

香港電燈有限公司
The Hongkong Electric Co., Ltd.



Re-provision of Open Cycle Gas Turbines at Lamma Power Station

Decommissioning/ Demolition & Construction Phases

Monthly Environmental Monitoring & Audit Report

December 2023

香港電燈有限公司
The Hongkong Electric Co., Ltd.



ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499

ENVIRONMENTAL PERMIT NO. EP-600/2022

**RE-PROVISION OF OPEN CYCLE GAS TURBINES
AT LAMMA POWER STATION**

Title	<u>Monthly EM&A Report (December 2023)</u>
Date	<u>12 January 2024</u>
Certified by	 <u>(Mr. Kenneth Fung, Environmental Team Leader)</u>
Verified by	 <u>Mr. Y. W. Fung (AECOM Asia Company Limited, Independent Environmental Checker)</u>

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EXECUTIVE SUMMARY

In April 2022, an Environmental Permit (EP-600/2022) was granted to the Hongkong Electric Co., Ltd. (HK Electric) for the decommissioning/ demolition, construction and operation of the Project entitled “Re-provision of Open Cycle Gas Turbines at Lamma Power Station”. This report, prepared by the Environmental Team, presents the Environmental Monitoring and Audit (EM&A) findings for the Project in December 2023 and is the 18th Monthly EM&A Report for the decommissioning/ demolition and construction phases of the Project.

Key Construction Activities Undertaken

The construction activities undertaken in the reporting month are as follows:

- Wire-cutting, concrete coring of column and wall, demolition of ground floor slab and trenching works
- Pre-drilling works;
- Scraped material removal works;
- Lifting and cut;
- Operation of crawler crane;
- Operation of cherry picker; and
- Take down the equipment and steel frame
- Discharge oil

Environmental Monitoring

According to the EM&A Manual, no environmental monitoring was necessary in view of the anticipated insignificant environmental impact.

Site Environmental Audit and Implementation of Mitigation Measure

Independent Environmental Checker (IEC) conducted a site inspection on 19/12/2023. The site conditions were generally satisfactory.

Weekly site audits were carried out to monitor environmental issues on the construction site. The site conditions were generally satisfactory. All recommended environmental mitigation measures were properly implemented. No environmental non-compliance was recorded in the reporting month.

Environmental Licensing and Permitting

License/Permit	Ref. No.	Valid Period		Authority/Holder	Date Issued
		From	To		
Environmental Permit	EP-600/2022	01/04/2022	-	EPD / HK Electric	01/04/2022
Waste Disposal Billing Account	Account No.: 7044319	27/06/2022	-	EPD / Civil Contractor	27/06/2022
Registration of Chemical Waste Producer	5213-912-P2781-22	22/02/2016	-	EPD / Civil Contractor	22/02/2016
EPD Notification (Dust) Construction,	481782	07/07/2022	-	EPD / Civil Contractor	07/07/2022

License/Permit	Ref. No.	Valid Period		Authority/Holder	Date Issued
		From	To		
Air Pollution Control (Construction Dust) Regulation					
Construction Noise Permit	GW-RS0726-23	22/08/2023	21/02/2024	EPD / Civil Contractor	18/08/2023
Waste Disposal Billing Account	Account No.: 7045179	28/09/2022	-	EPD / E&M Contractor	28/09/2022
Registration of Chemical Waste Producer	5517-912-K2931-02	05/12/2022	-	EPD / E&M Contractor	05/12/2022
Construction Noise Permit	GW-RS1001-23	22/11/2023	21/05/2024	EPD / E&M Contractor	20/11/2023
WPCO Discharge Licence	WT10001647-2023	29/11/2023	30/11/2028	EPD / Civil Contractor	29/11/2023

Environmental Complaints / Summons/ Prosecutions

No complaint in relation to the environmental impact of the construction activities was received in the reporting month. There was also no notification of summon and successful prosecution for breaches of relevant environmental legislations received in the reporting month.

Future Key Issues

The construction activities scheduled for the coming month are mainly wire-cutting and concrete coring of turbo block, pipe piling works, Heat Recovery Steam Generator (HRSG) 5 demolition, demolition of GT 5, operation of crawler crane, operation of cherry picker and oil discharge.

The future key issues to be considered in the coming month are as follows:

- Relevant environmental legislations should be observed.
- Relevant environmental licenses/permits should be obtained, if required.
- Required environmental mitigation measures should be properly implemented.
- Good site practices should be adopted to minimize environmental impacts.
- Dust suppression measures should be implemented for the construction activities.
- Works conducted during restricted hours should comply with the valid CNP.
- Wastewater from site facilities should be properly collected and stored within the site area.
- Wastewater should be properly treated in sedimentation pit and tanks before discharge in compliance with the WPCO discharge licence already obtained.
- Generation of waste should be minimized.
- Waste generated should be properly stored and disposed of.

Reporting Changes

There was no reporting change in the reporting month.

Concluding Remarks

The environmental performance of the Project was generally satisfactory.

1. INTRODUCTION

1.1 Background

In April 2022, an Environmental Permit (EP-600/2022) was granted to HK Electric for the decommissioning/ demolition, construction and operation of the Project entitled “Re-provision of Open Cycle Gas Turbines at Lamma Power Station”. An Environmental Team was then formed to implement the Environmental Monitoring and Audit (EM&A) programme in accordance with the EM&A Manual for the Project.

The key components of the Project are outlined as follows:

- Decommissioning and demolition of four oil-fired open cycle gas turbine units (GT2, GT3, GT4 and GT6) and one gas-fired combined cycle gas turbine unit (GT57), and auxiliary equipment including the black start gas turbine (BSGT), the miscellaneous storage shed, and the lube oil storage tank near GT5;
- Construction of four new oil-fired open cycle gas turbine units (GT8, GT9, GT 10 and GT11), and installation of the new BSGT and Battery Energy Storage System (BESS);
- Construction of new cable trenches, staircase and lift, and reconstruction of the GT57 Auxiliary Building (GTAB) to a new 132kV Switching Station; and
- Operation of four new oil-fired open cycle gas turbine units (GT8, GT9, GT10 and GT11).

The EM&A programme was commenced on 1 July 2022. This is the 18th monthly EM&A report which summarizes the environmental monitoring and audit work for the Project for the month of December 2023.

1.2 Project Organization

The management structure to oversee the Project includes the following:

- Project Proponent (HK Electric);
- Environmental Protection Department (EPD);
- Independent Environmental Checker (IEC);
- Environmental Team (ET); and
- Contractor.

The project organisation chart for the EM&A programme is shown in [Appendix A](#).

1.3 Key Construction Works Undertaken during the Reporting Month

The Project area is shown in [Figure 1.1](#), and the tentative decommissioning and construction phasing schedule is shown in [Figure 1.2](#).

The locations of air, noise and water sensitive receivers are shown in [Figure 1.3](#), [Figure 1.4](#) and [Figure 1.5](#) respectively.

The main construction activities carried out during the reporting month and the corresponding environmental mitigation measures are summarized in [Table 1.1](#). The implementation status of the major mitigation measures in the reporting month can be found in [Appendix C](#).

Table 1.1 Construction Activities and Corresponding Environmental Mitigation Measures

Item	Activities	Environmental Mitigation Measures
Civil Works - General		
1.	Wire-cutting, concrete coring of column and wall, demolition of ground floor slab and trenching works	<p><i>Air</i></p> <ul style="list-style-type: none"> - All regulated machine attached with valid exception/ approval NRMM labels. - Water spraying during concrete breaking. - Concrete debris will be covered while pending to removal. - Material in dump truck will be covered during transfer <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - Reuse treated wastewater, no wastewater discharged. <p><i>Noise</i></p> <ul style="list-style-type: none"> - Noise emission label was provided for air compressor - Works conducted during restricted hours should comply with the valid CNP. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Scrape metal will be recycled. - Concrete debris was removed to temporary storage location pending for disposal. - Chemical waste should be collected by licensed collector.
2.	Pre-drilling works at GTAB North	<p><i>Air</i></p> <ul style="list-style-type: none"> - All regulated machine attached with valid exception/ approval NRMM labels. - Excavated material stockpile will be temporarily covered with canvas or transferred to temporary storage location for backfill later. <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - Reuse treated wastewater, no wastewater discharged. <p><i>Noise</i></p> <ul style="list-style-type: none"> - Works conducted during restricted hours should comply with the valid CNP. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Excavated material was temporary stored for backfilling later. - Chemical waste should be collected by licensed collector.
E&M Works - General		
3.	Scraped material removal works	<p><i>Air</i></p> <ul style="list-style-type: none"> - All regulated machine attached with exception/ approval NRMM labels. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment. <p><i>Wastewater</i></p>

Item	Activities	Environmental Mitigation Measures
		<ul style="list-style-type: none"> - No wastewater is required to be discharged for this moment. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Scrap metal will be recycled.
4.	Lifting and cut	<p><i>Air</i></p> <ul style="list-style-type: none"> - Fence off the working area to avoid dust emission. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment. <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - No wastewater is required to be discharge for this works. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Scrap metal will be recycled.
5.	Operation of crawler crane	<p><i>Air</i></p> <ul style="list-style-type: none"> - All regulated machine attached with exception/ approval NRMM labels. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment. <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - No wastewater is required to be discharged for this works. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - No waste will be generated.
6.	Operation of cherry picker	<p><i>Air</i></p> <ul style="list-style-type: none"> - All regulated machine attached with exception/approval NRMM labels. <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - No wastewater is required to be discharged for this works. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - No waste will be generated.
7.	Take down the equipment and steel frame	<p><i>Air</i></p> <ul style="list-style-type: none"> - Fence off the working area to avoid dust emission. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment.

Item	Activities	Environmental Mitigation Measures
		<p><i>Wastewater</i></p> <ul style="list-style-type: none"> - No wastewater is required to be discharge for this works. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Scrap metal will be recycled.
8.	Discharge oil	<p><i>Air</i></p> <ul style="list-style-type: none"> - Fence off the working area to avoid dust emission. <p><i>Noise</i></p> <ul style="list-style-type: none"> - No works will be conducted during restricted hours at this moment. <p><i>Wastewater</i></p> <ul style="list-style-type: none"> - setup the nylon sheet on ground. <p><i>Waste Management</i></p> <ul style="list-style-type: none"> - Oil would be handled by specific chemical waste disposal company.

1.4 Summary of EM&A Requirements

Impact Monitoring

According to the EM&A Manual, no routine impact monitoring for air quality, noise and water quality is necessary in view of the anticipated insignificant environmental impact.

Environmental Audit

Regular environmental audits on air quality, noise, water quality, waste management, and land contamination are required. Details of the audits are summarized in [Section 2](#) of this report.

Report on complaints, notification of summons and successful prosecutions are given in [Section 3](#) of this report.

Future key issues are given in [Section 4](#) of this report.

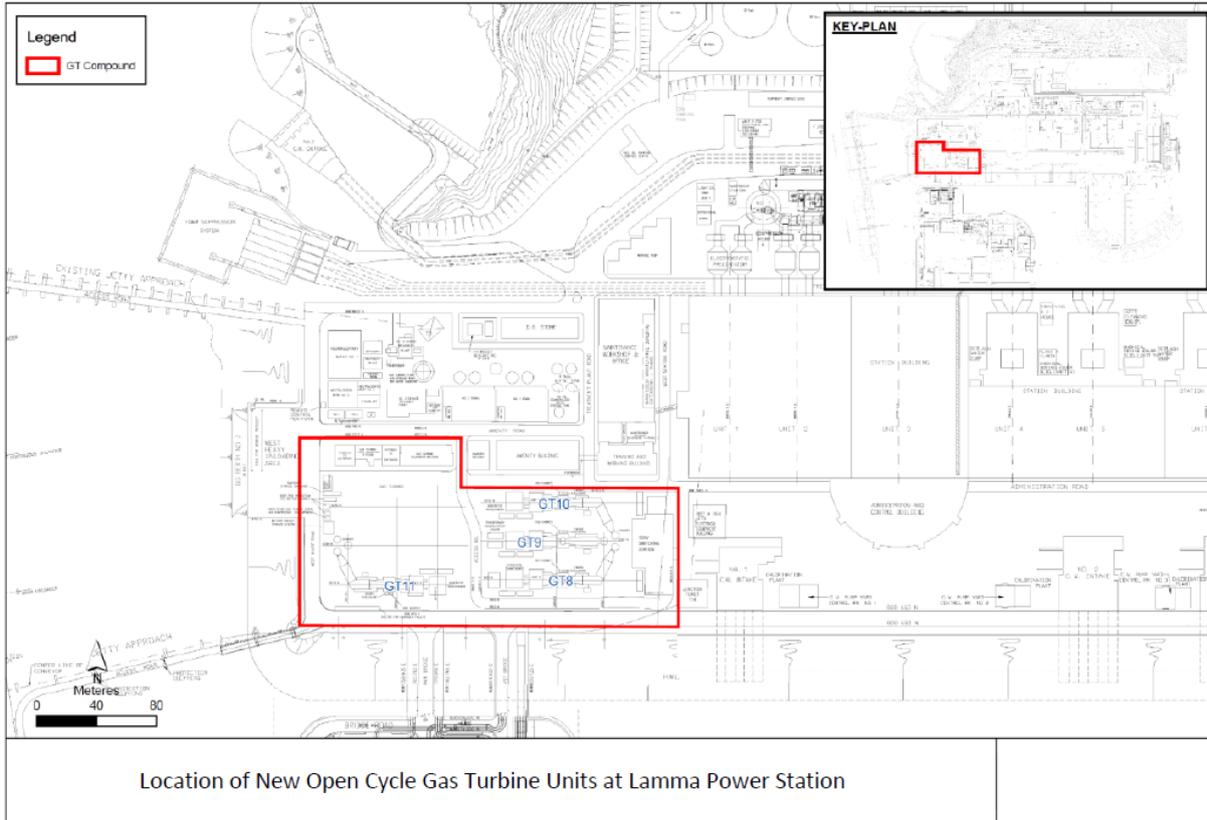
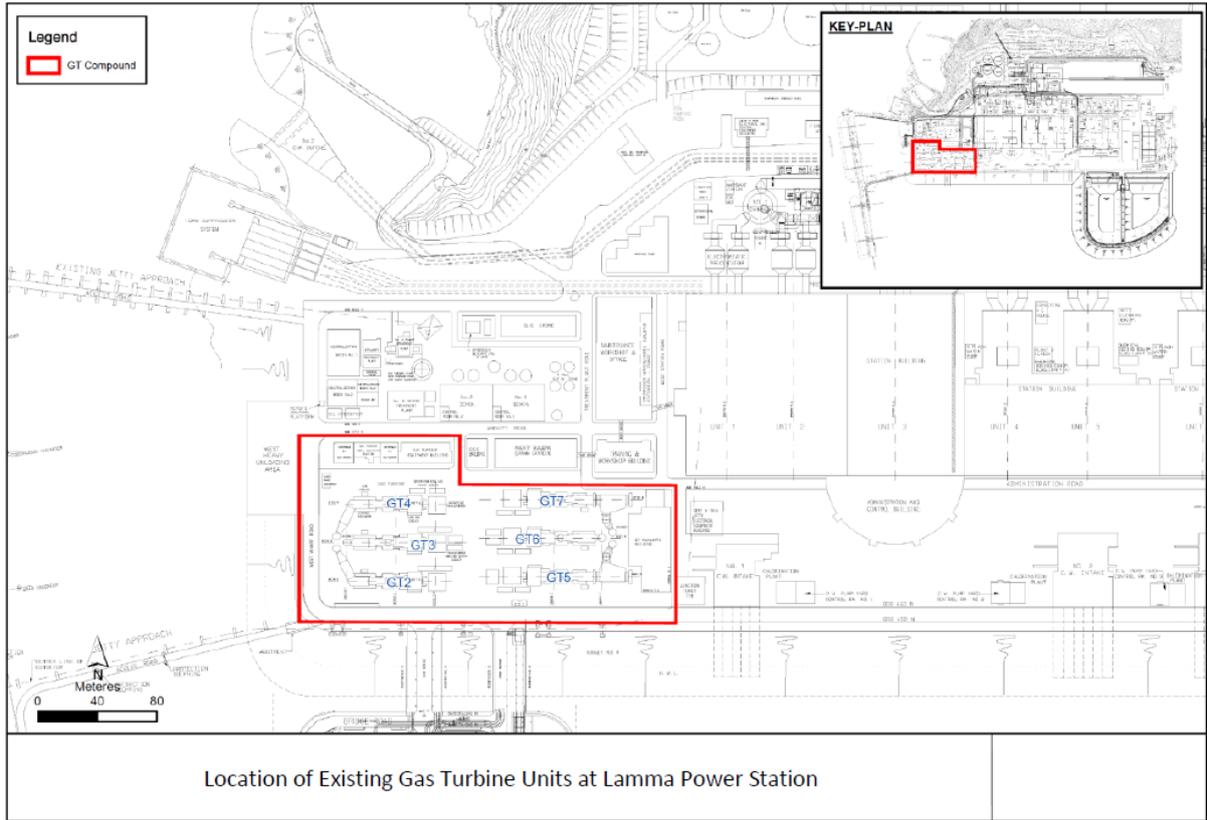


Figure 1.1 The Project Area

		Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026
GT57	Decommissioning of GT57																				
Demolition of GT7	Demolition of E&M equipment in GTAB																				
	Demolition of HRSG Demolition of gas turbine, generator, generator transformer and auxiliary equipment																				
GT10	Anchor bolt replacement																				
	Stack refurbishment																				
	Construction of gas turbine, generator, generator transformer and auxiliary equipment																				
	Testing and Commissioning																				
Demolition of GT5	Demolition of HRSG																				
	Demolition of gas turbine, generator, generator transformer and auxiliary equipment																				
GT8	Anchor bolt replacement																				
	Construction of gas turbine, generator, generator transformer and auxiliary equipment																				
	Testing and Commissioning																				
	Decommissioning																				
Demolition of GT6	Demolition of gas turbine, generator, generator transformer and auxiliary equipment																				
	Anchor bolt replacement																				
GT9	Construction of gas turbine, generator, generator transformer and auxiliary equipment																				
	Testing and Commissioning																				
	Decommissioning																				
GT2	Decommissioning	To be advised																			
	Demolition																				
GT3	Decommissioning																				
	Demolition																				
GT4	Decommissioning																				
	Demolition																				
GT11	Construction																				
	Testing and Commissioning																				

Figure 1.2 Decommissioning and Construction Phasing Schedule

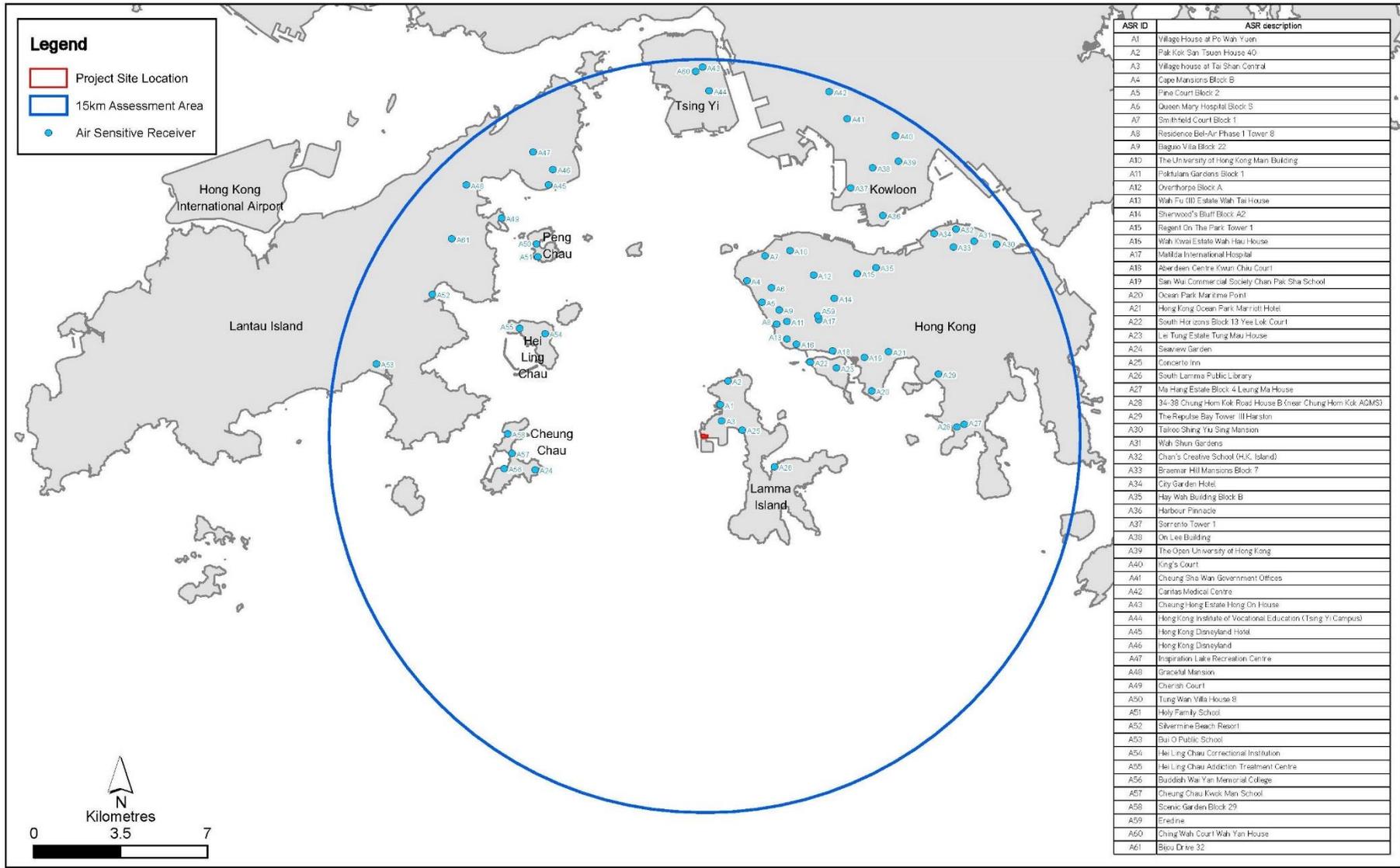


Figure 1.3 Locations of Air Sensitive Receivers within the 15km Assessment Area

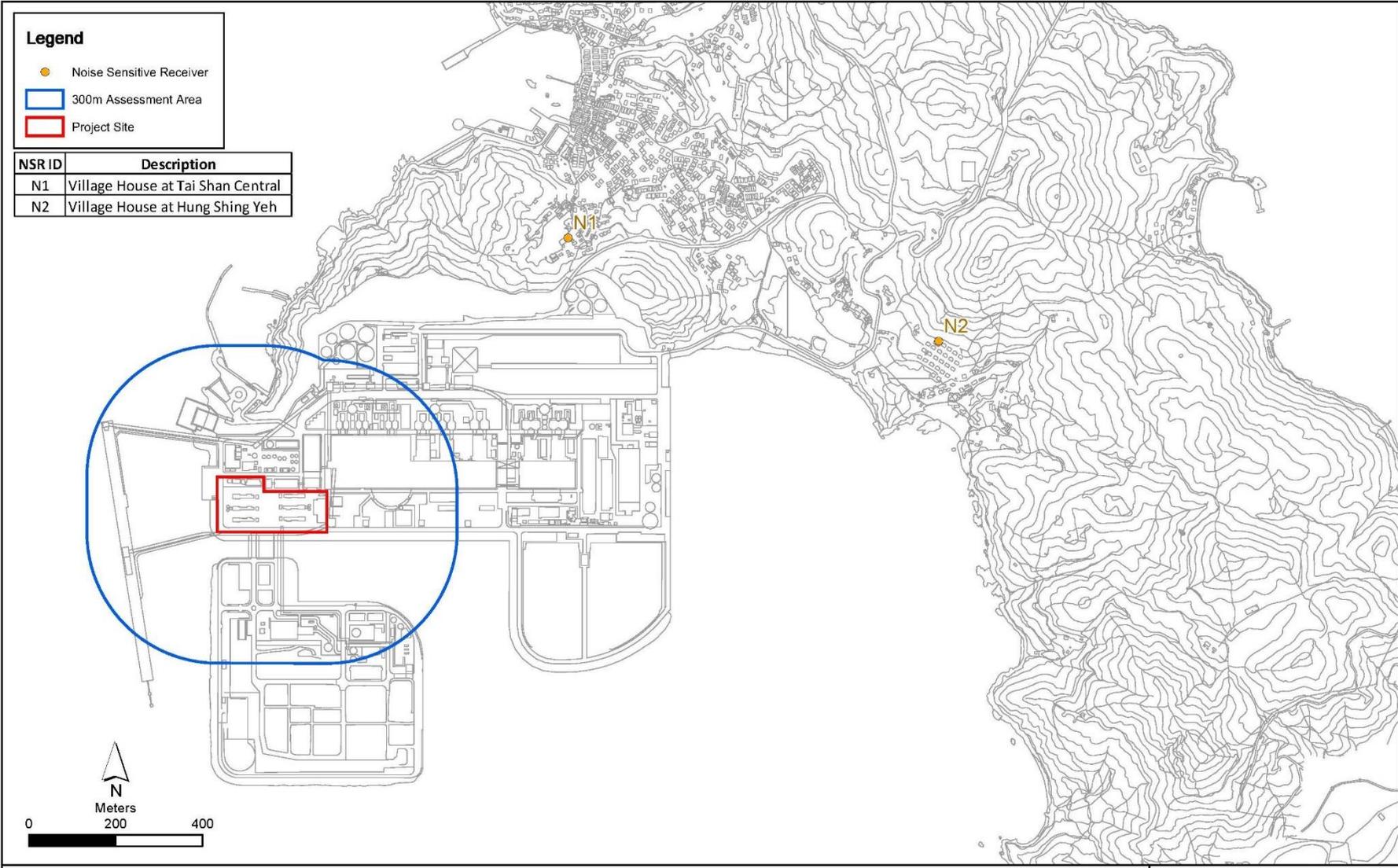


Figure 1.4 Locations of Noise Sensitive Receivers

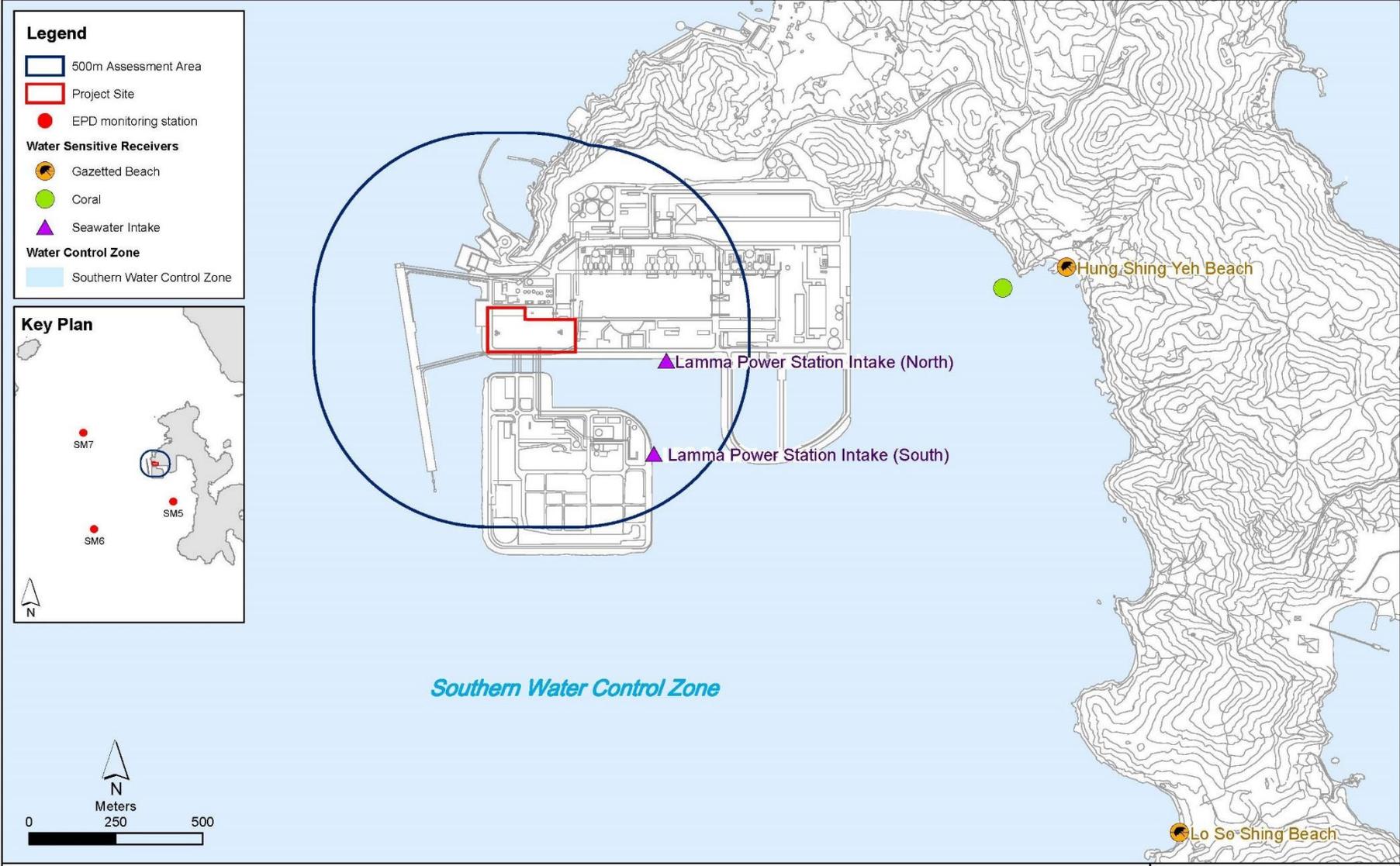


Figure 1.5 Locations of Water Sensitive Receivers

2. ENVIRONMENTAL AUDIT

2.1 Site Inspection

Independent Environmental Checker (IEC) conducted a site inspection on 19/12/2023. The site conditions were generally satisfactory.

Weekly site audits were carried out by the Environmental Team in the reporting month to ensure compliance with relevant legislations and other requirements. The site audit findings or recommendations in the reporting month are summarized in [Appendix D](#). The site conditions were generally satisfactory. No non-compliance was recorded during the site inspection. All recommended mitigation measures were properly implemented.

2.2 Status of Environmental Licensing and Permitting

The licenses/permits obtained for the Project as of end December 2023 are summarised in [Table 2.1](#).

Table 2.1 Status of Environmental Licensing and Permitting

License/Permit	Ref. No.	Valid Period		Description	Status
		From	To		
Environmental Permit	EP-600/2022	01/04/2022	-	For the decommissioning/demolition, construction and operation of the Project	Valid
Waste Disposal Billing Account	Account No.: 7044319	27/06/2022	-	Civil Work	Valid
Registration of Chemical Waste Producer	5213-912-P2781-22	22/02/2016	-	Civil Work	Valid
EPD Notification (Dust) Construction, Air Pollution Control (Construction Dust) Regulation	481782	07/07/2022	-	Civil Work	Valid
Construction Noise Permit	GW-RS0726-23	22/08/2023	21/02/2024	Civil Work Operation of PME during restricted hours	Valid
Waste Disposal Billing Account	Account No.: 7045179	28/09/2022	-	E&M Work	Valid
Registration of Chemical Waste Producer	5517-912-K2931-02	05/12/2022	-	E&M Work	Valid
Construction Noise Permit	GW-RS1001-23	22/11/2023	21/05/2024	E&M Work Operation of PME during restricted hours	Valid

License/Permit	Ref. No.	Valid Period		Description	Status
		From	To		
WPCO Discharge Licence	WT10001647-2023	29/11/2023	30/11/2028	Civil Work	Valid

2.3 Waste Management

All wastes produced were managed in accordance with the Waste Management Plan, good waste management practices, and statutory regulations and requirements.

The estimated quantities of wastes generated in December 2023 are summarized in [Table 2.2](#).

Table 2.2 Estimated Quantities of Waste Generated in December 2023

Total Inert C&D Waste Materials	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
0 Tonnes	239.35 Tonnes	30.91 Tonnes	0 Litres

The monthly waste flow tables prepared by the contractors are attached in [Appendix E](#).

2.4 Implementation Status of Land Contamination Assessment

The EIA study has recommended to conduct site investigation and sampling at five hotspot locations (i.e. 4 boreholes and 1 trial pit) to assess the potential land contamination impacts within the Project site in accordance with the Contaminated Assessment Plan (CAP). Site investigation and soil and groundwater sampling will be undertaken in accordance with the CAP under the supervision of a Land Contamination Specialist when the proposed sampling locations are made available after the demolition of the existing units and structures. The updated CAP was submitted to EPD in December 2022 for approval. EPD's comments on the CAP were received on 20/12/2022 and a revised CAP was submitted to EPD on 13/1/2023. EPD's approval for the CAP was granted on 2/3/2023.

Site investigation work on Lube Oil Tank area (BH1) was started on 22/5/2023 and the samples obtained had been delivered to laboratory for further analysis. Laboratory test result has been received on 26/7/2023. While no contamination was identified in Lube Oil Tank area based on the test result, the corresponding Contamination Assessment Report was compiled and currently under internal review.

2.5 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the Environmental Permit and the EM&A Manual are required to be implemented. A summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in [Appendix C](#).

3. REPORT ON COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

3.1 Implementation Status of Environmental Complaint Handling Procedures

No complaint in relation to the environmental impact of the construction activities was received in the reporting month.

Table 3.1 Environmental Complaints Received in December 2023

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 3.2 Outstanding Environmental Complaints Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
Nil	N/A	N/A

3.2 Environmental Summon and Successful Prosecution

No notification of summon or successful prosecution was received in the reporting month.

Table 3.3 Notifications of Summon or Successful Prosecution Received in December 2023

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 3.4 Notifications of Summon or Successful Prosecution Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions /Actions Taken	Conclusion / Status
Nil	N/A	N/A

4. FUTURE KEY ISSUES

4.1 Construction Program for the Coming Month

The construction activities scheduled for the coming month are mainly wire-cutting and concrete coring of turbo block, pipe piling works, Heat Recovery Steam Generator (HRSG) 5 demolition, demolition of GT 5, operation of crawler crane, operation of cherry picker and oil discharge. (see [Appendix B](#)).

4.2 Key Issues for the Coming Month

Key issues to be considered and recommended in the coming month include:

Civil Works

General

- Relevant environmental legislations should be observed.
- Relevant environmental licenses/permits should be obtained, if required.
- Required environmental mitigation measures should be properly implemented.

Air

- Dust suppression measures should be implemented for the construction activities.

Noise

- General noise mitigation measures should be employed at work site.
- Works conducted during restricted hours should comply with the valid CNP.

Water

- Wastewater from site facilities should be properly collected and stored within the site area.
- Wastewater should be properly treated in sedimentation pit and tanks before discharge in compliance with the WPCO discharge licence already obtained.
- Good site practices should be adopted.

Waste

- Waste Management Plan submitted should be implemented
- Good site practices should be adopted.

Land Contamination

- Good site practices should be adopted.

E&M Works

General

- Relevant environmental legislations should be observed.
- Relevant environmental licenses/permits should be obtained, if required.
- Required environmental mitigation measures should be properly implemented.

Air

- Dust suppression measures should be implemented for the construction activities.

Noise

- General noise mitigation measures should be employed at work site.
- Works conducted during restricted hours should comply with the valid CNP.

Water

- Wastewater from site facilities should be properly collected and stored within the site area.
- Good site practices should be adopted.

Waste

- Waste Management Plan submitted should be implemented
- Good site practices should be adopted.

Land Contamination

- Good site practices should be adopted.

5. CONCLUSION

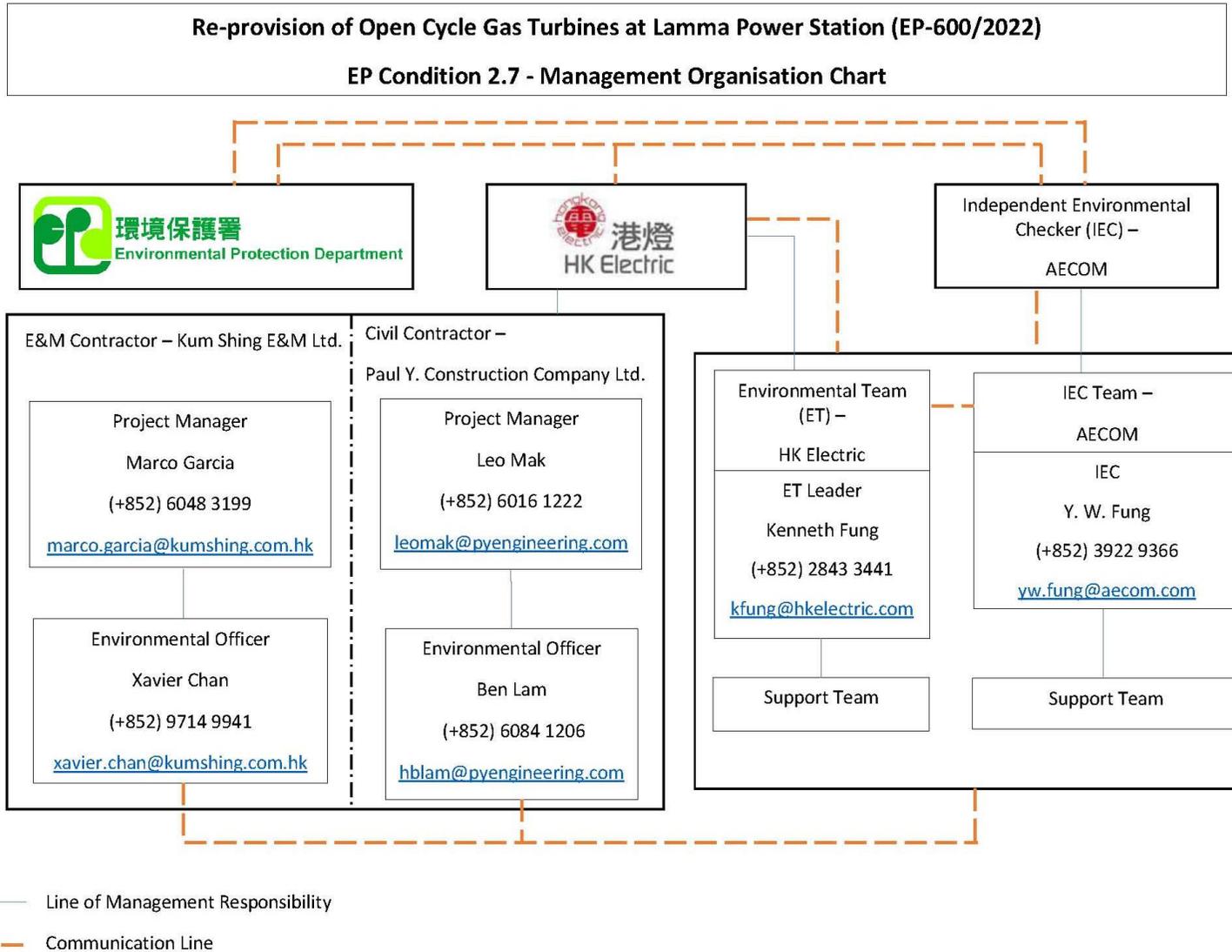
According to the EM&A Manual, environmental monitoring was not necessary in view of the anticipated insignificant environmental impact. Environmental audits were performed in accordance with the EM&A Manual.

All recommended environmental mitigation measures were properly implemented. No complaint in relation to the environmental impact of the construction activities was received in the reporting month. There was also no notification of summon and successful prosecution for breaches of relevant environmental legislations received in the reporting month.

No non-compliance was recorded in the reporting month.

The environmental performance of the Project was generally satisfactory.

Appendix A Organization Chart



Re-provision of Open Cycle Gas Turbines at Lamma Power Station
 Monthly EM&A Report for December 2023

Contract No. 21-83005																						
Civil Works for Re-provision of OCGT at Lamma Power Station																						
ID	Task Name	Duration	Start	Finish	Qtr 1, 2024																	
					January					February					March		Apr					
					F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S
40	A5: Shelter, fencing and fire services installation works at GT I/B Transformer Bay No.3	0 days	Thu 1/1/26	Thu 1/1/26																		
41	Section B	625 days	Fri 14/6/24	Sat 28/2/26																		
42	B1: BESS foundation works	0 days	Sun 30/6/24	Sun 30/6/24																		
43	B2: Civil works for existing GT7(new GT10)	0 days	Fri 14/6/24	Fri 14/6/24																		
44	B3: Civil Works for existing GT5 (new GT8)	0 days	Thu 29/8/24	Thu 29/8/24																		
45	B4: Civil works for existing GT6 (new GT9)	0 days	Sat 28/2/26	Sat 28/2/26																		
46	B5: Civil works for existing I/B Transformer Bay No. 20 and Gas Turbine 132kV Switching Station	20 days	Wed 31/12/25	Wed 31/12/25																		
47	Section C (LPS)	1080 days	Sun 16/7/23	Tue 30/6/26																		
48	C1: Trenching works within Area A & H	0 days	Sun 16/7/23	Sun 16/7/23																		
49	C2: Trenching works (excluding BESS-3) within Area	10 days	Sat 15/6/24	Sat 15/6/24																		
50	C3: Trenching works within Area E	0 days	Sat 18/5/24	Sat 18/5/24																		
51	C3: Trenching works within Area F	0 days	Fri 30/8/24	Fri 30/8/24																		
52	C4: Trenching works within Area G	0 days	Tue 30/9/25	Tue 30/9/25																		
53	C5: Trenching works within Area I	0 days	Tue 31/3/26	Tue 31/3/26																		
54	C6: Trenching works for BESS-3 within Area B	0 days	Tue 30/6/26	Tue 30/6/26																		
55	Section D (LMD)	519 days	Fri 30/6/23	Sat 30/11/24																		
56	D1: Trenching works within Area II	0 days	Fri 30/6/23	Fri 30/6/23																		
57	D2: Trenching works within Area I	0 days	Sat 7/10/23	Sat 7/10/23																		
58	D3: Trenching works within Area VIII	0 days	Sat 30/11/24	Sat 30/11/24																		
59	Section E (LPS & LMD)	0 days	Thu 31/12/26	Thu 31/12/26																		
60	E1: Remove of sub-base, backfill, screeding etc. for trenches within Area A to J at LPS and Area I to VIII at LMX	0 days	Thu 31/12/26	Thu 31/12/26																		
61	E2: Total completion for all remaining works	0 days	Thu 31/12/26	Thu 31/12/26																		
62	Schedule of Anchor Bolt Installation by Employer's Specialist Contractor as per Clause PS1.4.3 (Section B2 to	0 days	Mon 1/1/24	Mon 1/1/24																		
63	Section B2 - Anchor Bolt installation	46 days	Thu 1/2/24	Sun 17/3/24																		
64	Section B3 - Anchor Bolt installation	45 days	Sat 1/6/24	Mon 15/7/24																		
65	Section B4 - Anchor Bolt installation	46 days	Thu 1/1/26	Sun 15/2/26																		
66	Schedule of Final concreting works	1081 days	Thu 16/3/23	Sat 28/2/26																		
67	Section B2 - Final Concreting Works	15 days	Thu 16/3/23	Thu 30/3/23																		
68	Section B3 - Final Concreting Works	16 days	Tue 16/7/24	Wed 31/7/24																		
69	Section B4 - Final Concreting Works	13 days	Mon 16/2/26	Sat 28/2/26																		
70	Transformer works by Employer's Specialist Contractor as per Clause	122 days	Mon 1/8/25	Wed 31/12/25																		
71	Section B5 - Transformer Works	122 days	Mon 1/8/25	Wed 31/12/25																		
72	General Preliminary and Technical Submission and Approval	940 days	Fri 24/6/22	Sat 18/1/25																		
73	Method Statement and Materials: Preparation and Submission (Se	7 days	Fri 24/6/22	Thu 30/6/22																		
74	Method Statement and Materials: Engineer's Review and Approval	7 days	Fri 24/6/22	Thu 30/6/22																		
75	Method Statement and Materials: Preparation and Submission (Other Major Works)	28 days	Fri 1/7/22	Thu 28/7/22																		
76	Method Statement and Materials: Engineer's Review and Approval (Other Major Works)	28 days	Fri 29/7/22	Thu 25/8/22																		
77	Quality Plan - Preparation & Submission	28 days	Fri 24/6/22	Thu 21/7/22																		
78	Quality Plan - Engineer's Review and Approval	28 days	Fri 22/7/22	Thu 18/8/22																		
79	Health and Safety Plan - Preparation & Submission	28 days	Fri 24/6/22	Thu 21/7/22																		
80	Health and Safety Plan - Engineer's Review and Approval	28 days	Fri 22/7/22	Thu 18/8/22																		
81	Trenching Submission - Prepare and submit of Trenching work	28 days	Fri 24/6/22	Thu 21/7/22																		

Tender Program of Contract No. 21-83005
 Civil Works for Re-provision of OCGT
 at Lamma Island Power Station



Task Summary Start-only Finish-only Critical Progress Critical Split

Milestone Manual Summary

Re-provision of Open Cycle Gas Turbines at Lamma Power Station
 Monthly EM&A Report for December 2023

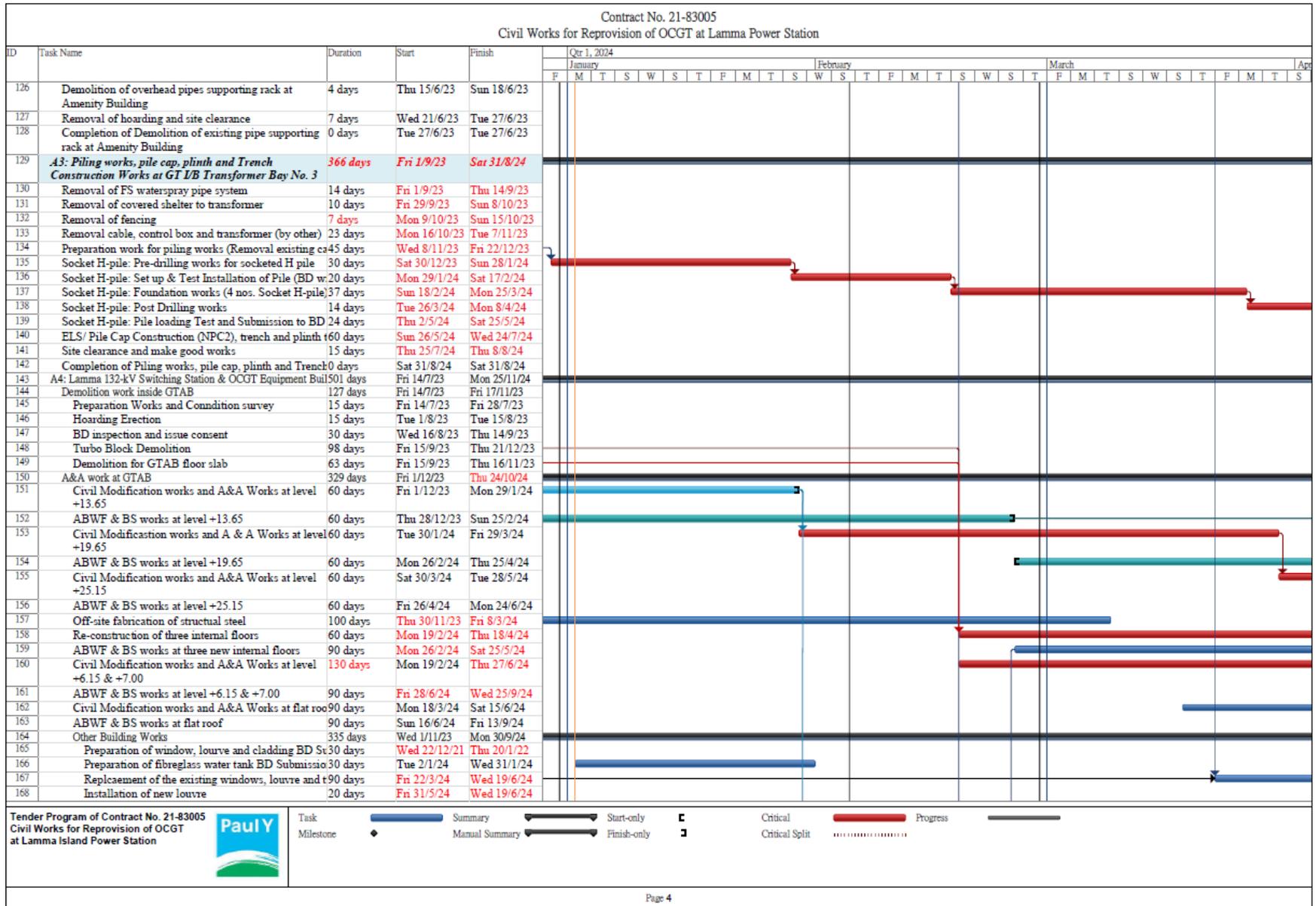
Contract No. 21-83005																													
Civil Works for Reprovision of OCGT at Lamma Power Station																													
ID	Task Name	Duration	Start	Finish	Qtr 1, 2024							Qtr 2, 2024																	
					January							February																	
					F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S
82	Trenching Submission - Approval of Trenching work	28 days	Fri 22/7/22	Thu 18/8/22																									
83	ELS Design Submission - Preparation for Submission (Pile Cap)	28 days	Fri 24/6/22	Thu 21/7/22																									
84	ELS Design Submission - Review & Approval (Pile Cap)	28 days	Fri 22/7/22	Thu 18/8/22																									
85	FS installation - Design Submission to ICE	29 days	Sun 22/12/24	Sun 19/1/25																									
86	FS installation - Engineer's Review and Approval	29 days	Sun 22/12/24	Sun 19/1/25																									
87	BS Shop Drawing and Combined Services Drawings Preparation	90 days	Fri 28/10/22	Thu 26/1/23																									
88	Combined Services Drawings Approval by the Engineer	28 days	Fri 27/1/23	Thu 23/2/23																									
89	BS Equipment Schedule Preparation & Submission	90 days	Tue 31/1/23	Sun 30/4/23																									
90	BS Equipment Schedule Approval by the Engineer	28 days	Tue 2/5/23	Mon 29/5/23																									
91	BD Application & Procedure	719 days	Fri 1/7/22	Tue 18/6/24																									
92	BA19 Hoarding Permit Application (Phase I)	30 days	Fri 1/7/22	Sat 30/7/22																									
93	BA19 Hoarding Permit Application (Phase II)	30 days	Thu 15/6/23	Fri 14/7/23																									
94	BA8 Application for Consent (Demolition Works) (Green)	28 days	Fri 1/7/22	Thu 28/7/22																									
95	BA8 Application for Consent (Demolition Works) (Cyan)	28 days	Fri 14/7/23	Thu 10/8/23																									
96	BA10 Notice of Appointment of Registered Contractor (Demolition Works)	7 days	Fri 11/8/23	Thu 17/8/23																									
97	BA14A Certificate on Completion of Demolition Works	27 days	Fri 22/12/23	Wed 17/1/24																									
98	BA8 Application for Consent (Piling works)	28 days	Wed 15/2/23	Tue 14/3/23																									
99	BA14 Certificate on Completion of Building Works (Piling)	0 days	Thu 2/5/24	Thu 2/5/24																									
100	BA8 Application for Consent (A&A Works)	28 days	Tue 15/8/23	Mon 11/9/23																									
101	BA8 Application for Consent (Pile Cap & Superstructure)	28 days	Fri 1/7/22	Thu 28/7/22																									
102	BA10 Notice of Appointment of Registered Contractor (P)	7 days	Fri 29/7/22	Thu 4/8/22																									
103	BA13 & BA14 Certificate on Completion of Building Works (Pile Cap & Superstructure)	0 days	Sun 9/3/25	Sun 9/3/25																									
104	BA14 Certificate on Completion of Building Works (OCC)	0 days	Sat 5/4/25	Sat 5/4/25																									
105	Procurement & Delivery	190 days	Tue 30/5/23	Tue 5/12/23																									
109	Construction	1645 days	Fri 1/7/22	Thu 31/12/26																									
110	Preparation	110 days	Sat 29/7/23	Wed 15/11/23																									
111	Site Set-up and survey	48 days	Fri 1/7/22	Wed 17/8/22																									
112	Site Condition Survey	14 days	Fri 1/7/22	Thu 14/7/22																									
113	Fencing Erection at Site Office & Store	20 days	Fri 15/7/22	Wed 3/8/22																									
114	Erect Scaffolding & Temporary working platform	14 days	Thu 4/8/22	Wed 17/8/22																									
115	Section A	1472 days	Wed 22/12/21	Thu 1/1/26																									
116	A1: Removal of existing cladding enclosure from +6.45 to +9.50mPD at G.L. 4-5/F	18 days	Mon 3/10/22	Fri 21/10/22																									
117	Site Establishment & Condition survey	4 days	Mon 3/10/22	Thu 6/10/22																									
118	Erection Scaffolding & Fence off	3 days	Fri 7/10/22	Sun 9/10/22																									
119	Removal & Disposal of existing cladding enclosure at G.L. 4-5/F	5 days	Mon 10/10/22	Fri 14/10/22																									
120	Removal of existing cladding enclosure from +6.45 to +9.50mPD at G.L. 4-5/F and Make Good	3 days	Sat 15/10/22	Mon 17/10/22																									
121	Completion of Removal of existing cladding enclosure	0 days	Fri 21/10/22	Fri 21/10/22																									
122	A2: Demolition of existing pipe supporting rack at Amenity Building	36 days	Tue 23/5/23	Tue 27/6/23																									
123	Site Establishment & Temporary work	2 days	Tue 23/5/23	Wed 24/5/23																									
124	Erection Scaffolding & Fence off	7 days	Thu 25/5/23	Wed 31/5/23																									
125	BD inspection and issue consent	14 days	Thu 1/6/23	Wed 14/6/23																									

Tender Program of Contract No. 21-83005
 Civil Works for Reprovision of OCGT
 at Lamma Island Power Station



Task Summary Start-only Finish-only Critical Progress Critical Split

Re-provision of Open Cycle Gas Turbines at Lamna Power Station
 Monthly EM&A Report for December 2023



Re-provision of Open Cycle Gas Turbines at Lamma Power Station
 Monthly EM&A Report for December 2023

		Contract No. 21-83005 Civil Works for Re-provision of OCGT at Lamma Power Station																																			
ID	Task Name	Duration	Start	Finish	Qtr 1, 2024																																
					January							February							March							April											
					F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S	
210	FSD inspection	50 days	Sat 18/1/25	Sun 9/3/25																																	
211	Form 314 & 501 submission	0 days	Sat 18/1/25	Sat 18/1/25																																	
212	FS inspection (FS system)	15 days	Sun 19/1/25	Sun 2/2/25																																	
213	FS re-inspection	7 days	Mon 3/2/25	Sun 9/2/25																																	
214	FSD - Form 172 (Fire Certificate)	28 days	Mon 10/2/25	Sun 9/3/25																																	
215	BD inspection for OP	27 days	Sun 9/3/25	Sat 5/4/25																																	
216	Form 314 & 501 submission	0 days	Sun 9/3/25	Sun 9/3/25																																	
217	BD inspection	13 days	Mon 10/3/25	Sat 22/3/25																																	
218	BD rectification and re-inspection	14 days	Sun 23/3/25	Sat 5/4/25																																	
219	Completion of Lamma 132-kV Switching Station & OCGT Equipment Building	0 days	Sat 5/4/25	Sat 5/4/25																																	
220	A5: Shelter, fencing and fire services installation works at GT I/B Transformer Bay No.3	200 days	Mon 16/6/25	Thu 1/1/26																																	
221	Construction of shelter and fencing works at GT Interbus (I/B)	90 days	Mon 16/6/25	Sat 13/9/25																																	
222	Completion of Shelter, fencing and fire services installation works at GT I/B Transformer Bay No.3	0 days	Thu 1/1/26	Thu 1/1/26																																	
223	Section B	807 days	Fri 15/12/23	Sat 28/2/26																																	
224	B1: BESS foundation works	181 days	Mon 1/1/24	Sun 30/6/24																																	
225	BESS Foundation in Area H	150 days	Mon 1/1/24	Wed 29/5/24																																	
226	Ground investigation works for Borehole no. BH2, BH3 & BH4	30 days	Mon 1/1/24	Tue 30/1/24																																	
227	Completion of BESS foundation works	1 day	Sat 29/6/24	Sun 30/6/24																																	
228	B2: Civil works for existing GT7 (new GT10)	183 days	Fri 15/12/23	Fri 14/6/24																																	
229	Ground Investigation works for Borehole no. BH1 and Trail p.30	30 days	Fri 15/12/23	Sat 13/1/24																																	
230	Civil modification works for existing GT7 (new GT10)	122 days	Fri 15/12/23	Sun 14/4/24																																	
231	Anchor Bolt Installation (By Others)	46 days	Mon 15/4/24	Thu 30/5/24																																	
232	Final Concreting	15 days	Fri 31/5/24	Fri 14/6/24																																	
233	Completion of Civil works for existing GT7 (new GT10)	0 days	Fri 14/6/24	Fri 14/6/24																																	
234	B3: Civil Works for existing GT5 (new GT8)	182 days	Fri 1/3/24	Thu 29/8/24																																	
235	Civil modification works for existing GT5 (new GT8)	121 days	Fri 1/3/24	Sat 29/6/24																																	
236	Anchor Bolt Installation (By Others)	45 days	Sun 30/6/24	Tue 13/8/24																																	
237	Final Concreting	16 days	Wed 14/8/24	Thu 29/8/24																																	
238	Completion of Civil works for existing GT5 (new GT8)	0 days	Thu 29/8/24	Thu 29/8/24																																	
239	B4: Civil works for existing GT6 (new GT9)	181 days	Mon 1/9/25	Sat 28/2/26																																	
240	Civil modification works for existing GT6 (new GT9)	122 days	Mon 1/9/25	Wed 31/12/25																																	
241	Anchor Bolt Installation (By Others)	46 days	Thu 1/1/26	Sun 15/2/26																																	
242	Final Concreting	13 days	Mon 16/2/26	Sat 28/2/26																																	
243	Completion of Civil works for existing GT6 (new GT9)	0 days	Sat 28/2/26	Sat 28/2/26																																	
244	B5: Civil works for existing I/B Transformer Bay No. 2 and Gas Turbine 132kV Switching Station	273 days	Sun 1/6/25	Sat 28/2/26																																	
245	Civil modification works for Gas Turbine 132kV Switching Station	82 days	Sun 1/6/25	Sun 31/8/25																																	
246	Transformer works (By Others)	122 days	Mon 1/6/25	Wed 31/12/25																																	
247	Fire services works for I/B Transformer No. 2	214 days	Sun 1/6/25	Wed 31/12/25																																	
248	Other Remaining Works	59 days	Thu 1/1/26	Sat 28/2/26																																	
249	Completion of Civil works for existing I/B Transformer No. 2 and Gas Turbine 132kV Switching Station	0 days	Sat 28/2/26	Sat 28/2/26																																	
250	Section C	1461 days	Fri 1/7/22	Tue 30/6/26																																	
251	C1: Trenching works within Area A	395 days	Fri 1/7/22	Sun 30/7/23																																	
252	Area A	395 days	Fri 1/7/22	Sun 30/7/23																																	
253	Preparation Works (UU checking/ Condition survey/ Fence)	20 days	Fri 1/7/22	Wed 20/7/22																																	
254	Excavation (ELSY) UU Diversion (if any)	75 days	Thu 21/7/22	Mon 3/10/22																																	

Tender Program of Contract No. 21-83005
 Civil Works for Re-provision of OCGT
 at Lamma Island Power Station



Task █ Summary █ Start-only Critical █ Progress

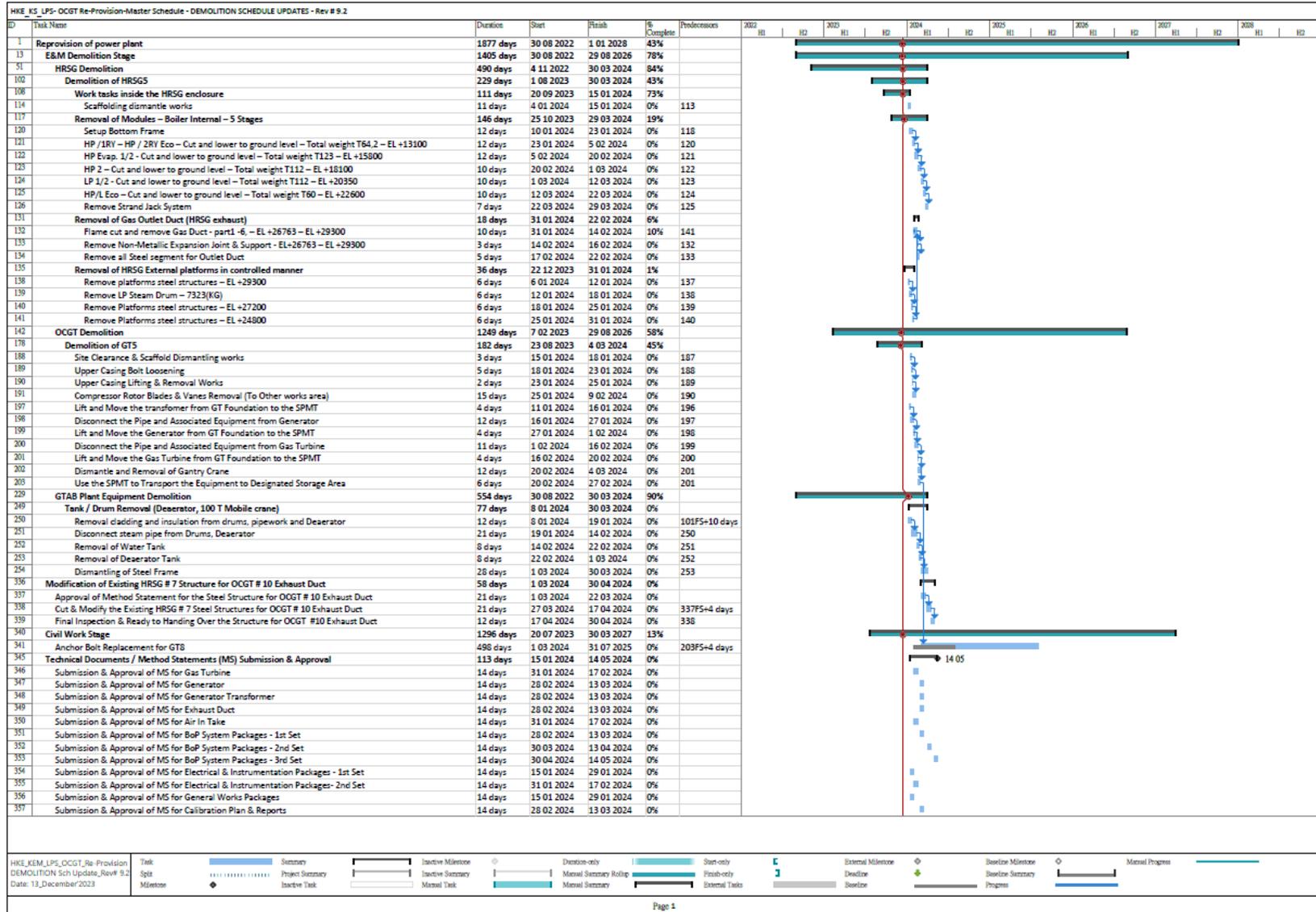
Milestone ◆ Manual Summary █ Finish-only Critical Split

Re-provision of Open Cycle Gas Turbines at Lamna Power Station
 Monthly EM&A Report for December 2023

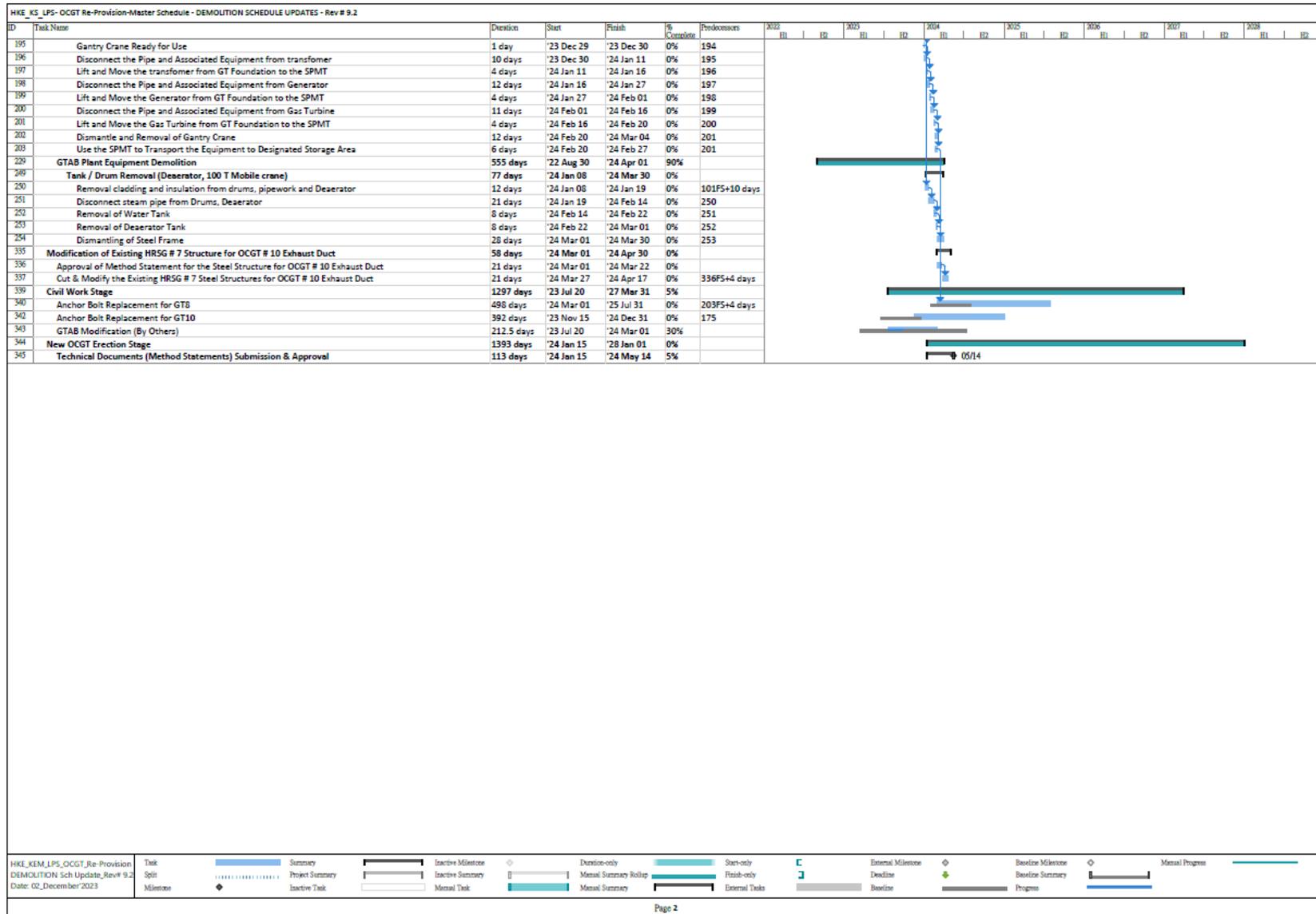
		Contract No. 21-83005																														
		Civil Works for Reprovision of OCGT at Lamna Power Station																														
ID	Task Name	Duration	Start	Finish	Qtr 1, 2024																											
					January							February							March							April						
					F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S	W	S	T	F	M	T	S			
412	Final Reinstatement of Road and Pavement	42 days	Fri 11/4/25	Thu 22/5/25																												
413	Area G (Cable Trench - LGT2, BESS-1)	273 days	Wed 1/10/25	Tue 30/6/26																												
414	Handover to Paul Y. for cable laying by Employer's Specifi	118 days	Wed 1/10/25	Mon 26/1/26																												
415	Reinstate of Trench Cover including backfilling	95 days	Tue 27/1/26	Fri 1/5/26																												
416	Final Reinstatement of Road and Pavement	60 days	Sat 2/5/26	Tue 30/6/26																												
417	Area I (Cable Trench - 132-GT9)	184 days	Wed 1/7/26	Thu 31/12/26																												
418	Handover to Paul Y. for cable laying by Employer's Specifi	74 days	Wed 1/7/26	Sat 12/9/26																												
419	Reinstate of Trench Cover including backfilling	55 days	Sun 13/9/26	Fri 6/11/26																												
420	Final Reinstatement of Road and Pavement	55 days	Sat 7/11/26	Thu 31/12/26																												
421	Completion of Area A-J at LPS	0 days	Thu 31/12/26	Thu 31/12/26																												
422	Area at LMX	1005 days	Mon 1/4/24	Thu 31/12/26																												
423	Area I & II (Cable Trench - GT8, GT10, GT Station)	205 days	Mon 1/4/24	Tue 22/10/24																												
424	Handover to Paul Y. for cable laying by Employer's Specifi	90 days	Mon 1/4/24	Sat 29/6/24																												
425	Backfilling	65 days	Sun 30/6/24	Mon 2/9/24																												
426	Construct Permanent Paving & Final Reinstatement	50 days	Tue 3/9/24	Tue 22/10/24																												
427	Area III & IV (Cable Trench - GT Station)	214 days	Wed 1/5/24	Sat 30/11/24																												
428	Removal of Ground Finishes	31 days	Wed 1/5/24	Fri 31/5/24																												
429	Handover to Paul Y. for cable laying by Employer's Specifi	52 days	Sat 1/6/24	Mon 22/7/24																												
430	Backfilling	61 days	Tue 23/7/24	Sat 21/9/24																												
431	Provision of Deck (Section III)	113 days	Sat 1/6/24	Sat 21/9/24																												
432	Construct Permanent Paving & Final Reinstatement	70 days	Sun 22/9/24	Sat 30/11/24																												
433	Area VIII (Cable Trench - LGT3)	288 days	Sun 1/12/24	Sun 14/9/25																												
434	Removal of Ground Finishes	30 days	Sun 1/12/24	Mon 30/12/24																												
435	Handover to Paul Y. for cable laying by Employer's Specifi	118 days	Tue 31/12/24	Sun 27/4/25																												
436	Backfilling	80 days	Mon 28/4/25	Wed 16/7/25																												
437	Provision of Deck (Section VIII)	218 days	Tue 31/12/24	Tue 5/8/25																												
438	Construct Permanent Paving & Final Reinstatement	60 days	Thu 17/7/25	Sun 14/9/25																												
439	Area V (Cable Trench - GT9)	473 days	Mon 15/9/25	Thu 31/12/26																												
440	Existing Trench wall modification	30 days	Mon 15/9/25	Tue 14/10/25																												
441	Removal of Ground Finishes	61 days	Wed 15/10/25	Sun 14/12/25																												
442	Handover to Paul Y. for cable laying by Employer's Specifi	118 days	Mon 15/12/25	Sat 11/4/26																												
443	Backfilling	100 days	Sun 12/4/26	Mon 20/7/26																												
444	Construct Permanent Paving & Final Reinstatement	164 days	Tue 21/7/26	Thu 31/12/26																												
445	Area VI & VII (Cable Trench - GT9)	412 days	Sat 15/11/25	Thu 31/12/26																												
446	Removal of Ground Finishes	30 days	Sat 15/11/25	Sun 14/12/25																												
447	Handover to Paul Y. for cable laying by Employer's Specifi	118 days	Mon 15/12/25	Sat 11/4/26																												
448	Backfilling	170 days	Sun 12/4/26	Mon 28/9/26																												
449	Provision of Deck (Section VII)	288 days	Mon 15/12/25	Mon 28/9/26																												
450	Construct Permanent Paving & Final Reinstatement	94 days	Tue 29/9/26	Thu 31/12/26																												
451	Completion of Area I-VIII at LMX	0 days	Thu 31/12/26	Thu 31/12/26																												
452	Completion of Remove of sub-base, backfill, screeding etc. for	0 days	Thu 31/12/26	Thu 31/12/26																												
453	E2: Total completion for all remaining works	0 days	31/23/26	31/23/26																												
454	Contract Completion	0 days	Thu 31/12/26	Thu 31/12/26																												

Tender Program of Contract No. 21-83005 Civil Works for Reprovision of OCGT at Lamna Island Power Station		Task		Summary		Start-only		Critical		Progress	
		Milestone		Manual Summary		Finish-only		Critical Split			

Appendix B2 Tentative Decommissioning and Construction Programme (E&M Contractor)



Re-provision of Open Cycle Gas Turbines at Lamma Power Station
 Monthly EM&A Report for December 2023



Appendix C Summary of EMIS

Table C.1 Mitigation Measures and their Implementation in the Reporting Month

EM&A Log Ref.	Recommended Mitigation Measures	Implementation Status
	AIR QUALITY	
EM&A: S2	Impervious sheet will be provided for skip hoist for material transport.	Complied
EM&A: S2	The area where dusty work takes place should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after dusty activities as far as practicable.	Complied
EM&A: S2	All dusty materials should be sprayed with water or a dust suppression chemical immediately prior to any loading, unloading or transfer operation.	Complied
EM&A: S2	Dropping heights for excavated materials should be controlled to a practical height to minimise the fugitive dust arising from unloading.	Complied
EM&A: S2	During transportation by truck, materials should not be loaded to a level higher than the side and tail boards, and should be dampened or covered before transport.	Complied
EM&A: S2	Temporary stockpiles of dusty materials will be either covered entirely by impervious sheets or sprayed with water to maintain the entire surface wet all the time.	Complied
EM&A: S2	Stockpiles of more than 20 bags of cement, dry pulverised fuel ash and dusty construction materials will be covered entirely by impervious sheeting sheltered on top and 3-sides.	Complied
EM&A: S2	All exposed areas will be kept wet always to minimise dust emission.	Complied
EM&A: S2	Ultra-low-sulphur diesel (ULSD) will be used for all construction plant on-site, as defined as diesel fuel containing not more than 0.005% sulphur by weight) as stipulated in Environment, Transport and Works Bureau Technical Circular (ETWB-TC(W)) No 19/2005 on Environmental Management on Construction Sites.	Complied
EM&A: S2	The engine of the construction equipment during idling will be switched off.	Complied
EM&A: S2	Regular maintenance of construction equipment deployed on-site will be conducted to prevent black smoke emission.	Complied
EM&A: S2	All marine vessels fuelled in Hong Kong will operate using marine light diesel with Sulphur content lower than 0.05%.	Complied
EM&A: S2	NRMMs, e.g. mobile generator and air compressor, will comply with the prescribed emission standards with a proper label approved by EPD.	Complied
EM&A: S2	Electric power supply for on-site machinery will be provided as far as practicable for construction activities.	Complied
EM&A: S2	To ensure proper implementation of the recommended dust mitigation measures and good construction site practices during the decommissioning/ demolition/ construction phases, environmental site audits on weekly basis is recommended throughout the construction period.	Complied

EM&A Log Ref.	Recommended Mitigation Measures	Implementation Status
APCO	Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving construction site.	Complied
	NOISE	
EM&A: S3	Machines and construction plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	Complied
EM&A: S3	Only well-maintained construction plant should be operated on-site and should be serviced regularly.	Complied
NCO	Valid construction noise permits, if required, are available for inspection.	Complied
NCO	Conditions of construction noise permits, if any, for the relevant part(s) of the works are implemented accordingly.	Complied
NCO	Valid noise emission labels are fixed at air compressors and hand held percussive breakers.	Complied
	WATER QUALITY	
EM&A: S4	Wastewater, chemical waste and effluent from cleaning of existing OCGTs would be collected, stored for proper disposal by licensed contractor.	Complied
EM&A: S4	Silt removal facilities such as silt traps or sedimentation facilities will be provided where necessary to remove silt particles from runoff to meet the requirements of the TM standard under the WPCO. The design of silt removal facilities will be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	Complied
EM&A: S4	Appropriate surface drainage will be designed and provided, where necessary.	Complied
EM&A: S4	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Complied
EM&A: S4	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the stormwater drainage system after accidental spillages.	Complied
EM&A: S4	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge, if any, will be adequately designed for the controlled release of storm flows.	Complied
EM&A: S4	The temporary diverted drainage, if any, will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Complied
EM&A: S4	Appropriate numbers of portable toilets shall be provided by a licensed contractor where necessary to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment.	Complied
EM&A: S4	To ensure proper implementation of the recommended water quality mitigation measures and good construction site practices during the decommissioning/ demolition, and construction phases, environmental	Complied

EM&A Log Ref.	Recommended Mitigation Measures	Implementation Status
	site audits on weekly basis is recommended throughout the construction period.	
	WASTE MANAGEMENT	
EM&A: S5	The contractor(s) must ensure that all the necessary waste disposal licences are obtained prior to the commencement of the decommissioning/ demolition and construction works.	Complied
EM&A: S5	The contractor will open a billing account with EPD in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation for the payment of disposal charges.	Complied
EM&A: S5	A trip-ticket system will be established in accordance with DEVB TC(W) No. 6/2010 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at transfer facilities/ landfills, and to control fly-tipping.	Complied
EM&A: S5	A WMP as stated in the PNAP ADV-19 for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established and implemented during the construction phase as part of the Environmental Management Plan (EMP). The Contractor will be required to prepare the EMP and submits it to the Architect/ Engineer under the Contract for approval prior to implementation.	Complied
EM&A: S5	C&D materials will be segregated on-site into public fill and construction waste and stored in different containers or skips to facilitate reuse of the public fill and proper disposal of the construction waste. Specific areas of the Site will be designated for such segregation and storage if immediate use is not practicable. Prefabrication will be adopted as far as practicable to reduce the construction waste arisings.	Complied
EM&A: S5	The contractor(s) will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.	Complied
EM&A: S5	Containers used for storage of chemical wastes will: <ul style="list-style-type: none"> • Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed; • Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and • Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations. 	Complied
EM&A: S5	The storage area for chemical wastes will: <ul style="list-style-type: none"> • Be clearly labelled and used solely for the storage of chemical waste; • Be enclosed on at least 3 sides; • Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; • Have adequate ventilation; • Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and • Be arranged so that incompatible materials are appropriately separated. 	Complied
EM&A: S5	Chemical waste will be disposed of: <ul style="list-style-type: none"> • Via a licensed chemical waste collector; and 	Complied

EM&A Log Ref.	Recommended Mitigation Measures	Implementation Status
	<ul style="list-style-type: none"> To a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Facility which also offers a chemical waste collection service and can supply the necessary storage containers. 	
EM&A: S5	General refuse will be stored in enclosed bins separately from construction and chemical wastes. The general refuse will be delivered separately from construction and chemical wastes for offsite disposal on a daily basis to reduce odour, pest and litter impacts.	Complied
EM&A: S5	Recycling bins will be provided at strategic locations within the Project Site to facilitate recovery of recyclable materials (including aluminium cans, waste papers, glass bottles and plastic bottles, etc.). Materials recovered will be sold for recycling.	Not applicable at this stage
EM&A: S5	To avoid any odour and litter impact, appropriate number of portable toilets will be provided for workers on-site where appropriate.	Not applicable at this stage
EM&A: S5	At the commencement of the decommissioning/demolition and construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including waste reduction, reuse and recycling.	Complied
EM&A: S5	General refuse and non-recyclables will be stored in enclosed bins and collected by existing waste management contractor at Lamma Power Station for disposal at the landfills on a daily basis for avoidance of pest and odour nuisance.	Complied
EM&A: S5	Recycling bins for recyclable materials (including aluminium cans, waste papers, glass bottles and plastic bottles) will be placed at the site office and transported off- site for recycling on a regular basis.	Complied
EM&A: S5	It is recommended that weekly audits of the waste management practices be carried out during the decommissioning/demolition, and construction phases to determine if wastes are being managed in accordance with the recommended good site practices and WMP. The audits will investigate all aspects of waste management including waste generation, storage, handling, recycling, transportation and disposal.	Complied
	LAND CONTAMINATION	
EM&A: S6	During the demolition stage, a Land Contamination Specialist shall oversee the removal / demolition activities and record any new visual signs of potential contamination such as oil leakage or oil stains. The Land Contamination Specialist shall also review the need of additional sampling to capture potential contamination observed during the demolition stage.	Complied
EM&A: S6	SI and sampling shall be carried out when the proposed sampling locations are available after the demolition stage.	Complied
EM&A: S6	Soil and groundwater sampling works will be supervised by a Land Contamination Specialist.	Complied
EM&A: S6	Prior to commencement of demolition works in the Project site, the leftover diesel or other petroleum products in the equipment to be demolished shall be removed as much as possible. The removed diesel or other petroleum products will be reused as far as practicable. The removed diesel and other petroleum products, which cannot be reused are considered as chemical waste and are controlled under the Waste Disposal (Chemical Waste)(General) Regulation. The demolition contractor who will generate the chemical waste or cause it to be	Complied

EM&A Log Ref.	Recommended Mitigation Measures	Implementation Status
	<p>produced should register with the EPD as a chemical waste producer. Removed diesel and petroleum products shall be labelled and stored in accordance with the requirement stipulated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes issued by EPD. The removed petrol and petroleum products are required to be collected by licensed chemical waste collector for disposal. Trip tickets system shall be implemented during the collection and disposal of removed petrol and diesel.</p>	
EM&A: S6	<p>During demolition and construction phases, the following good housekeeping practices shall be implemented to ensure that risk of ground contamination as a result of oil spills or leaks is kept to a practical minimum:</p> <ul style="list-style-type: none"> • Regular visual inspections to detect any early signs of fuel leakage prior to demolition; • Provision of impermeable lining or absorbent materials to contain leaks; • Provision of secondary containment for the temporary storage of removed diesel or petroleum products, demolished structures and pipes; and • Provision of spill control materials and equipment 	Complied
EM&A: S6	<p>To ensure proper implementation of the good housekeeping practices, weekly site inspections should be carried out during the decommissioning/demolition, and construction phases of the Project.</p>	Complied

Remarks:

APCO: Air Pollution Control Ordinance
 EM&A: EM&A Manual
 NCO: Noise Control Ordinance

Appendix D Summary of Site Audit Findings or Recommendation

Civil contractor

Dates of Inspection: 05/12/2023, 12/12/2023, 19/12/2023 and 29/12/2023

Summary of Findings or Recommendation

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

Land Contamination

- No environmental deficiency identified.

E&M contractor

Dates of Inspection: 05/12/2023, 12/12/2023, 19/12/2023 and 28/12/2023

Summary of Findings or Recommendation

Air Quality

- No environmental deficiency identified.

Noise

- No environmental deficiency identified.

Water Quality

- No environmental deficiency identified.

Waste Management

- No environmental deficiency identified.

Land Contamination

- No environmental deficiency identified.

Appendix E

Monthly Waste Flow Table for December 2023

Appendix E1 Monthly Waste Flow Table for December 2023 (Civil Contractor)

Monthly Waste Flow Table for December 2023

Project: Civil Works for Re-Provision of Open Cycle Gas Turbine at Lamna Power Station

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2022, 2023

MM/YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly						
	Excavated Materials				Non-excavated Materials				Metals (steel bar / metal strip) ⁽¹⁾	Metals (aluminum cans) ⁽¹⁾	Paper / cardboard packaging ⁽¹⁾	Plastics ^{(1) & (4)}	Chemical waste (wasted lubricant oil/oil container)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities							
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000L)	(in '000kg)	(in '000kg)	
Jul 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oct 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.21
Jan 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.72
Feb 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.32
Mar 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.26	0.00	0.00	0.00	0.00	0.00	0.00
Apr 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.37
May 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.07
Jun 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.09
Jul 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.87
Aug 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.53
Sep 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.80
Oct 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.25
Nov 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.59	0.00	0.00	0.00	0.00	0.00	34.67
Dec 2023	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.58	0.00	0.00	0.00	0.00	0.00	5.34
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.43	0.00	0.00	0.00	0.00	0.00	157.24

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
0.00 tonnes	26.43 tonnes	157.24 tonnes	0.00 tonnes

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 0.00 tonnes of Inert C&D material were generated from the Project, of which 0.00 tonnes were reused in this and other contracts, and the remaining 0.00 tonnes were disposed as public fill to Fill Banks / Sorting Facilities.

(b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill

(c) 9580 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.

(d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

Notes:

- (1) metal, paper & plastic were collected by recycler
- (2) The performance target of waste recycling is specified in the Contract.
- (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
- (5) Broken concrete for recycling into aggregates.
- (6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.

Appendix E2 Monthly Waste Flow Table for December 2023 (E&M Contractor)

Monthly Waste Flow Table for September 2023

Project: C/N 22 23001 Lamna Repronovision of OCGT Demolition & Erection Work
 Contractor: Kum Shing
 Record by: Chris Cheng
 Year of Record: 2023

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of Non-inert C&D Materials Generated Monthly								
	Excavated Materials			Non-excavated Materials				Metals (steel bar/ metal strip)	Metals (aluminum can)	Paper / cardboard packaging	Plastics	Chemical waste (wasted lubricant oil/oil container)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse		
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill								Disposed in Sorting Facilities	
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000L)	(in '000kg)	(in '000kg)			
Oct-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Nov-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Dec-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Jan-23	0	0	0	0	0	0	0	0	103.24	0	0	0	36	0	19.53	
Feb-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.53	
Mar-23	0	0	0	0	0	0	0	0	150.45	0	0	0	0	0	63.12	
Apr-23	0	0	0	0	0	0	0	0	9.05	26.19	0	0	0	41.8	0	93.29
May-23	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	54.68
Jun-23	0	0	0	0	0	0	0	0	5.8	0	0	0	0	13.4	0	133.69
Jul-23	0	0	0	0	0	0	0	0	0	72.51	0	0	0	0	13.65	226.02
Aug-23	0	0	0	0	0	0	0	0	0	42.14	0	0	0	0	0	191.82
Sep-23	0	0	0	0	0	0	0	0	7.3	123.42	0	0	0	0	0	110.81
Oct-23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.5
Nov-23	0	0	0	0	0	0	0	0	0	156.09	0	0	0	0	0	24.35
Dec-23	0	0	0	0	0	0	0	0	0	229.77	0	0	0	0	0	25.57
Total	0	0	0	0	0	0	0	22.15	903.81	0	0	0	121.2	13.65	1017.91	

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials (Metal (Steel bar/metal strip)) Recycled	C&D Waste (General Refuse) Disposed of at Landfill	Chemical Waste
22.15 tonnes	903.81 tonnes	1017.91 tonnes	121.20 kilo litre 13.65 tonnes

Where

- (A) Inert C&D materials include bricks, concrete, building debris, rubble and In total, 22.15 tonnes of inert C&D material were generated from the Project, of which 0.00 tonnes were reused in this and other contracts, and the remaining 22.15 tonnes were disposed as public fill to Fill Banks/Sorting
- (B) Non-inert C&D materials (construction wastes) include metals, paper/cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fills.
- (C) 903810 kg of metals, 0 kg of papers/cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.
- (D) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals waste were disposed of at landfill.

Notes:

- (1) Metal, paper & plastic were collected by recycler.
 (2) The performance target of waste recycling are specified in
 (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 (4) Plastics refer to plastic bottles/containers, plastic/foam from packaging materials.
 (5) Broken concrete for recycling into aggregates.
 (6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.