. 441 existing trees will be retained through preserving them at their current locations. Establishment of newly planted trees is expected. Trees with high amenity value will be placed along the access routes to provide shade and soften the hard structures of OWTF buildings. Amenity plantings will utilise native tree species found on existing neighbouring slopes or</p>	Construction site / during design and operation stage	Design Consultant / OWTF Operator	✓		✓		Technical Circular (Works) Nos. 7/2002 and 3/2006

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Location / Duration of measures / Timing of completion of measures	Implementation Agent	Implementation Stage ¹				Relevant Legislation & Guidelines
					Des	Con	Op	Dec	
		woodland areas to improve the ecological connectivity between existing habitats and create a coherent landscape network. Tree species with aggressive roots should be avoided to prevent damage to OWTF buildings and structures. Trees with high or moderate amenity value and low to medium maintenance should be considered as part of landscape resource enhancement. Recommended tree species include <i>Celtis sinensis</i> and <i>Liquidambar formosana</i> . These proposals will be subjected to review at detail design stage of the Project.							
Table 10.8 (OP3)	Table 8.2 (OP3)	Treatment of Slopes In accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment for Slopes", these engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a natural appearance, blending into the natural landscape. Whip-sized plantings are preferred on the face of soil cut slopes, at the crest and toe of the slope and within berm planters. These smaller, younger plants can adapt to their new growing conditions quicker than larger sized stock and establish a naturalistic effect rapidly. Recommended tree species include <i>Mallotus paniculatus</i> , <i>Broussonetia papyrifera</i> and <i>Alangium chinense</i> .	Construction site / during design and operation stage	Design Consultant / OWTF Operator	✓		✓		GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment for Slopes"
Table 10.8 (OP4)	Table 8.2 (OP4)	Amenity enhancement Rooftop greening and vertical greening to mitigate the visual impact of taller structures can soften the façade of OWTF structures. Frameworks utilised for vertical greening should appear naturalistic.	Construction site / during design and operation stage	Design Consultant / OWTF Operator	✓		✓		Technical Circular (Works) No. 7/2002

Remarks:

1. Des – Design Stage, C – Construction Stage, O – Operation, Dec - Decommissioning