ANEWR

Civil Engineering and Development Department
4/F, Civil Engineering and Development Building
Port Works Division
101 Princess Margaret Road
Ho Man Tin
Kowloon

Your reference:

Our reference: HKCEDD15/50/107547

Date: 15 September 2021

Attention: Ms Katy S L Lam

BY EMAIL & POST
(email.: ksllam@cedd.gov.hk)

Dear Sirs

Agreement No.: PI 3/2020
Independent Environmental Checker for
Lei Yue Mun Waterfront Enhancement Project
Verification of Monthly Environmental Monitoring and Audit Report (August 2021)

We refer to emails of 9, 13 and 14 September 2021 from Acuity Sustainability Consulting Limited attaching a Monthly Environmental Monitoring and Audit Report (August 2021).

We have no comments and hereby verify the captioned report in accordance with Clause 3.4 of the Environmental Permit no. EP-564/2018 and Section 13.4 of the Environmental Monitoring and Audit Manual.

Should you have any queries, please do not hesitate to contact the undersigned or our Ms Karen Po on 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/CWKK/PKWK/lsmt

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土木工程拓展署
Civil Engineering and Development Department

Contract No. PI 2/2020

Environmental Monitoring Works for Lei Yue Mun Waterfront Enhancement Project

Monthly EM&A Report (August2021)

Document No.

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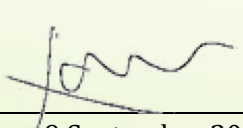
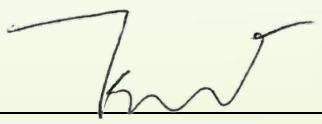
Signature			
Date:	9 September 2021	9 September 2021	9 September 2021

REVISION HISTORY

REV.	DESCRIPTION OF MODIFICATION	DATE
0	First Issue for Comments	9 September 2021

CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

A1. The Project, Lei Yue Mun Waterfront Enhancement Project, is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is currently governed by an Environmental Permit (EP No. EP-564/2018) for the construction and operation of the Project.

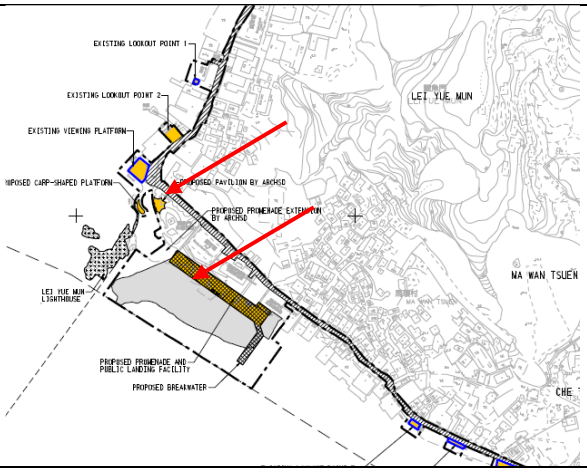
A2. The Civil Engineering and Development Department (CEDD) commissioned Acuity Sustainability Consulting Limited (ASCL) to undertake the role of Environmental Team (ET) for carrying out the Environmental Monitoring & Audit (EM&A) works during the construction phase of the Project in accordance with the EM&A Manual (the Manual).

A3. In accordance with the Manual for the Project, the results and findings of all EM&A work required in this Manual shall be reported in the monthly EM&A reports prepared by the ET and endorsed by the Independent Environmental Checker (IEC).

A4. The construction of land-based works and marine-based works were scheduled to commence on 11 May 2021 and tentatively mid-September 2021 respectively. This is the 4th Monthly EM&A Report for the Project summarizing the monitoring results and audit findings of the EM&A programme at selected locations at and around Lei Yue Mun (LYM) during the reporting period from 1 August 2021 to 31 August 2021.

SUMMARY OF MAIN WORKS UNDERTAKEN & KEY MITIGATION MEASURES IMPLEMENTED

A5. Key activities carried out in this reporting period for the Project included the followings:

Works Description	Location
• Installation of pipe piles at Landing Facility • Installation of steel casing for pre-bored H piles at Landing Facility • Levelling off the existing site formation using rockfill • Formwork, rebar fixing and demolition work at Viewing platform	

A6. The major environmental impacts brought by the above construction works include:

- Construction dust and noise generation from construction works and excavation works
- Waste generation from the construction activities

A7. The key environmental mitigation measures implemented for the Project in this reporting period associated with the above construction works include:

- Dust suppression by regular wetting and water spraying for construction works
- Reduction of noise from equipment and machinery on-site
- Sorting and storage of general refuse and construction waste

SUMMARY OF EXCEEDANCE & INVESTIGATION & FOLLOW-UP

A8. Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at LYM in the reporting month. No exceedance of Action or Limit Level was recorded.

A9. Weekly site inspections of the construction work by ET were carried out on 4, 12, 19 and 27 August 2021 to audit the mitigation measures implementation status. Observations were recorded in the site inspection checklists and provided to the contractors together with the appropriate follow-up actions where necessary.

COMPLAINT HANDLING AND PROSECUTION

A10. No project-related environmental complaint was received during the reporting period.

A11. Neither notifications of summons nor prosecution was received for the Project.

REPORTING CHANGE

A12. There was no change to be reported that may affect the on-going EM&A programme.

SUMMARY OF UPCOMING KEY ISSUES AND KEY MITIGATION MEASURES

A13. Key activities anticipated in the next reporting period for the Project will include the followings:

Works Description	**Location**
273mm Dia. pipe piling works at viewing platform	Viewing Platform
Relocation of Existing Gabion Blocks	Viewing Platform
610mm Dia. pipe piling works and pre-bored socketed H piles	Landing Facility
Dredging	Landing Facility and Breakwater Construction Area
Construction of Skin Wall and R.C Paving	Lookout Point
Infill Grouting of Pipe Piles	Lookout Ponit
Concrete work, formwork / rebar fixing and footing works	Viewing Platform

A14. The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from excavation and construction works
- Waste generation from construction activities
- Impact on water quality from marine construction works and inland construction works

A15. The key environmental mitigation measures for the Project in the coming reporting period associated with the above construction works will include:

- Dust suppression by regular wetting and water spraying for construction works
- Reduction of noise from equipment and machinery on-site
- Sorting and storage of general refuse and construction waste
- The dredging rate shall not exceed 100 m^3 per hour with a maximum working period of 12 hours per day throughout the construction phase and operation phase.
- Silt curtains should be deployed enclosing the dredging operation. Regular inspection on the silt curtain on the silt curtain condition by the contractor should be carried out.

1. BASIC PROJECT INFORMATION

1.1. BACKGROUND

Civil Engineering and Development Department (CEDD) has contracted Concentric - Hong Kong River Joint Venture (CHKRJV) to carry out the Construction of Lei Yue Mun Public Landing Facility under Contract No. CV/2020/09; and Architectural Services Department (ArchSD) has contracted Milestone Builder Engineering Limited to carry out the development of a waterfront promenade and related improvement works under Contract No. SS J521 for the Lei Yue Mun Waterfront Enhancement Project (the Project).

Acuity Sustainability Consulting Limited (ASCL) is commissioned by CEDD to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-219/2018) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Project; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements under Contract No. PI 2/2020.

Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection granted the Environmental Permit (No. EP-564/2018) to CEDD for the Project.

1.2. THE REPORTING SCOPE

This is the 4th Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 August to 31 August 2021.

1.3. PROJECT ORGANIZATION

The Project Organization structure for Construction Phase is presented in **Figure 1.1**. The key personnel's' contacts are presented in **Table 1.1** and **Table 1.2**.

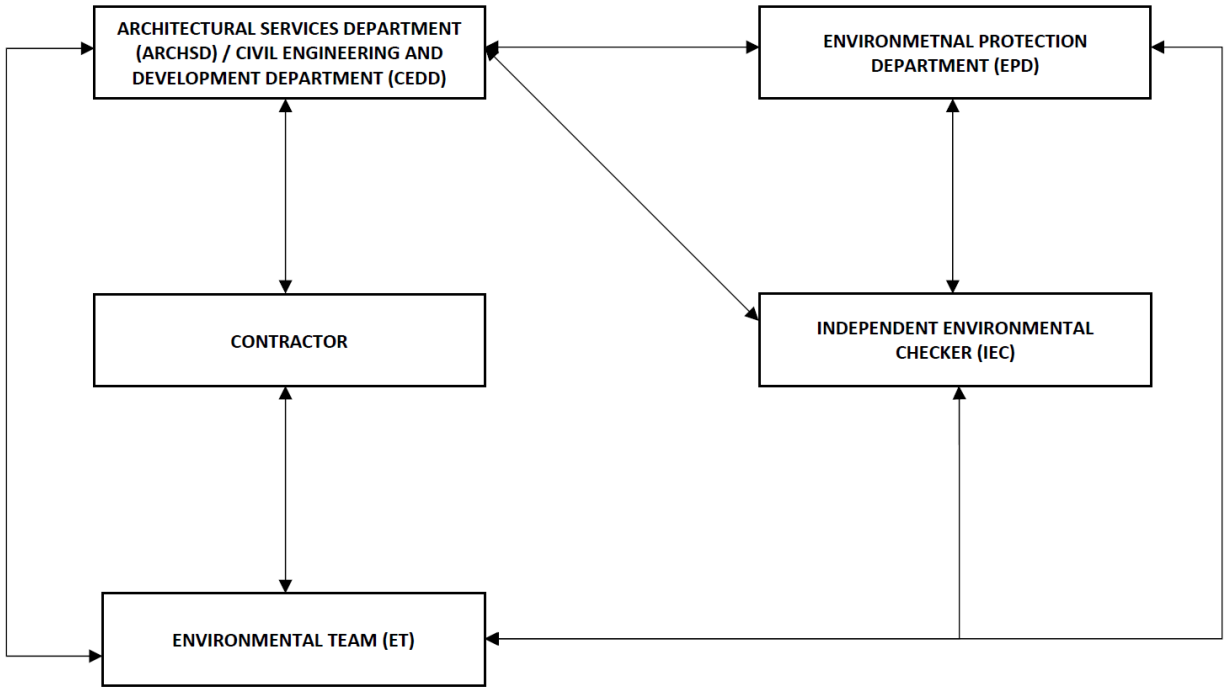


Figure 1.1 Project Organization Chart

Table 1.1 Key Personnel's' Contact for the Construction of a Public Landing Facility and Improvement Works to Existing Lookout Points and Viewing Platform

Party	Position	Name	Phone
Civil Engineering and Development Department	Engineer	Ms. Lam Sau Lai, Katy	2762 5044
ANewR	Independent Environmental Checker	Mr. Choi Pui Sum, James	2618 2831
Acuity Sustainability Consulting Limited	Environmental Team	Mr. Li Wai Ming, Kevin	2698 6833
Concentric - Hong Kong River Joint Venture	Contractor	Mr. Cheung C Y, Joe	9263 6339

Table 1.2 Key Personnel's' Contact for the Development of a Waterfront Promenade and Related Improvement Works

Party	Position	Name	Phone
Architectural Services Department	Project Manager	Mr. Ken Chan	2867 3850
ANewR	Independent Environmental Checker	Mr. Choi Pui Sum, James	2618 2831

Party	Position	Name	Phone
Acuity Sustainability Consulting Limited	Environmental Team	Mr. Li Wai Ming, Kevin	2698 6833
Milestone Builder Engineering Ltd.	Environmental Officer	Ms. Mandy Fung	6506 0375

1.4. Summary of Construction Works

Details of the major construction activities undertaken in this reporting period are shown as below. The construction programme is presented in **Appendix A**.

Key activities carried out in this reporting period for the Project included the followings:

Works Description	Location
Installation of pipe piles at Lookout Point.	Lookout Point Area
Marine predrilling works at Breakwater Area.	Breakwater Area
Installation of pipe piles at landing facility.	Landing Facility Area
Binding and excavation works at Viewing Platform	Viewing Platform

1.5. Summary of Environmental Status

A summary of the valid permits, licences, and/or notifications on environmental protection for this Project is presented in **Table 1.3**.

Table 1.3 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations for the Construction of a Public Landing Facility and Improvement Works to Existing Lookout Points and Viewing Platform

Permit/ Licenses/ Notification	Reference	Validity Period
Environmental Permit	EP-564/2018	Throughout the Contract
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Ref. No.: 463353	Throughout the Contract
Chemical Waste Producer Registration	5213-298-C3752-02	Throughout the Contract
Billing Account for Disposal of Construction Waste	7039364	Throughout the Contract

Table 1.4 Summary of the Status of Valid Environmental Licence, Notification, Permit and Documentations for the Development of a Waterfront Promenade and Related Improvement Works

Permit/ Licenses/ Notification	Reference	Validity Period
Environmental Permit	EP-564/2018	Throughout the Contract
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation (Form NA)	Ref. No.: 467619	Throughout the Contract
Chemical Waste Producer Registration	5312-298-M2939-02	Throughout the Contract

Permit/ Licenses/ Notification	Reference	Validity Period
Billing Account for Disposal of Construction Waste	7039353	Throughout the Contract

The status for all environmental aspects is presented in **Table 1.5**.

Table 1.5 Summary of Status for Key Environmental Aspects under the EM&A Manual

Parameters	Status
Water Quality	
Baseline Monitoring under EM&A Manual	The baseline monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.3 on 25 May 2021
Impact Monitoring	N/A as marine works have not commenced yet
Noise	
Baseline Monitoring	The baseline monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under EP Condition 3.3 on 25 May 2021
Noise Management Plan	The Noise Management Plan was submitted by the Contractor on 4 May 2021 and approved on 10 May 2021
Impact Monitoring	On-going
Ecology	
Conceptual Landscape Layout Plan	The Conceptual Landscape Layout Plan will be submitted no later than three months prior to the commencement of detailed design of the landscape and architectural works of the Project under EP Condition 2.10
Coral Baseline Survey Report	The Coral Baseline Survey Report was submitted to EPD under EP Condition 2.14 on 12 May 2021 and approved by EPD on 18 May 2021
Coral Translocation Plan	The Coral Translocation Plan was submitted to EPD under EP Condition 2.16 on 28 April 2021 and approved on 18 May 2021
Coral Review Report	The Coral Review Report will be submitted no later than three months before the commencement of each maintenance dredging under EP Condition 2.20
Waste Management	
Mitigation Measures in Waste Monitoring Plan	On-going
Environmental Audit	
Site Inspection covering Measures of Air Quality, Noise Impact, Water Quality, Waste, Ecological Quality, Fisheries, Landscape and Visual	On-going

Other than the EM&A work by ET, environmental briefings, trainings and regular environmental management meetings were conducted, in order to enhance environmental awareness and closely monitor the environmental performance of the contractors.

The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the EM&A Manual. A summary of implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

2. NOISE

2.1. MONITORING REQUIREMENTS

To ensure no adverse noise impact, noise monitoring is recommended to be carried out within 300m radius from the nearby noise sensitive receivers (NSRs), during construction phase. The NSRs selected as monitoring station are (i) NM1 – Village house in Lei Yue Mun Hoi Pong Road Central, (ii) NM2-A – No.79B, Lei Yue Mun Hoi Pong Road East, (iii) NM3 – Jockey Club Lei Yue Mun Plus and (iv) NM4 – No. 21C, Lei Yue Mun Hoi Pong Road East respectively.

In accordance with the EM&A Manual, baseline noise level at the noise monitoring stations were established as presented in the Baseline Monitoring Report. Impact noise monitoring was conducted once per week in the form of 30-minutes measurements Leq, L10 and L90 levels recorded at each monitoring station between 0700 and 1900 on normal weekdays.

Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at LYM in the reporting month. The results are presented in **Appendix F.**

Construction noise level were measured in terms of the A-weighted equivalent continuous sound pressure level (LAeq). Leq $_{30min}$ was used as the monitoring parameter for the time period between 0700 and 1900 on normal weekdays. **Table 2.1** summarizes the monitoring parameters, frequency and duration of the impact noise monitoring.

Table 2.1 Noise Monitoring Parameters, Time, Frequency and Duration

Time	Duration	Interval	Parameters
Daytime: 0700-1900	Day time: 0700-1900 (during normal weekdays)	Continuously in $L_{eq\ 5min}$/$L_{eq\ 30min}$ (average of 6 consecutive $L_{eq\ 5min}$)	$L_{eq\ 30min}$ $L_{10\ 30min}$ & $L_{90\ 30min}$

2.2. MONITORING LOCATIONS

The monitoring locations should normally be made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. A correction of +3dB(A) should be made to the free-field measurements.

According to the environmental findings detailed in the EIA report and Baseline Monitoring Report, the designated locations for the construction noise monitoring are listed in **Table 2.2** below.

Table 2.2 Noise Monitoring Locations

Station	Noise Monitoring Stations	Monitoring Location	Position
NM1	Village house in Lei Yue Mun Hoi Pong Road Central	Pedestrian Road on Ground Floor	1 m from facade

Station	Noise Monitoring Stations	Monitoring Location	Position
NM2	No.81, Lei Yue Mun Hoi Pong Road East	Pedestrian Road on Ground Floor	1 m from facade
NM3	Jockey Club Lei Yue Mun Plus	Fenced Road on Ground Floor	1 m from facade
NM4	No. 21C, Lei Yue Mun Hoi Pong Road East	Fenced Road on Ground Floor	1 m from facade

The original construction noise monitoring station NM2 was selected at the façade of No. 81 of Lei Yue Mun Hoi Pong Road East. However, the residents of the premises at No. 81 of Lei Yue Mun Hoi Pong Road East do not allow the setting up of the construction noise monitoring station NM2. No. 79B, Lei Yue Mun Hoi Pong Road East, was proposed as the alternative noise monitoring location for set up of construction noise monitoring station named as NM2-A.

A Proposal for Alternative Noise Monitoring Station, which was certified by the ET Leader and verified by the IEC, has been prepared to conclude that the alternative construction noise monitoring station NM2-A could conform to relevant requirements as set out in the EM&A Manual, namely:

- locate close to the major site activities which are likely to have noise impacts;
- locate close to the most affected existing NSRs; and
- take into account the possibility of minimizing disturbance to occupants at the NSRs during monitoring.

The Proposal for Alternative Noise Monitoring Station NM2-A has been approved by EPD on 16 April 2021.

The latest locations for the construction noise monitoring are listed in **Table 2.3**.

Table 2.3 Updated Noise Monitoring Stations for Baseline and Impact Monitoring

Station	Noise Sensitive Receiver	Monitoring Location	Position
NM1	Village house in Lei Yue Mun Hoi Pong Road Central	Pedestrian Road on Ground Floor	1 m from facade
NM2-A	No.79B, Lei Yue Mun Hoi Pong Road East	Pedestrian Road on Ground Floor	1 m from facade
NM3	Jockey Club Lei Yue Mun Plus	Fenced Road on Ground Floor	1 m from facade
NM4	No. 21C, Lei Yue Mun Hoi Pong Road East	Fenced Road on Ground Floor	1 m from facade

The location of all original construction noise monitoring stations and the alternative construction noise monitoring station are shown in **Figure 2.1**.

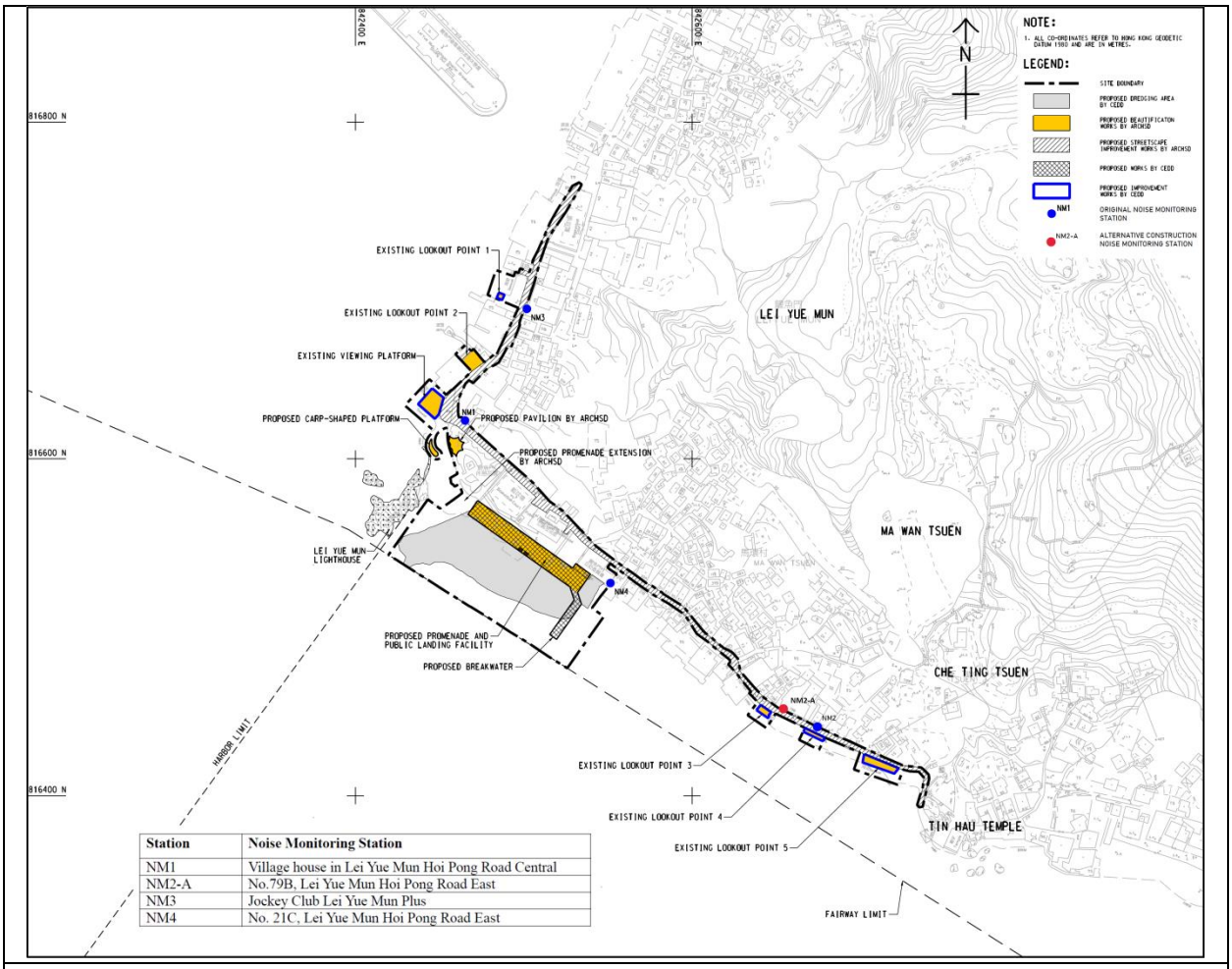


Figure 2.1 Noise Monitoring Locations

2.3. IMPACT MONITORING METHODOLOGY

Integrated sound level meter shall be used for the noise monitoring. The meter shall be in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels before and after the noise measurements agree to within 1.0 dB(A). Calibration certificates of the instruments used are shown at **Appendix E**.

Noise measurements shall not be made in the presence of fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Table 2.4 Impact Noise Monitoring Equipment

Equipment	Make and Model
Sound Level Meter	Scarlet ST-11D

2.4. Action and Limit Levels

The Action/Limit Levels are in line with the criteria of Practice Note for Professional Persons (ProPECC PN 2/93) "Noise from Construction Activities – Non-statutory Controls" and Technical Memorandum on Environmental Impact Assessment Process issued by HKSAR Environmental Protection Department ["EPD"] under the Environmental Impact Assessment Ordinance, Cap 499, S.16 are presented in **Table 2.5**.

Table 2.5 Action and Limit Levels for Noise per EM&A Manual

Time Period	Action	Limit (dB(A))
0700-1900 on normal weekdays	When one documented complaint is received from any one of the noise sensitive receivers	75 dB(A) for residential areas; 70 dB(A) for school; and 65 dB(A) during examination period

Notes: Limits specified in the GW-TM and IND-TM for construction and operation noise, respectively.

If exceedances were found during noise monitoring, the actions in accordance with the Event and Action Plan shall be carried out according to **Appendix D**.

2.5. Monitoring Results and Observations

Referring to EM&A manual Section 4.6.1.1 construction noise monitoring should be carried out when there are project-related construction activities undertaken within a radius of 300m from the monitoring stations. Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at LYM in the reporting month. The below **Table 2.6** summarized the results of the monitoring.

Table 2.6 Summary of Noise Monitoring Results in the Reporting Month

Location	Noise in dB(A)
	$L_{eq\ 30min}$ Daytime (7:00-19:00 on normal weekdays)
NM1	62.6 – 64.9
NM2-A	54.8 – 59.9

Location	Noise in dB(A)
	$L_{eq\ 30min}$ Daytime (7:00-19:00 on normal weekdays)
NM3	65.2 – 68.3
NM4	63.4 – 65.6

3. WATER QUALITY

As identified in the EIA Report, suspended sediment is the most critical water quality parameter caused by the dredging works. Marine water quality monitoring should be carried out during the dredging and filling operation to ensure that any unacceptable increase in suspended solids / turbidity and decrease in dissolved oxygen due to the dredging activities could be readily detected and timely action be taken to rectify the situation. In addition, baseline water quality monitoring was conducted prior to the commencement of marine construction activities. The following Section provides details of the water quality monitoring to be undertaken by the Environmental Team (ET). The water quality monitoring programme will be carried out to allow any deteriorating water quality to be readily detected and timely action taken to rectify the situation.

As the construction of marine-based works are scheduled to commence in mid-September 2021 tentatively, no water quality monitoring was conducted in the reporting month.

3.1. WATER QUALITY PARAMETERS

The parameters that have been selected for measurement in situ and in the laboratory are those that were either determined in the EIA to be those with the most potential to be affected by the construction works or are a standard check on water quality conditions. Parameters to be measured in the impact monitoring are listed in **Table 3.1**.

Table 3.1 Parameters measured in the marine water quality monitoring

Parameters	Unit	Abbreviation
In-situ measurements		
Dissolved oxygen	mg/L	DO
Temperature	^{o}C	-
pH	-	-
Turbidity	NTU	-
Salinity	mg/L	-
Laboratory measurements		
Suspended Solids	mg/L	SS

3.2. MONITORING EQUIPMENT

For water quality monitoring, the following equipment will be used:

Dissolved Oxygen and Temperature Measuring Equipment - The instrument will be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and will be operable from a DC power source. It will be capable of measuring: dissolved oxygen levels in the range of 0 - 20 mg/L and 0 - 200% saturation; and a temperature of 0 - 45 degrees Celsius. It shall have a membrane electrode with automatic temperature compensation complete with a cable of not less than 35 m in length. Sufficient stocks of spare electrodes and cables shall be available for replacement where necessary (e.g. YSI model 59 DO meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).

Turbidity Measurement Equipment - The instrument will be a portable, weatherproof turbidity-measuring unit complete with cable, sensor and comprehensive operation manuals. The equipment will be operated from a DC power source, it will have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU and will be complete with a cable with at least 35 m in length (for example Hach 2100P or an approved similar instrument).

pH Measurement Instrument - The instrument should consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It should be readable to 0.1 pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 should be used for calibration of the instrument before and after use.

Salinity Measurement Instrument - A portable salinometer capable of measuring salinity in the range of 0 - 40 ppt will be provided for measuring salinity of the water at each monitoring location.

Sample Containers and Storage - Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4 °C without being frozen) and delivered to the laboratory and analyzed as soon as possible after collection. Sufficient volume of samples should be collected to achieve the detection limit.

Water Depth Gauge – A portable, battery-operated echo sounder (for example Seafarer 700 or a similar approved instrument) will be used for the determination of water depth at each designated monitoring station. This unit will preferably be affixed to the bottom of the work boat if the same vessel is to be used throughout the monitoring programme. The echo sounder should be suitably calibrated. The ET shall seek approval for their proposed equipment with the client prior to deployment.

Positioning Device – A Global Positioning System (GPS) shall be used during monitoring to allow accurate recording of the position of the monitoring vessel before taking measurements. The Differential GPS, or equivalent instrument, should be suitably calibrated at appropriate checkpoint (e.g. Quarry Bay Survey Nail) to verify that the monitoring station is at the correct position before the water quality monitoring commence.

Water Sampling Equipment - A water sampler, consisting of a PVC or glass cylinder of not less than two litres, which can be effectively sealed with cups at both ends, will be used (e.g. Kahlsico Water Sampler 13SWB203 or an approved similar instrument). The water sampler will have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

3.3. SAMPLING / TESTING PROTOCOLS

All in situ monitoring instruments will be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at monthly intervals throughout the stages of the water quality monitoring. Responses of sensors and electrodes will be checked with certified standard solutions before each use.

On-site calibration of field equipment shall follow the "Guide to On-Site Test Methods for the Analysis of Waters", BS 1427: 2009. Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when equipment is under maintenance, calibration etc.

3.4. LABORATORY MEASUREMENT AND ANALYSIS

All laboratory work shall be carried out in a HOKLAS accredited laboratory. Sufficient volume of each water sample shall be collected at the monitoring stations for carrying out the laboratory analyses. Using chain of custody forms, collected water samples will be transferred to an HOKLAS accredited laboratory for immediate processing. The determination work shall start within 24 hours after collection of the water samples. The laboratory measurements shall be provided to the client within 5 working days of the sampling event. Analytical methodology and sample preservation of other parameters will be based on the latest edition of Standard Methods for the Examination of Waste and Wastewater published by APHA, AWWA and WPCF and methods by USEPA, or suitable method in accordance with requirements of HOKLAS or another internationally accredited scheme.

Detailed testing methods, pre-treatment procedures, instruments use, Quality Assurance / Quality Control (QA/QC) details (such as blank, spike recovery, number of replicate samples per batch, etc.), detection limit and accuracy were submitted to EPD for approval on 3 February 2021 prior to the commencement of monitoring programme. EPD may also request the laboratory to carry out analysis of known standards provided by EPD for quality assurance. The QA / QC shall be in accordance with the requirements of HOKLAS or international accredited scheme. The QA/ QC results shall be reported. The testing methods and related proposal were checked and certified by IEC before submission to EPD for approval.

Parameters for laboratory measurements, their standard methods and their detection limits are presented in **Table 3.2**.

Table 3.2 Laboratory measurements, standard methods and corresponding detection limits of marine water quality monitoring

Parameter	Standard Method	Detection Limit	Accuracy
Suspended Solids (mg/L)	APHA 2540D	1.0*	±17%

Remark *: Albeit the selected HOKLAS accredited laboratories' standard testing method of total suspended solid according to APHA Method 2540D is capable of reporting the results to 1 mg/L, the laboratory advised that results reported between 1 and 2 mg/L shall be considered to be used as reference value and receive no HOKLAS accreditation for this particular range of result

If exceedances were found during water monitoring, the actions in accordance with the Event and Action Plan shall be carried out according to **Appendix G**.

3.5. MONITORING LOCATION

The water quality monitoring locations for baseline are in accordance to the EM&A Manual and detailed in **Table 3.3** below. The water quality monitoring schedule should be submitted to EPD at least 1 week before the first day of the monitoring month.

Table 3.3 Location of Water Quality Monitoring Station

Station	Easting	Northing	Description
C1	842134	816765	Control Station
C2	842946	816172	Control Station
M1	842605	816433	Coral Communities (Impact Monitoring Station)
M2	842329	816615	100m away from the dredging site (Impact Monitoring Station)
M3	842639	816410	Coral Communities (Impact Monitoring Station)
M4	842515	816878	Sam Ka Tsuen Typhoon Shelter (Impact Monitoring Station)

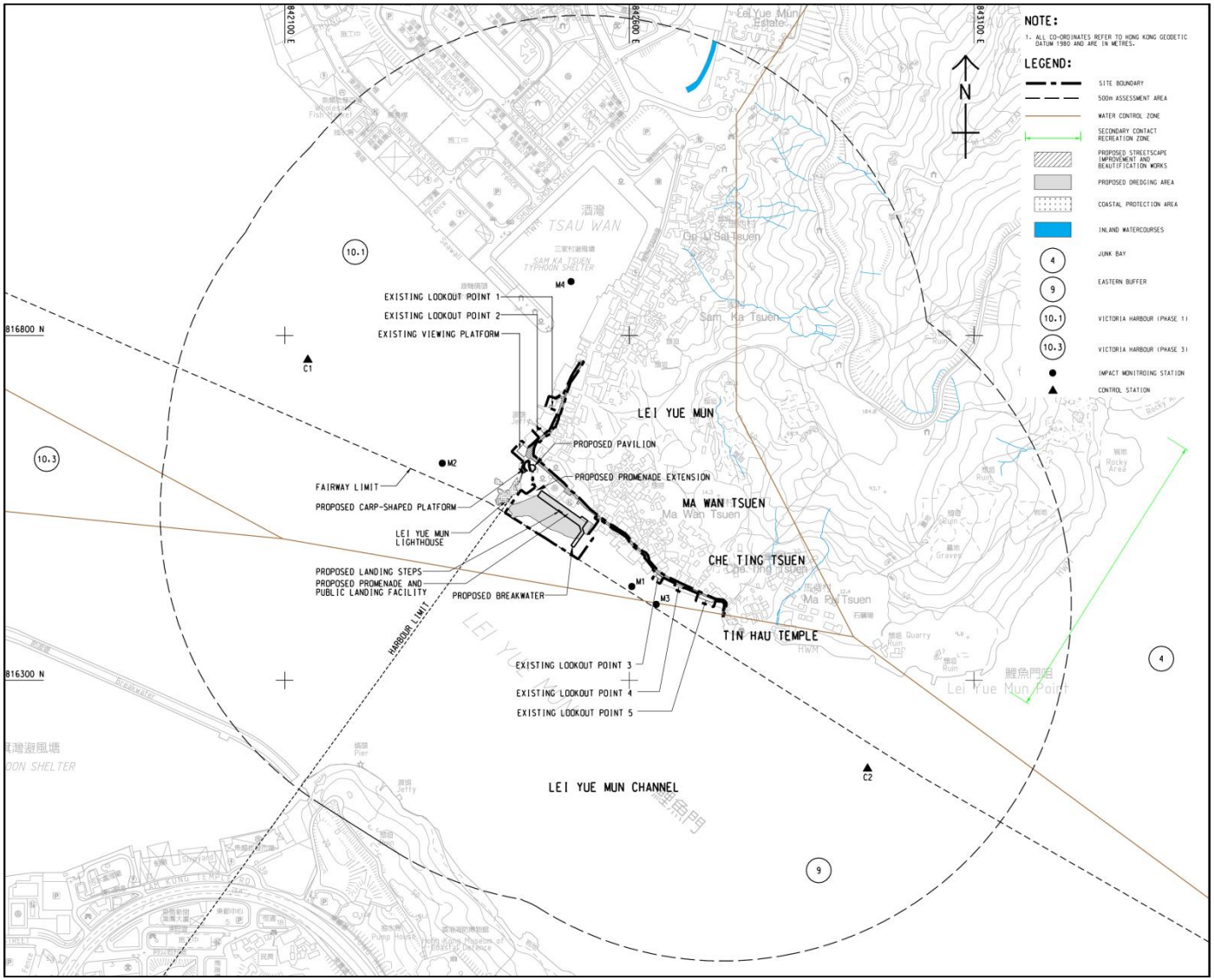


Figure 3.1 Water quality monitoring locations under EM&A Manual

3.6. Sampling Frequency

During periods when there are dredging or filling works, impact monitoring should be undertaken at the monitoring stations as shown in **Figure 3.1** and **Table 3.3** three days per week during the construction phase after the commencement of marine construction works and dredging or filling activities. Monitoring at each station would be undertaken at both mid-ebb and mid-flood tides on the same day. The interval between two sets of monitoring would not be less than 36 hours. The monitoring frequency would be increased in the case of exceedances of Action/Limit Levels if considered necessary by ET. Monitoring frequency would be maintained as far as practicable.

3.7. Sampling Depths & Replication

For water quality monitoring, each station will be sampled and measurements/ water samples will be taken at three depths, 1 m below the sea surface, mid-depth and 1 m above the seabed. For stations that are less than 3 m in depth, only the mid depth sample shall be taken. For stations that are less than 6 m in depth, only the surface and seabed sample shall be taken. For in situ measurements, duplicate readings shall be made at each water depth at each station. Duplicate water samples shall be collected at each water depth at each station.

3.8. Action and Limit levels

The Action and Limit Levels have been set based on the derivation criteria specified in the EM&A Manual, as shown in **Table 3.4** below. Based on the baseline water quality monitoring data and the derivation criteria specified in **Table 3.4**, the Action/Limit Levels have been derived and are presented in **Table 3.5**.

3.9. Monitoring Programme

The ET of the Project had conducted the baseline water monitoring between 15 April 2021 to 11 May 2021 at all six designated monitoring stations (i.e. C1, C2, M1, M2, M3 and M4). The monitoring results was presented in Baseline Water Quality Monitoring Report separately.

The commencement of marine construction activities for the Project is expected to be commenced in mid-September 2021.

Table 3.4 Criteria of Action and Limit Levels for Water Quality

Parameters	Action	Limit
During the Dredging and Filling Operation of the Project		
DO in mg/L	Surface and Middle ≤5%-ile of baseline data for surface and middle layers Bottom ≤5%-ile of baseline data for bottom layer	Surface and Middle ≤4 mg/L or 1%-ile of baseline data for surface and middle layers Bottom ≤2 mg/L or 1%-ile of baseline data for bottom layer
SS in mg/L (Depth-averaged)	≥ 95 %-ile of baseline data or 120% of control station's SS at the same tide of the same day	≥ 99 %-ile of baseline data or 130% of control station's SS at the same tide of the same day and specific sensitive receiver water quality requirements (e.g. required SS level for concerned seawater intakes)
Turbidity in NTU (Depth-averaged)	≥ 95 %-ile of baseline data or 120% of control station's SS at the same tide of the same day	≥ 99 %-ile of baseline data or 130% of control station's SS at the same tide of the same day

Table 3.5 Derived Action and Limit Levels for Water Quality

Parameters	Action	Limit
During the Dredging and Filling Operation of the Project		
DO in mg/L	Surface and Middle 7.95 mg L^{-1} Bottom 7.91 mg L^{-1}	Surface and Middle 4 mg L^{-1} Bottom 2 mg L^{-1}
SS in mg/L (Depth-averaged)	6.73 mg L^{-1} or 120% of control station's SS at the same tide of the same day	17.60 mg L^{-1} or 130% of control station's SS at the same tide of the same day and specific sensitive

		receiver water quality requirements (e.g. required SS level for concerned seawater intakes)
Turbidity in NTU (Depth-averaged)	7.42 NTU or 120% of control station's SS at the same tide of the same day compared with corresponding data from control station	7.79 NTU or 130% of control station's SS at the same tide of the same day compared with corresponding data from control station

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For Turbidity, SS and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3.10. MONITORING RESULTS AND OBSERVATIONS

No water quality monitoring was conducted in the reporting period because marine-based works was scheduled to commence in mid-September 2021.

4. ECOLOGICAL

4.1. INTRODUCTION

Background

Lei Yue Mun (LYM) is one of the most popular tourist attractions in Hong Kong, for its pleasant seaside ambience and excellent seafood. LYM was included in the Tourism Commission (TC)'s Tourism District Enhancement Programme to enrich Hong Kong's appeal to visitors. In 2003, initial minor improvements were completed along the LYM waterfront, and further improvement of facilities along the LYM waterfront was planned.

The Project, Lei Yue Mun Waterfront Enhancement Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO). An EIA Report under Agreement No. CE 54/2015 (EP) (Report No.: AEIAR-219/2018) for the Project was approved under EIAO on 26 October 2018 in accordance with the EIA Study Brief (No. ESB-287/2015) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). The corresponding Environmental Permit was issued (EP no.: EP-564/2018) by the Director of Environmental Protection (DEP) on 10 December 2018.

The works to be executed under Contract No. CV/2020/09 Construction of Lei Yue Mun Public Landing Facility (hereinafter called "the Contract") mainly comprise the construction of a public landing facility, a breakwater, and structural improvement works to an existing viewing platform and a lookout point. Dredging and excavation works for berthing of vessels at the new public landing facility will be involved, which might directly affect the hard coral colonies. Thus, a coral baseline survey that involves a detail coral mapping survey shall be conducted to ascertain the location, sizes, species and health status of the corals with reference to the extent of marine ecological survey indicated at Figure 9.1 of the EIA Report under the Contract.

Coral mapping surveys were conducted in March 2021, forty-four (44) octocoral colonies recorded on movable boulders shall be translocated to a coral recipient site Fat Tong Chau (FTC), Junk Bay.

Coral translocation was conducted on 20 and 21 May 2021, a total of forty-seven (47) octocoral colonies attached to movable boulders were translocated to the coral recipient site FTC, Junk Bay.

A Post-translocation Coral Survey was conducted on 21 May 2020, to monitor the health condition of the tagged colonies after coral translocation, including the tagged colonies from the donor site (i.e. the proposed dredging area at LYM) and also the tagged naturally occurring corals at the coral recipient site at Fat Tong Chau (FTC), Junk Bay.

Followed by the Post-translocation Coral Survey, Post-translocation monitoring will be conducted quarterly for one year.

4.2. METHOD

Following coral translocation which was undertaken on 20th and 21st May 2021, 10 selected translocated coral colonies as well as the 10 tagged natural coral colonies at the recipient site will be monitored once every 3 months for a period of 12 months. The monitoring team will record the following parameters (using the same methodology adopted during the pre-translocation survey): size, presence, survival, health conditions (percentage of mortality) and percentage of sediment of each translocated coral colonies. The general environmental conditions including weather, sea, and tidal conditions of the coral recipient site will also be monitored.

Photographic records of the translocated and natural coral colonies will be taken as far as possible maintaining the same aspect and orientation as photographs taken for the pre-translocation surveys. All the tags for marking the translocated and natural coral colonies will be removed / retrieved once the monitoring programme is completed.

The results of the post-translocation monitoring surveys should be reviewed with reference to findings of the baseline survey and the data from original colonies at the recipient site.

If, during the post-translocation monitoring, observations of any die-off / abnormal conditions of the translocated corals are made, the ET will inform the Contractor, Independent Environmental Checker (IEC)/ Environmental Project Office (ENPO), Agriculture, Fisheries and Conservation Department (AFCD) and in liaison with AFCD investigate any measures needed.

The results of the post-translocation monitoring will be reviewed with reference to findings of the baseline survey and the data from naturally occurring colonies at the recipient site and evaluated against Action and Limit Levels. Evaluation will be based on recorded changes in percentage of partial mortality of the corals. Action and Limit Levels are defined in **Table 4.2.1** below.

Table 4.2.1 Action and Limit Levels for Coral Post-translocation Monitoring

Parameter	Action Level Definition	Limit Level Definition
Mortality	If during Post-translocation Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that are not recorded on the original corals at the receptor site, then the Action Level is exceeded.	If during the Post-translocation Monitoring a 25% increase in the percentage of partial mortality at more than 20% of the translocated coral colonies occurs that is not recorded at the original corals at the recipient site, then the Limit Level is exceeded.

If observations of any die-off / abnormal conditions of the translocated corals are made during the post-translocation monitoring, the Environmental Team (ET) should inform the Independent Environmental Checker (IEC), main contractor, EPD and AFCD, and liaise with AFCD to investigate any mitigation measures needed.

Post-translocation monitoring results will be evaluated against Action and Limit Levels. Evaluation will be based on recorded changes in percentage of partial mortality of the corals. Action and Limit Levels are defined in Table 2.1.

If the defined Action Level or Limit Level for coral monitoring as listed in **Table 4.2.1** is exceeded, the actions as set out in **Table 4.2.2** will be implemented.

Table 4.2.2 Event and Action Plan for Coral Post-translocation Monitoring

	Action		
Event	**ET Leader**	**IEC**	**Main Contractor**
Action Level Exceedance	1. Check monitoring data; 2. Identify the source(s) of impact; 3. Inform the IEC and main contractor of the findings; 4. Increase the monitoring to at least once a month to confirm findings; 5. Liaise with AFCD to investigate any mitigation measures needed; and 6. Propose mitigation measures for consideration.	1. Discuss monitoring with the ET; 2. Review proposals for additional monitoring and any other measures and advise the main contractor accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make the agreement on the measures to be implemented.
Limit Level Exceedance	1. Undertake Steps 1-5 as in the Action Level Exceedance. If further exceedance of Limit Level, propose enhancement measures for consideration.	1. Discuss monitoring with the ET; 2. Review proposals for additional monitoring and any other measures and advise the main contractor accordingly.	1. Discuss with the IEC additional monitoring requirements and any other measures proposed by the ET; 2. Make the agreement on the measures to be implemented.

4.3. RESULT

First Post-translocation Monitoring was performed on 27th August 2021 and the weather conditions were summarized in **Table 4.3.1**.

Table 4.3.1 Weather Condition for the Coral Translocation on 27th August 2021

Date	Condition	Average Underwater Visibility
27 August 2021	- Southwest force 3 to 4 - Sunny periods	Less than 0.5 m

10 selected translocated coral colonies were monitored at the recipient site as suggested in the Coral Translocation Plan. The area with translocated coral colonies in recipient Site A is shown in **Figure 4.1**. The general health conditions (size, mortality, bleaching and sediment) were recorded and summarized in **Error! Reference source not found.**.2. Photos of each translocated coral colony were taken during the post-translocation activities (Photo Plate 1)

Table 4.3.2 Size, Mortality, Bleaching and Sediment of 16 Translocated Coral Colonies

Coral #	Species	Size (cm) – Max. Diameter/ Height	Mortality (%)		Bleaching (%)		Sediment (%)	
			Baseline	Aug-21	Baseline	Aug-21	Baseline	Aug-21
T1	*Echinomuricea* sp.	20	0	0	0	0	0	0
T2	*Echinomuricea* sp.	15	0	0	0	0	0	0
T3	*Echinomuricea* sp.	15	0	0	0	0	0	0
T4	*Echinomuricea* sp.	20	0	0	0	0	0	0
T5	*Echinomuricea* sp.	20	0	0	0	0	0	0
T6	*Echinomuricea* sp.	25	0	0	0	0	0	0
T7	*Echinomuricea* sp.	20	0	0	0	0	0	0
T8	*Echinomuricea* sp.	25	0	0	0	0	0	0

T9	*Echinomuricea* sp.	15	0	0	0	0	0	0
T10	*Echinomuricea sp.*	15	0	0	0	0	0	0

Ten (10) hard coral colonies which grow naturally at the recipient site R3 were also monitored and photos of each coral colony were taken during the post-translocation activities (Photo Plate 2). The general health conditions (Size, Mortality, Bleaching and Sediment) were recorded and summarized in **Table 4.3.3**

Table 4.3.3 Size, Mortality, Bleaching and Sediment of 10 Natural Coral Colonies

Coral #	Species	Size (cm) – Max. Height	Mortality (%)		Bleaching (%)		Sediment (%)	
			Baseline	Aug-21	Baseline	Aug-21	Baseline	Aug-21
R1	*Echinomuricea* sp.	35	0	0	0	0	0	0
R2	*Echinomuricea* sp.	35	0	0	0	0	0	0
R3	*Echinomuricea* sp.	30	0	0	0	0	0	0
R4	*Echinomuricea* sp.	30	0	0	0	0	0	0
R5	*Echinomuricea* sp.	35	0	0	0	0	0	0
R6	*Echinomuricea* sp.	30	0	0	0	0	0	0
R7	*Echinomuricea* sp.	30	0	0	0	0	0	0
R8	*Echinomuricea* sp.	20	0	0	0	0	0	0
R9	*Echinomuricea* sp.	20	0	0	0	0	0	0
R10	*Echinomuricea sp.*	20	0	0	0	0	0	0

4.4. DISCUSSION AND CONCLUSION

Coral translocation activities were carried out in on 20th and 21st May 2021 in the direct

impact area, a total of forty-seven (47) octocoral colonies attached to movable boulders were translocated to the coral recipient site Fat Tong Chau, Junk Bay. 10 selected translocated coral colonies as well as the 10 tagged natural coral colonies at the recipient site were monitored.

The first post-translocation coral monitoring was carried out on 27 August 2021. Ten (10) selected translocated coral colonies were monitored at the recipient site. Similar to the baseline result, the health condition of the translocated coral colonies were good in general. No increased mortality was recorded during the survey.

Ten (10) natural hard coral colonies were also monitoring at the recipient site as control and similar to the baseline result, all the natural coral colonies are all in good condition. No increased mortality was recorded during the survey.

Post-translocation monitoring survey will be carried out to audit the success of translocation. The selected translocated coral colonies as well as the tagged natural coral colonies at the recipient site will be monitored once every 3 months for a period of 12 months

No sediment, bleaching or increased mortality in the general condition of coral colonies were observed during the monitoring period. No deterioration of the coral community was observed in the ecological monitoring results when compared with the baseline ecological monitoring results. There is no AL/LL exceedance during the monitoring period. Photos of each tagged translocated and natural corals were taken and shown in Photo Plates 1 and 2.

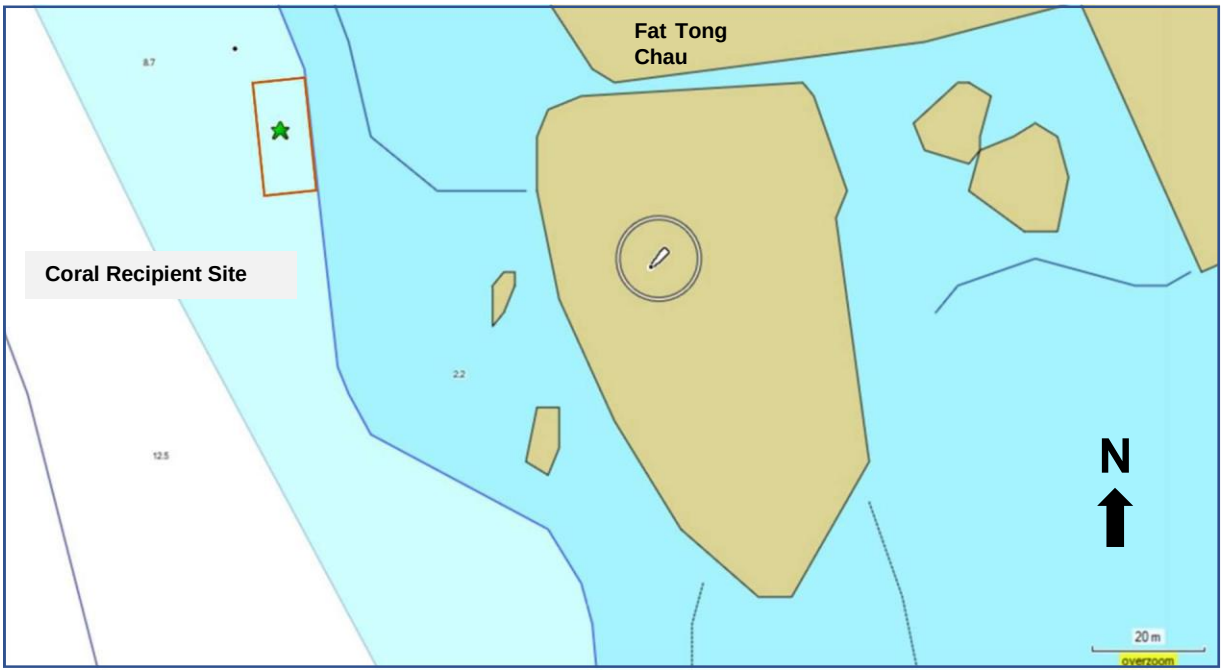
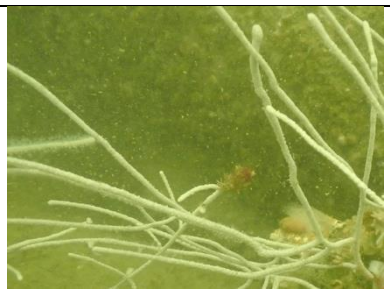


Figure 4.1 Location of Coral Recipient Site

Photo Plate 1

Tagged Translocated Corals at Recipient Site

T1	
T2	

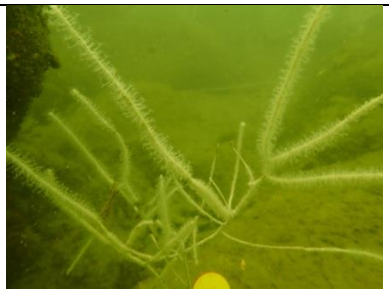
T3	
T4	
T5	
T6	

T7	
T8	
T9	
T10	

Photo Plate 2

Tagged Natural Corals at Recipient Site

R1	
R2	
R3	
R4	
R5	

R6	
R7	
R8	
R9	
R10	

5. WASTE

The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are presented in **Table 5.1**.

Table 5.1 Quantities of Waste Generated from the Project during 2021

Department: CEDD
Contract : CV/2020/09 - Construction of Lei Yue Mun Public Landing Facility

協力 - 瑞沃 聯營
Concentric – Hong Kong River Joint Venture

Monthly Summary Waste Flow Table for Year 2021

Month	Quantities of Inert C&D Materials Generated Monthly														Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete (see Note 2)		Reused in the Contract		Reused in other Projects		Disposed as Public Fill		Disposal at Alternative Disposal Ground		Imported Fill		Metals		Paper / Cardboard packaging		Plastics (see Note 3)		Chemical Waste		Others, e.g. general refuse	
	(in '000m³)		(in '000m³)		(in '000m³)		(in '000m³)		(in '000m³)		(in '000m³)		(in '000m³)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m³)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Jan	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0
Feb	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0
Mar	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.005
Apr	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.005
May	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0.005	0
Jun	0.02	0	0	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.005	0
Sub-total	0.12	0	0	0	0	0	0	0	0.12	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.07	0.01
Jul	0.2	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.005	0
Aug	0.42		0		0		0		0.3		1.0		0.12		0		0		0		0		0.005	
Sep	0.3		0		0		0		0.3		0.0		0		0		0		0		0		0.005	
Oct	0.2		0		0		0		0.2		0.0		0		0		0		0		0		0.005	
Nov	0.2		0		0		0		0.2		0.0		0		0		0		0		0		0.005	
Dec	0.2		0		0		0		0.2		0.0		0		0		0		0		0.01		0.005	
Total	1.640	0	0	0	0	0	0	0	1.52	0	1.00		0.12	0	0	0	0	0	0	0	0.02	0	0.10	0.01

Forecast of Total Quantities of C&D Materials to be Generated from the Contract											
Total Quantity Generated	Broken Concrete (see Note 2)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Disposal at Alternative Disposal Ground	Imported Fill	Metals	Paper / Cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000m³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m³)
3.8	0	0	0	2.7	1.0	0.12	0.1	0.1	0.07	0.04	0.20

Notes: (1) The waste flow table shall also include C&D materials that are specified in the contract to be imported for use at the Site.
(2) Broken concrete for recycling into aggregates.
(3) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging material.

Architectural Services Department	Form No. D/OI.03/09.004

Contract No. / Works Order No.: - SS J521

Waste Flow Table (for Capital Works Contracts NOT subject to EM 2021 [year]

[to be submitted not later than the 15th of Mar, Jun, Sep & Dec following the reporting Quarter]

(All quantities shall be rounded off to 3 decimal places.)

Quarter ending	Actual Quantities of Inert Construction Waste Generated Quarterly					Actual Quantities of Non-inert Construction Waste Generated Quarterly				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Broken Concrete (see Note 3)	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill	(f) Metals	(g) Paper/ cardboard packaging	(h) Plastics (see Note 2)	(i) Chemical Waste	(j) Others, e.g. general refuse disposed of at Landfill
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Feb	0.013	0.000	0.000	0.000	0.013	0.000	0.000	0.000	0.000	0.013
May	0.143	0.000	0.000	0.000	0.143	5.160	0.000	0.000	0.000	0.000
June	0.086	0.000	0.000	0.000	0.086	0.000	0.000	0.000	0.000	0.000
July	0.041	0.000	0.000	0.000	0.041	0.000	0.000	0.000	0.000	0.000
Aug	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.000									
Total	0.283	0.000	0.000	0.000	0.283	5.160	0.000	0.000	0.000	0.013

Notes:

(1) The waste flow table shall also include construction waste that are specified in the Contract to be imported for use at the site.

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

(3) Broken concrete for recycling into aggregates.

(4) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.

6. SUMMARY OF MONITORING EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at LYM in the reporting month.

No noise-related exceedance was recorded in the reporting period.

No notification of summons and prosecution was received in the reporting period.

Statistics on complaints and regulatory compliance are summarized in **Appendix H**.

7. EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, site inspections were carried out on 4, 12, 19 and 27 August 2021. A joint site inspection with IEC was carried out on 4 August 2021.

Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 7.1**.

Table 7.1 Site Observations

Date	Environmental Observations	Follow-up Status
4 August 2021	No environmental deficiency observed.	NA
12 August 2021	No environmental deficiency observed.	NA
19 August 2021	1. At lookout point, chemical should be stored at designated storage plant. 2. At landing facility, silt curtain should be in good condition and right position. Mitigation measures for site runoff should be well-implemented.	1. At lookout point, chemical is removed and stored at designated storage place. 2. At landing facility, silt curtain is reset to the right position and works in good condition.
27 August 2021	1. Chemical should be stored into designated storage. Excess chemical should not be placed on the same drip tray. 2. At landing facility, silt curtain should be in good condition, mitigation measure for site runoff control should be well-implemented.	1. Chemical is stored into designated storage. 2. At landing facility, repair and extend silt curtain to work in good condition

According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix B**.

8. FUTURE KEY ISSUES

Works to be undertaken in the next reporting month are:

Works Description	Location
273mm Dia. pipe piling works at viewing platform	Viewing Platform
Relocation of Existing Gabion Blocks	Viewing Platform
610mm Dia. pipe piling works and pre-bored socketed H piles	Landing Facility
Dredging	Landing Facility and Breakwater Construction Area
Construction of Skin Wall and R.C Paving	Lookout Point
Infill Grouting of Pipe Piles	Lookout Point
Concrete, Formwork / Rebar fixing and Footing Works	Viewing Platform

The major environmental impacts brought by the above construction works will include:

- Construction dust and noise generation from excavation and construction works
- Waste generation from construction activities
- Impact on water quality from marine construction works and inland construction works

The key environmental mitigation measures for the Project in the coming reporting period associated with the above construction works will include:

- Dust suppression by regular wetting and water spraying for construction works
- Reduction of noise from equipment and machinery on-site
- Sorting and storage of general refuse and construction waste
- The dredging rate shall not exceed 100 m^3 per hour with a maximum working period of 12 hours per day throughout the construction phase and operation phase.
- Silt curtains should be deployed enclosing the dredging operation. Regular inspection on the silt curtain on the silt curtain condition by the contractor should be carried out.

Referring to EM&A Manual Section 4.6.1.1, the impact noise and water quality monitoring should be carried out at all the designated monitoring stations when there are project-related construction activities undertaken within a radius of 300m from the monitoring stations.

9. CONCLUSIONS AND RECOMMENDATIONS

This is the 4th Monthly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 August to 31 August 2021, in accordance with the EM&A Manual and the requirement under EP-564/2018.

Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at LYM in the reporting month

No water quality monitoring was conducted in the reporting period due to no marine-based works was conducted.

No exceedance of Action or Limit Level was recorded.

Weekly environmental site inspection was conducted during the reporting period. No major deficiency was observed during site inspection. The environmental performance of the project was therefore considered satisfactory.

No environmental complaint was received in the reporting period.

No notification of summons or prosecution was received since commencement of the Contract.

Agreed with the EIA prediction in Section 14.2.4.4, with the adoption of good site practice, quiet PME and noise barriers/enclosure, the noise levels at all the representative NSRs complied with the EIAO-TM noise criteria. The comparison between the EM&A data in the reporting month and the most updated noise level prediction as presented in the Noise Mitigation Plan (NMP) is presented in **Table 9.1**.

Table 9.1 Comparison between the EM&A Data in the Reporting Month and the Updated Noise Level Predictions

EIA Noise Assessment Point (NAP)	Prediction [dB(A)]	EM&A Monitoring Station	Noise Levels [db(A)]
HPRC V1	62-72	NM1	62.6 – 64.9
HPRE 75B*	55-75	NM2-A	54.8 – 59.9
LYMP	70	NM3	65.2 – 68.3
HPRE 21C	67-75	NM4	63.4 – 65.6

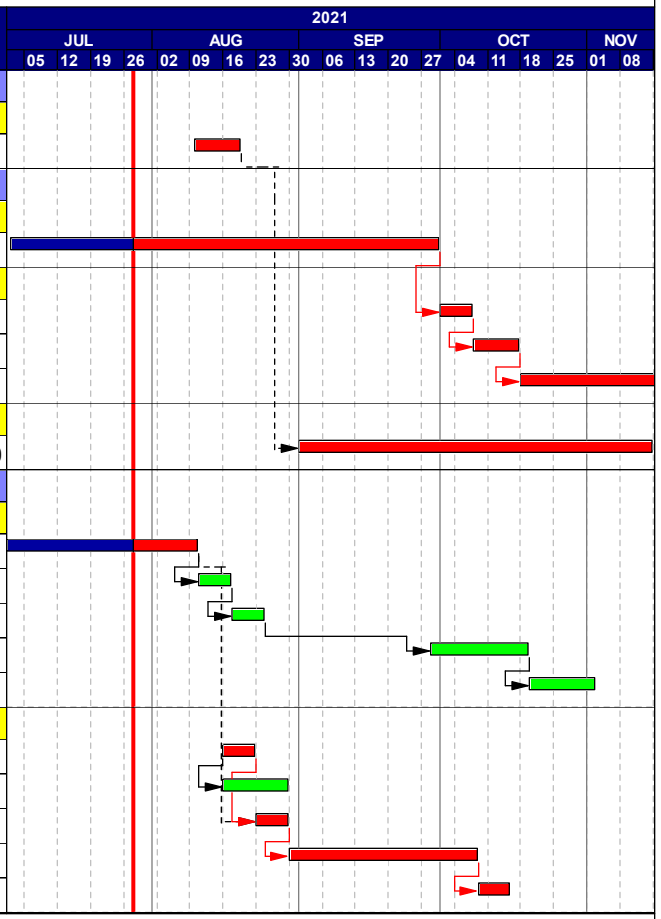
*NM2-A is located between NAPs HPRE 75B and HPRE 81, with lack of data in the NMP, the EIA prediction was used instead

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A

CEDD Contract No. CV/2020/09
Construction of Lei Yue Mun Public Landing Facility

Act ID	Description	Orig Dur	Early Start	Early Finish	Total Float
Bill No. 1 - Preliminaries					
General Preliminaries					
B1-1301	Initial Hydrographic Survey	10	10AUG21 *	19AUG21	-19d
Bill No. 2 - Landing Facility & Seawall					
Pipe Pile Wall					
B2-3020	Installation & Grouting of Pipe Piles (86 Nos.)	91	02JUL21 A	30SEP21	-177d
Socketted Steel H-piles					
B2-4000	Mobilization of Piling Plant	7	01OCT21	07OCT21	-177d
B2-4010	Construction of Preliminary Pile	10	08OCT21	17OCT21	-177d
B2-4020	Construction of Main Piles (38 Nos.)	90	18OCT21	15JAN22	-177d
Dredging and Sloping Seawall					
B2-5200	Marine Dredging	75	01SEP21 *	14NOV21	0
Bill No. 4 - Lookout Point and Viewing Platform					
Improvement Works at Lookout Point					
B4-1210	Installation of Pipe Piles	61	11JUN21 A	10AUG21	-33d
B4-1220	Trimming of Pipe Piles for Wall Openings	7	11AUG21	17AUG21	118d
B4-1230	Infill Grouting of Pipe Piles	7	18AUG21	24AUG21	118d
B4-1300	Casting of Skin Wall	21	29SEP21	19OCT21	118d
B4-1400	Laying of Concrete Paving	14	20OCT21	02NOV21	118d
Improvement Works at Viewing Platform					
B4-2000	Relocation of Existing Gabion Blocks	7	16AUG21 *	22AUG21	-45d
B4-2010	Temporary Modification of Existing Drainage	14	16AUG21	29AUG21	609d
B4-2100	Mobilization of Piling Plant	7	23AUG21	29AUG21	-45d
B4-2110	Installation of Pipe Piles	40	30AUG21	08OCT21	-45d
B4-2120	Infill Grouting of Pipe Piles	7	09OCT21	15OCT21	-45d



Start date	15DEC20
Must finish date	30APR23

3-MONTH ROLLING PROGRAMME

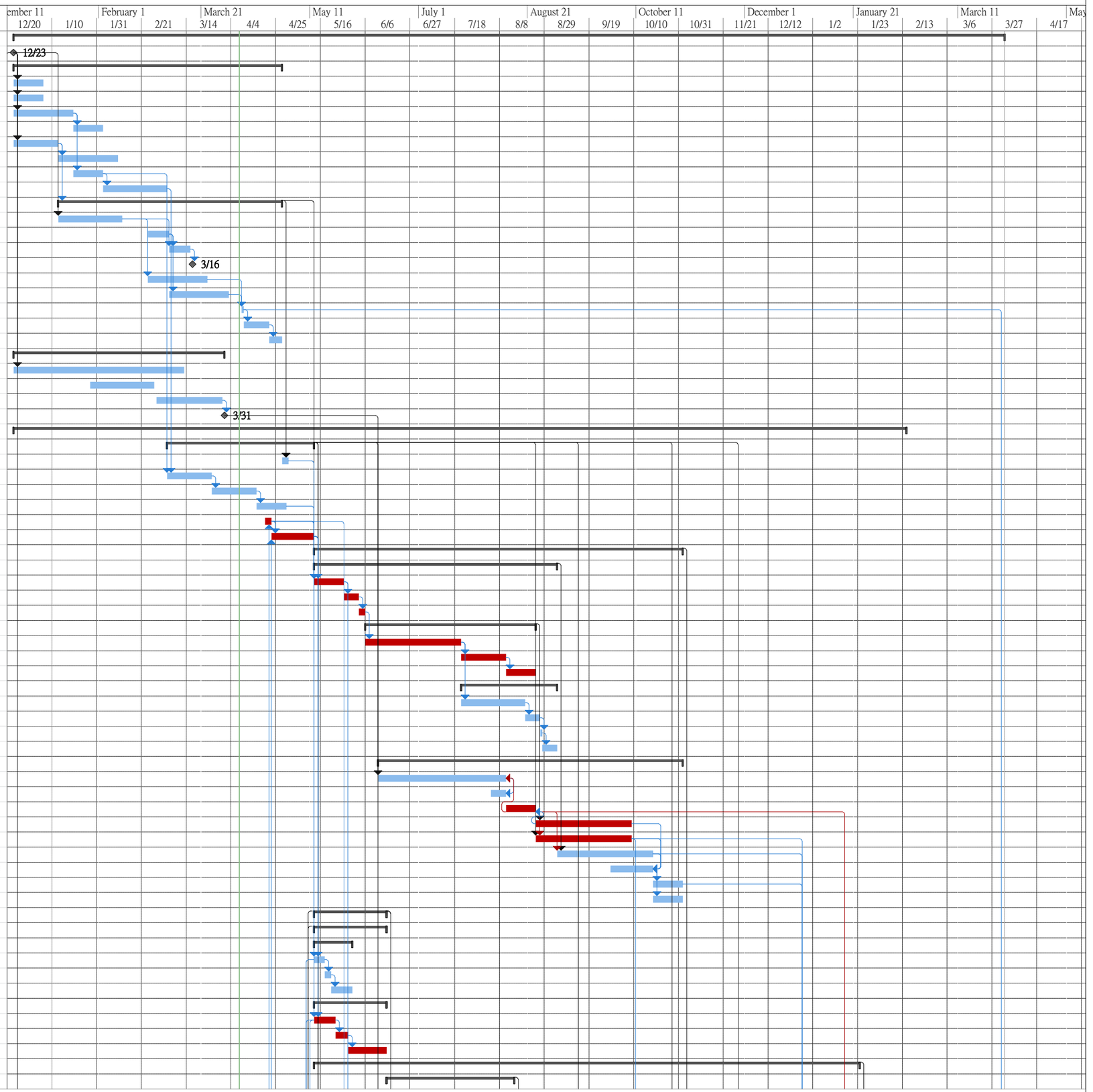
Early bar
Progress bar
Critical bar
Start milestone point
Finish milestone point

Date	Revision	Checked	Approved
28JUL21		CYW	TSL

MILESTONE BUILDER ENGINEERING LTD.
Contract : SS J521 - Lei Yue Mun Waterfront Enhancement Project

Master Programme V07

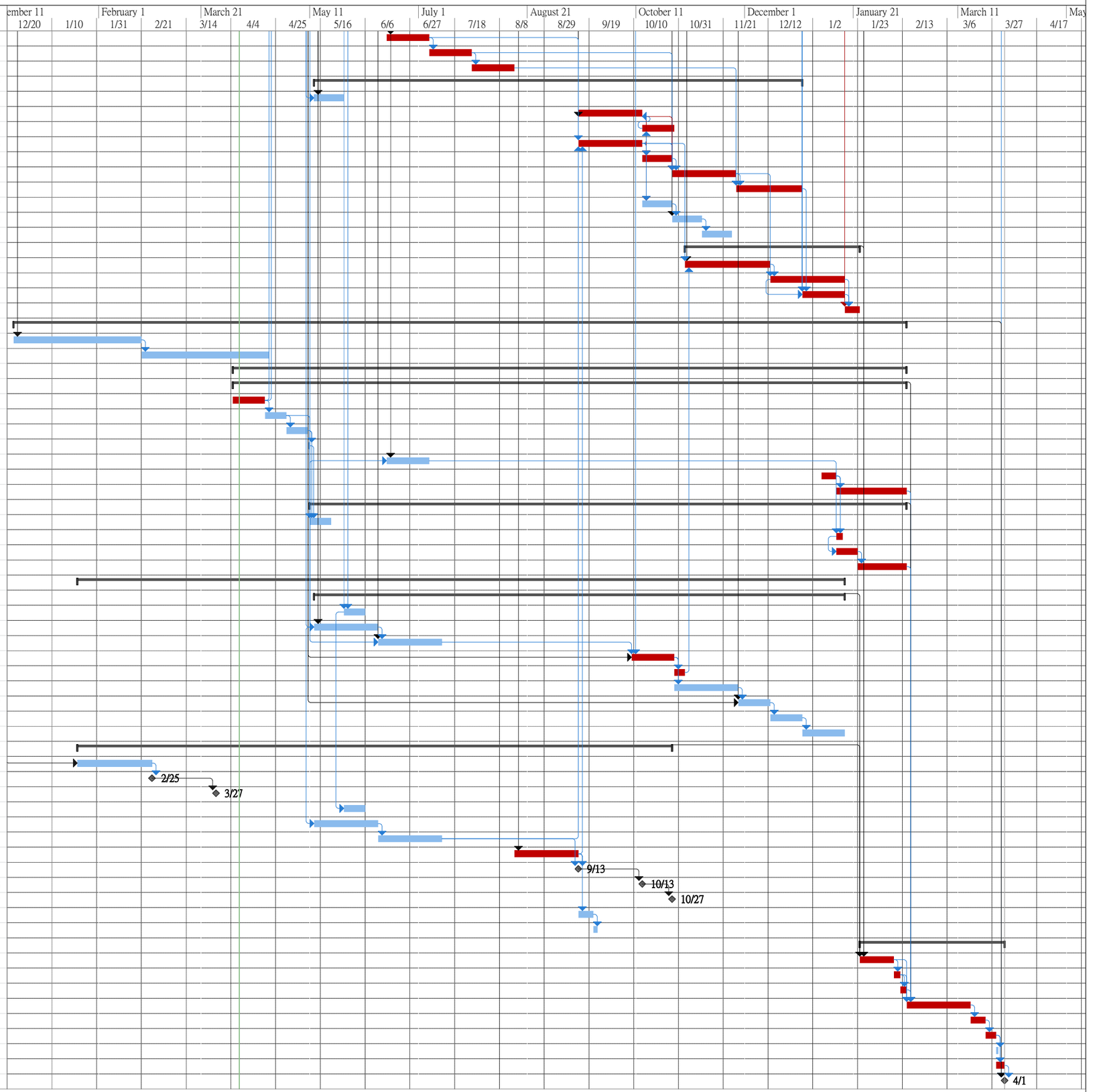
ID	Task Name	Duration	Start	Finish
1	**CONTRACT PERIOD**	**465 days**	**2020/12/23**	**2022/4/1**
2	Contract commencement	0 days	2020/12/23	2020/12/23
3	**PRELIMINARIES**	**126 days**	**2020/12/23**	**2021/4/27**
4	Detailed condition survey	14 days	2020/12/23	2021/1/5
5	Land survey and setting out	14 days	2020/12/23	2021/1/5
6	Tree survey and report	28 days	2020/12/23	2021/1/19
7	Tree protection	14 days	2021/1/20	2021/2/2
8	Site and construction plan submission	21 days	2020/12/23	2021/1/12
9	Site and construction plan comment/ approval	28 days	2021/1/13	2021/2/9
10	Erect hoarding - water barrier base	14 days	2021/1/20	2021/2/2
11	Erect hoarding - water barrier graphic panel	30 days	2021/2/3	2021/3/4
12	**Erect hoarding - metal hoarding**	**105 days**	**2021/1/13**	**2021/4/27**
13	Alternative proposal submission (Footing)	30 days	2021/1/13	2021/2/11
14	Alternative proposal submission (Entrance Gate)	10 days	2021/2/24	2021/3/5
15	Comment and revision (PM)	10 days	2021/3/6	2021/3/15
16	Full set alternative proposal - Obtain approval	1 day	2021/3/16	2021/3/16
17	Off site pre-fabrication (concrete)	28 days	2021/2/24	2021/3/23
18	Off site pre-fabrication (Structural Steel)	28 days	2021/3/6	2021/4/2
19	Delivery to site	1 day	2021/4/9	2021/4/9
20	Site installation	12 days	2021/4/10	2021/4/21
21	Electrical Installation	6 days	2021/4/22	2021/4/27
22	**Visual mock up**	99 days	2020/12/23	2021/3/31
23	Visual mock up proposal submission / approval	80 days	2020/12/23	2021/3/12
24	Location submission / Material submission	30 days	2021/1/28	2021/2/26
25	Off site mock up installation	31 days	2021/2/28	2021/3/30
26	Inspection / approval	1 day	2021/3/31	2021/3/31
27	**SITE WORKS**	**419 days**	**2020/12/23**	**2022/2/14**
28	**Demolition**	**69 days**	**2021/3/5**	**2021/5/12**
29	Tree Felling	3 days	2021/4/28	2021/4/30
30	Existing rest garden facilities	21 days	2021/3/5	2021/3/25
31	Existing floor and wall finishes	21 days	2021/3/26	2021/4/15
32	Existing viewing concrete platform / manhole	14 days	2021/4/16	2021/4/29
33	Existing lamp post	3 days	2021/4/20	2021/4/22
34	Existing viewing concrete planter	20 days	2021/4/23	2021/5/12
35	**Viewing platform structural works**	**173 days**	**2021/5/13**	**2021/11/1**
36	**Concrete works**	**114 days**	**2021/5/13**	**2021/9/3**
37	Excavation (open cut)	14 days	2021/5/13	2021/5/26
38	Compaction and inspection	7 days	2021/5/27	2021/6/2
39	Blinding and inspection	3 days	2021/6/3	2021/6/5
40	**In-situ concreting / rebar / formwork (with inspection)**	80 days	2021/6/6	2021/8/24
41	Footing RF1 & RF2 (4 stages)	45 days	2021/6/6	2021/7/20
42	Bearing wall	21 days	2021/7/21	2021/8/10
43	Slab and bridge	14 days	2021/8/11	2021/8/24
44	**Precast concrete staircase**	45 days	2021/7/21	2021/9/3
45	Off site casting & inspection	30 days	2021/7/21	2021/8/19
46	IIA inspection	7 days	2021/8/20	2021/8/26
47	Delivery to site	1 day	2021/8/27	2021/8/27
48	Site installation	7 days	2021/8/28	2021/9/3
49	**Steel and metal works**	**143 days**	**2021/6/12**	**2021/11/1**
50	Off site pre-fabrication and inspection	60 days	2021/6/12	2021/8/11
51	IIA inspection	7 days	2021/8/4	2021/8/11
52	Delivery to site	14 days	2021/8/11	2021/8/25
53	Archhitectural features Site installation	45 days	2021/8/25	2021/10/8
54	Type 2 Metal railing on pavement	45 days	2021/8/25	2021/10/8
55	Metal railing on viewing platform	45 days	2021/9/4	2021/10/18
56	On-site weld testing	20 days	2021/9/29	2021/10/18
57	Aluminum fins	14 days	2021/10/19	2021/11/1
58	Peforated sheet	14 days	2021/10/19	2021/11/1
59	**New planter structural works**	**34 days**	**2021/5/13**	**2021/6/15**
60	**Concrete works**	**34 days**	**2021/5/13**	**2021/6/15**
61	**Planter 3 & 4**	**18 days**	**2021/5/13**	**2021/5/30**
62	Excavation	5 days	2021/5/13	2021/5/17
63	Blinding and inspection	3 days	2021/5/18	2021/5/20
64	Concreting / rebar / formwork (with inspection)	10 days	2021/5/21	2021/5/30
65	**Planter 1 & 2**	**34 days**	**2021/5/13**	**2021/6/15**
66	Excavation	10 days	2021/5/13	2021/5/22
67	Blinding and inspection	6 days	2021/5/23	2021/5/28
68	Concreting / rebar / formwork (with inspection)	18 days	2021/5/29	2021/6/15
69	**Finishes and misc**	**256 days**	**2021/5/13**	**2022/1/23**
70	**New Planter Finishing**	**60 days**	**2021/6/16**	**2021/8/14**



Project: SSJ521- LeiYuMun const p
Date: 2021/4/8

Critical Split | Task | Split | Milestone | Summary | Project Summary | Critical | Manual Progress

ID	Task Name	Duration	Start	Finish
71	Floor and wall plastering	20 days	2021/6/16	2021/7/5
72	Washed granolithic finishes	20 days	2021/7/6	2021/7/25
73	Artificial granite finishes	20 days	2021/7/26	2021/8/14
74	**Existing rest garden Finishing**	**229 days**	**2021/5/13**	**2021/12/27**
75	Footing for playground equipment	14 days	2021/5/13	2021/5/26
76	Meter room Wall plastering	30 days	2021/9/14	2021/10/14
77	Waterproofing to existing meter room	15 days	2021/10/14	2021/10/28
78	Floor plastering	30 days	2021/9/14	2021/10/13
79	New metal balustrade	14 days	2021/10/14	2021/10/27
80	Washed granolithic finishes	30 days	2021/10/28	2021/11/26
81	Artificial granite finishes	31 days	2021/11/27	2021/12/27
82	Safety mat	14 days	2021/10/14	2021/10/27
83	New pergola roofing	14 days	2021/10/28	2021/11/10
84	New playground equipment	14 days	2021/11/11	2021/11/24
85	**Viewing platform Finishing**	**82 days**	**2021/11/3**	**2022/1/23**
86	Floor & wall plastering	40 days	2021/11/3	2021/12/12
87	Washed granolithic finishes	35 days	2021/12/13	2022/1/16
88	Artificial granite finishes	20 days	2021/12/28	2022/1/16
89	Gabion wall	7 days	2022/1/17	2022/1/23
90	**Landscape works**	**419 days**	**2020/12/23**	**2022/2/14**
91	Tree plan material and sampling submission/ approval	60 days	2020/12/23	2021/2/20
92	Tree & shrub selection	60 days	2021/2/21	2021/4/21
93	**Site works**	**316 days**	**2021/4/5**	**2022/2/14**
94	**Inside site boundary**	**316 days**	**2021/4/5**	**2022/2/14**
95	Coordination with LCSD	15 days	2021/4/5	2021/4/19
96	Root Prunning	10 days	2021/4/20	2021/4/29
97	Crown Prunning	10 days	2021/4/30	2021/5/9
98	Lifting of trees and transit to outside site boundary	1 day	2021/5/10	2021/5/10
99	Drain Laying	20 days	2021/6/16	2021/7/5
100	Import soil and backfill	7 days	2022/1/6	2022/1/12
101	Shrub & groundcover planting	33 days	2022/1/13	2022/2/14
102	**Outside site boundary**	**280 days**	**2021/5/11**	**2022/2/14**
103	Bamboo stakes and protection	10 days	2021/5/11	2021/5/20
104	Temporary fence off of existing planter	3 days	2022/1/13	2022/1/15
105	Remove existing shrubs	10 days	2022/1/13	2022/1/22
106	Shrub & groundcover planting	23 days	2022/1/23	2022/2/14
107	**BS installation**	**360 days**	**2021/1/22**	**2022/1/16**
108	**Electrical Installation**	**249 days**	**2021/5/13**	**2022/1/16**
109	TD existing lamp post	10 days	2021/5/27	2021/6/5
110	Construct u/g cable duct and draw pit	30 days	2021/5/13	2021/6/11
111	Construct footing for tubine / lamp post	30 days	2021/6/12	2021/7/11
112	Conduit & wiring	20 days	2021/10/9	2021/10/28
113	Install the relocated lamp post	5 days	2021/10/29	2021/11/2
114	Light fitting installation	30 days	2021/10/29	2021/11/27
115	Install wind turbine	15 days	2021/11/28	2021/12/12
116	Earting and lightning	15 days	2021/12/13	2021/12/27
117	T&C	20 days	2021/12/28	2022/1/16
118	**Plumbing installation**	**279 days**	**2021/1/22**	**2021/10/27**
119	Submission/ approval of plumbing materials	35 days	2021/1/22	2021/2/25
120	Submit WWO46 Part 1 & 2	0 days	2021/2/25	2021/2/25
121	Receive WWO46 Part 3 from WSD (30 days after Part1/2 submitted)	0 days	2021/3/27	2021/3/27
122	TD existing plumbing facilities	10 days	2021/5/27	2021/6/5
123	Trenching for water pipe laying	30 days	2021/5/13	2021/6/11
124	Water pipe laying, u/g and above ground	30 days	2021/6/12	2021/7/11
125	Irrigation point installation	30 days	2021/8/15	2021/9/13
126	Submit WWO46 Part 4 (u/g and above ground)	0 days	2021/9/13	2021/9/13
127	WSD inspection (30 days from Part 4 submitted)	0 days	2021/10/13	2021/10/13
128	Receive WWO46 Part 5 from WSD (14 days after satisfactory inspection)	0 days	2021/10/27	2021/10/27
129	T&C	7 days	2021/9/14	2021/9/20
130	Connection to existing water services	2 days	2021/9/21	2021/9/22
131	**COMPLETION OF WORKS**	**68 days**	**2022/1/24**	**2022/4/1**
132	Removal of metal hoarding	16 days	2022/1/24	2022/2/8
133	General site cleaning - within & outside site boundary	3 days	2022/2/9	2022/2/11
134	General site cleaning - oyster beach	3 days	2022/2/12	2022/2/14
135	SCCU inspection / approval	30 days	2022/2/15	2022/3/16
136	Handover inspection with the LCSD	7 days	2022/3/17	2022/3/23
137	Final cleaning & defect rectification	5 days	2022/3/24	2022/3/28
138	Removal of tree protection	1 day	2022/3/29	2022/3/29
139	Removal of water barrier	4 days	2022/3/29	2022/4/1
140	Handover to the LCSD	0 days	2022/4/1	2022/4/1



Project: SSJ521- LeiYuMun const p
Date: 2021/4/8

Critical Split | Task | Split | Milestone | Summary | Project Summary | Critical | Manual Progress

Appendix B

Appendix B IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

Table B.1 Implementation Schedule for Air Quality Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S3.7.1.1	Sufficient dust suppression measures as stipulated under the Air Pollution Control (Construction Dust) Regulation (Cap 311R) and good site practices should be properly implemented in order to minimise the construction dust generated. The measures include the followings: • Use of regular watering, to reduce dust emissions from exposed site surfaces and unpaved roads particularly during dry weather; • Use of frequent watering of particular dusty construction areas close to ASRs; • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines; • Open temporary stockpiles should be avoided or covered. Prevent placing dusty material storage plies near ASRs; • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations; • Establishment and use of vehicle wheel and body washing facilities at the exit point of the site; • Imposition of speed control for vehicles on unpaved site roads. 8 km/hr is the recommended limit; • Routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.	Works sites / throughout the construction period	Contractor		√		♦ Air Pollution Control (Amendment) Ordinance 2013 (APCO) (Cap 311) ♦ Technical Memorandum on the Environmental Impact Assessment Process (EIAO-TM) ♦ Air Pollution Control (Construction Dust) Regulation (Cap 311R) ♦ Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation.

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S3.7.1.2	Guidelines stipulated in EPD's Recommended Pollution Control Clauses for Construction Contracts should also be incorporated in the contract documents to abate dust impacts. The clauses include: • The Contractor shall observe and comply with the Air Pollution Control Ordinance and its subsidiary regulations, particularly the Air Pollution Control (Open Burning) Regulation, Air Pollution Control (Construction Dust) Regulation and Air Pollution (Smoke) Regulation. • The Contractor shall undertake at all times to prevent dust nuisance and smoke as a result of the construction activities. • The Contractor shall ensure that there will be adequate water supply / storage for dust suppression. • The Contractor shall devise, arrange methods of working and carrying out the works in such a manner so as to minimise dust impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented. • Before the commencement of any work, the Contractor may require to submit the methods of working, plant, equipment and air pollution control system to be used on the site for the Engineer inspection and approval.	Works sites / throughout the construction period	Contractor		√		♦ EPD's Recommended Pollution Control Clauses for Construction Contracts

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S3.7.3.1	Loading of the dredged sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. Any dredged sediment should be stored in enclosed tanks or properly covered as far as practicable to minimise its exposed area during its temporary storage and should be placed as far away from the identified ASRs as practically possible. Dredging rate should be controlled carefully. The dredged sediment will be delivered off-site for disposal every day to avoid storing at the barge overnight. Dredged sediment placed on marine vessel for disposal should also be properly covered during transportation. Dredging activities should be conducted during non-summer season as far as possible.	Works sites / during dredging, handling of dredged materials	Contractor		√	√	♦ APCO ♦ EIAO-TM ♦ Air Pollution Control (Construction Dust) Regulation (Cap 311R) ♦ Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation.

* Des - Design, C - Construction, O – Operation

Table B.2 Implementation Schedule for Noise Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S4.8.1.3	Good Site Practice • Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; • Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program; • Mobile plant, if any, should be sited as far from NSRs as possible; • Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; and • Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	Work sites /during construction stage	Contractor		√		♦ Noise Control Ordinance (NCO) ♦ EIAO-TM ♦ Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM) ♦ Recommended Pollution Control Clauses for Construction Contracts
S4.8.1.4	The "Recommended Pollution Control Clauses for Construction Contracts" published by the EPD should be adopted in the Contract Specification for the Contractors to follow and implement relevant measures and good site practices in minimising noise impact.	Works sites / during construction stage	Contractor		√		Ditto

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S4.8.1.5, S4.8.1.6 & Table 4.5	Quiet Powered Mechanical Equipment Use of quiet plant which should be made reference to the Powered Mechanical Equipment (PME) listed in the Technical Memorandum or the Quality Powered Mechanical Equipment (QPME) / other commonly used PME listed in Environmental Protection Department (EPD) web pages as far as possible which includes the Sound Power Level (SWLs) for specific quiet PME.	Work sites /during construction stage	Contractor		√		Ditto
S4.8.1.7 & S4.8.1.8	Noise Barriers and Noise Enclosure The Contractor will be responsible for design of the movable noise barrier with due consideration given to the size of the PME and the requirement of intercepting the line of sight between the NSRs and PME. The movable noise barrier should have a minimum surface density of 10 kg/m^2 and it should have no openings or gaps. Portable noise enclosure should be used, as far as practicable, to mitigate the noise impacts arising from the use of handheld breaker, air compressor, compactor (vibratory) and drill/grinder, hand-held electric at some work areas (i.e. works areas LP3, LP4, LP5 and ST) where locate very close to the NSRs.	Work sites /during construction stage	Contractor		√		Ditto

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S4.8.1.10	The streetscape improvement works should not be carried out within 10 m from Jockey Club Lei Yue Mun Plus (LYMP) during the time when LYMP is used for any noise sensitive purposes, such as holding courses or workshops. In addition, the beautification works at work areas LP1 should not be conducted during examination period. The Contractor should liaise with the operator of LYMP to obtain the updated schedule of courses, workshops and examination at the time of conducting the relevant construction works.	Work sites /during construction stage	Contractor		√		Ditto
S4.8.2.6	Since conducting sewerage construction works and streetscape improvement works may involve repeated construction works at the same location, the ArchSD would closely liaise with DSD and their contractors in planning the interfacing works to minimise duplicated/concurrent construction works, including exploring the possibility of entrusting the streetscape improvement works to DSD, so as to minimise nuisance to nearby sensitive receivers such as residents, shops, restaurants and educational institution as far as practicable. Before commencing noisy construction works, such as road breaking works, in the vicinity of the NSRs, the Contractor would closely liaise with the affected NSRs to keep them informed of the works and should strive to complete the works in the shortest time possible. To minimise nuisance to nearby educational institution and seafood restaurants, noisy construction works would not	Work sites / during construction stage	Project Proponent / Contractor		√		Ditto

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	be carried out during the examination period of the educational institution and the peak business hour of the restaurant.						

* Des - Design, C - Construction, O – Operation

Table B.3 Implementation Schedule for Water Quality Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S5.7.1.1 & S5.7.2.13	The dredging operation would be properly scheduled such that no dredging works will be carried out during the period of the Annual Cross Harbour Swim Race to be held.	Works sites / during dredging in construction and operation stages	Contractor for dredging		√	√	N/A
S5.8.1.1	*Good Site Practices for Dredging* • All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessels movement or propeller wash; • All barges / dredgers should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; • Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved; • Construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; • Construction activities should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation.	Works sites / during dredging in construction and operation stages	Contractor for Dredging		√	√	♦ EIAO-TM ♦ EIAO ♦ WPCO ♦ Waste Disposal Ordinance (WDO) ♦ Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S5.8.1.2	Only one closed grab should be used any time for the dredging works during both capital and maintenance dredging to minimise release of sediment and other contaminants.	Works sites / during dredging in construction and operation stages	Contractor for dredging		√	√	♦ Technical Memorandum on the Environmental Impact Assessment Process (EIAO-TM) ♦ Water Pollution Control Ordinance (WPCO)
S5.8.1.2	The dredging rate shall not exceed 100 m^3 per hour with a maximum working period of 12 hours per day throughout the construction phase and operation phase.	Works sites / during dredging in the construction and operation stages	Contractor for dredging		√	√	♦ EIAO-TM ♦ WPCO
S5.8.1.3	Silt curtains should be deployed enclosing the dredging, filling operation and seawall modification works. Under Section 10.6.31 of the Contaminated Spoil Management Study Final Report, silt curtains are defined as screens that extend over the full water depth in the dredging area to confine most of the suspended sediments. This is equivalent to the silt curtains to be adopted for the dredging, filling and seawall modification works in LYM waterfront, which involve the use of impervious sheets or filter fabrics extending over the full water depth. Regular inspection on the silt curtain condition by the contractor should be carried out to ensure the silt curtains are deployed properly and to maintain the performance of the silt curtains throughout the construction period.	Works sites / during dredging, filling operation and seawall modification in construction stage and maintenance dredging in operation stage	Contractor for dredging and seawall modification works		√	√	♦ EIAO-TM ♦ WPCO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S5.8.1.5	Seawall modification works should be undertaken during low tide, when the water level is low.	Lookout point 1, 5 and viewing platform / during construction stage	Contractor for seawall modification works		√		♦ EIAO-TM ♦ WPCO
S5.8.2.1 – S5.8.2.2	Control of potential water quality impact arising from the general construction works shall be achieved based on the following principles: • Minimisation of surface run-off; • Prevention or minimisation of the likelihood of the identified pollutants being in contact with rain or run-off or adjacent marine waters; and • Measures to abate pollutants at source. The Contractor shall apply for a discharge license under the WPCO and the discharge shall comply with the terms and conditions of the license. The Contractor shall also devise an Emergency Contingency Plan for accidental leakage or spillage of chemicals during construction phase and maintenance dredging. It should detail the communication line between Contractor, relevant government and stakeholders, remediation plan for containing and cleaning of leakage, evaluation and improvement work and determine follow-up action, such as monitoring.	Works sites / during construction stage and maintenance dredging in operation stage	Contractor		√	√	♦ EIAO-TM ♦ WPCO
S5.8.2.3	*Site Runoff and General Activities* • High loading of SS in site run-off should be prevented through proper site management by the contractor; • Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the	All works sites / during construction stage	Contractor		√		♦ ProPECCPN 1/94 Construction Site Drainage ♦ WPCO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	contractor, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly; • The drilling operation can be fully controlled by the workers, the volume of sediment laden water and the material stockpiled in the temporary storage steel tank can be anticipated such that spillage can be prevented. The tank should be kept within the temporary working platform with surrounding concrete bund walls. The tanks should be removed to other site area located far away from the river immediately after filling up and within the same day; • Stockpiles should be located away from any watercourses and the seafront; • Plant workshop / maintenance areas should be bunded on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations; • Works should be programmed to minimise soil excavation works where practicable during the rainy days; • Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicle leaves the work site; • Section of the road between the wheel washing bay and the public road will be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and • Sufficient chemical toilets should be provided in the works areas in the proximity of the riverside for the sewage generated by the workforce. A licensed waste collector should be deployed to clean the						

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	chemical toilets on a regular basis. Any sewage or wastewater discharge into the surrounding environment should not be allowed. Any chemical toilets should be located away from the river.						
S5.8.3.2 & S5.8.3.3	*Design Measures* • Exposed surface shall be avoided within the proposed development to minimise soil erosion. Development site shall be either hard paved or covered by landscaping area where appropriate to reduce soil erosion. • The existing marine water in adjacent to the Project sites will be retained to maintain the original flow path. The drainage system will be designed to avoid any case of flooding based on the 1 in 50 year return period.	Works sites / during operation stage	Project Proponent / Operator	√		√	♦ EIAO-TM ♦ WPCO ♦ WDO
S5.8.3.4 to S5.8.3.6	*Devices / Facilities to Control Pollution* • Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system. • Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in storm water runoff. • Subject to detailed design, standard manholes with desilting opening / sand trap designed for first flush flow (capable of providing at least 5 minutes' detention time) can be provided at final discharge point before discharge into the existing watercourse.	Works sites/ during operation stage	Project Proponent / Operator	√		√	♦ EIAO-TM ♦ WPCO ♦ WDO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	The feasibility of alternative measure such as Vortex grit separator would also be considered during the detailed design stage.						
S5.8.3.7 to S5.8.3.8	*Administrative Measures* • Good management measures such as regular cleaning and sweeping of road surface / open areas is suggested. The road surface / open area cleaning should also be carried out prior to occurrence of rainstorm. • Manholes, as well as storm water gullies, ditches provided among the development areas should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.	Works sites/ during operation stage	The Operator			√	♦ EIAO-TM ♦ WPCO

* Des - Design, C - Construction, O – Operation

Table B.4 Implementation Schedule for Sewerage and Sewage Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
6.5.1.6	The Project Proponent should closely coordinate with DSD in monitoring the programme and liaise with DSD to formulate mitigation measures including but not limit to installation of chemical toilets near the restaurants to cater for the additional sewage arising from the increased tourist after commencement of the Lei Yue Mun Waterfront Enhancement project and before the commissioning of the proposed sewerage works under DSD project should any programme gap is identified in the future.	Works sites/ During operation stage	Project Proponent / Operator			√	♦ EIAO-TM

* Des - Design, C - Construction, O – Operation

Table B.5 Implementation Schedule for Waste Management Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S7.7.2.1 – S7.7.2.2	*Waste Management Hierarchy* The waste management hierarchy should be applied: • Avoidance and minimisation of waste generation; • Reuse of materials as far as practicable; • Recovery and recycling of residual materials where possible; and • Treatment and disposal of waste according to relevant laws, guidelines and good practices Recommendations of good site practices and waste reduction measures should be stated in order to achieve avoidance and minimisation of waste generation in the waste management hierarchy. An Environmental Management Plan (EMP) and trip-ticket system are recommended for monitoring management of waste. Specific measures targeting the mitigation of impacts in works areas and the transportation of waste off-site should be provided to minimise the potential impacts to the surrounding environment.	Works sites/ during design and construction stages	Project Proponent/ Contractor	√	√		♦ EIAO-TM ♦ ETWB TCW No. 19/2005
S7.7.3.1	*Good Site Practices* • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site. • Training of site personnel in proper waste management and chemical wastes handling procedures.	Works sites/ during design and construction stages	Project Proponent/ Contractor	√	√		♦ EIAO-TM ♦ ETWB TCW No. 19/2005

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	• Provision of sufficient waste disposal points and regular collection for disposal. • Adoption of appropriate measures to minimise windblown litter and dust during handling, transportation and disposal of waste. • Preparation of a WMP in accordance with the ETWB TCW No. 19/2005 Environmental Management on Construction Sites and submitted it to the Engineer for approval.						
S7.7.4.1	*Waste Reduction Measures* • Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Adopt proper storage and site practices to minimise the potential for damage to, and contamination of, construction materials. • Plan the delivery and stock of construction materials carefully to minimise the amount of waste generated; • Sort out demolition debris and excavated materials from demolition works to recover reusable / recyclable portions (i.e. soil, rock, broken concrete, etc.). • Maximise the use of reusable steel formwork to reduce the amount of C&D materials. • Minimise over ordering of concrete, mortars and cement grout by doing careful check before ordering. • Adopt pre-cast construction method instead of cast-in-situ method for construction of concrete structure as far as possible.	Works sites / during design and construction stages	Project Proponent/ Contractor	√	√		♦ EIAO-TM ♦ WDO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S7.7.5.1 – 7.7.5.2	*Storage, Collection and Transportation of Waste* • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; • Maintain and clean storage areas routinely; • Stockpiling area should be provided with covers and water spraying system to prevent materials from being wind-blown or washed away; and • Different locations should be designated to stockpile each materials to enhance reuse. • Waste hauler with appropriate permits should be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal outlets. The following recommendation should be implemented to minimise the impacts: – Remove waste in timely manner. – Employ the trucks with cover or enclosed containers for waste transportation. – Obtain relevant waste disposal permits from the appropriate authorities. – Dispose of waste at licensed waste disposal facilities.	Works sites / during construction stage	Contractor		√		♦ EIAO-TM ♦ WDO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S7.7.6.1 – 7.7.6.10 & S7.7.13.1	*Dredged Marine Sediments* • The sediment should be dredged, handled, transported and disposed of in a manner that would minimise adverse environmental impacts. • Requirements of the Air Pollution Ordinance (Construction Dust) Regulation, where relevant, shall be adhered to during dredging, transportation and disposal of the sediment. • To minimise the exposure to contaminated materials, workers shall, if necessary, wear appropriate personal protective equipment (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site. • For off-site disposal, the basic requirements and procedures specified under ETWB TCW No. 34/2002 shall be followed. The rationale for sediment removal/disposal should be submitted to MFC/CEDD for agreement. For site allocation and application of marine dumping permit, separate Sediment Sampling and Testing Plan (SSTP) may need to be submitted to EPD for agreement under the Dumping at Sea Ordinance (DASO). Additional SI works, based on the SSTP, may need to be carried out in order to confirm the disposal arrangements of the dredged sediment. A Sediment Quality Report (SQR), reporting the chemical and biological screening results and the estimated quantities of sediment under different disposal options, may then need to be submitted to EPD for agreement under DASO.	Works sites / during dredging, handling, transportation and disposal of sediment in construction stage and maintenance dredging in operation stages	Project Proponent / Contractor		√	√	♦ DASO ♦ ETWB TCW No. 34/2002 ♦ APCO ♦ WPCO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	• To ensure disposal space is allocated for the Project, the Project Proponent should be responsible for obtaining agreement from MFC on the allocation of the disposal site. The contractor(s), on the other hand, should be responsible for the application of the marine dumping permit under DASO from EPD for the sediment disposal. • The dredged sediments are expected to be loaded onto the barge and transported to the designated disposal sites allocated by MFC. The dredged sediment would be disposed of according to its determined disposal options and ETWB TCW No. 34/2002. • Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the dredged sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).						

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	• In order to minimise the potential odour / dust emissions during dredging and transportation of the sediment, the dredged sediments shall be wetted during dredging / material handling and shall be properly covered when placed on trucks or barges. Loading of the dredged sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water. • The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified under DASO authority.						
S7.7.7.1 – 7.7.7.4	*Construction and Demolition (C&D) Materials* • Implement a trip-ticket system to monitor and document the disposal of C&D waste • C&D materials generated from dredging, lookout points excavation works, and landing facility and carp-shaped platform construction works should be segregated from other waste to avoid contamination and ensure acceptability at the public fill reception facilities or reclamation sites. • C&D materials should be sorted on-site into inert and non-inert materials.	Works sites / during construction stage	Contractor		√		♦ WDO ♦ DEVB TCW No. 06/2010 ♦ ETWB TCW 33/2002 ♦ ETWB TCW 19/2005

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	• Non-inert C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed to landfill. • A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process. • Within the stock pile areas, the following measures should be taken to control potential environmental impacts or nuisance: – Waste such as soil should be handled and stored well to ensure secure containment; – Covering materials during heavy rainfall; – Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; – Locating stockpiles to minimise potential visual impacts; and – Minimising land intake of stockpile area as far as possible. • A system should be devised for on-site sorting of C&D materials. This system should include the identification of the source of generation, estimated quantity of waste generated, arrangement for on-site sorting and / or collection, designated stockpiling areas, frequency of collection by recycling contractors and frequency of removal off-site. • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.						

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S7.7.8.1	*Chemical Waste* • If chemical waste is produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. • Chemical waste (e.g. spent lubricant oil) should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Works sites / during construction stage	Contractor		√		♦ WDO ♦ Code of Practice on the Packaging, Labelling and Storage of Chemical Waste ♦ A Guide to the Chemical Waste Control Scheme
S7.7.9.1 & S7.7.11.1	*General Refuse* • General refuse should be stored in enclosed bins separately from construction and chemical waste. • Recycling bins should also be placed to encourage recycling. • Enclosed and covered areas should be provided preferably for general refuse collection. Routine cleaning should be also be provided to keep the areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis	Works sites / during construction and operation stages	Project Proponent / Contractor		√	√	♦ WDO
S7.7.10.1 & S7.7.10.2	*Floating Refuse* • Floating refuse should be collected and removed at regular intervals on a daily basis to keep water within the site boundary and the neighbouring water free from rubbish. • In case of floating refuse is identified, a waste	Works sites / during construction stage	Contractor		√		♦ WDO

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	collection vessel is needed to remove the floating materials and eventually store and dispose of together with the general refuse, after separating the recyclables for recycling, at North East New Territories Landfill (NENT) via Kwun Tong Road and Fanling Highway. • Provision of general refuse bins on site and education programme to construction workforce to minimise the potential of marine contamination.						
S7.7.12.1	• Sufficient general refuse and recycling bins should be provided respectively. Meanwhile, the general refuse collection areas should be enclosed and covered properly to avoid potential losses of waste to the adjacent watercourses.	Project site / during operation stage	Project Proponent			√	♦ WDO
S7.7.12.2	• Refuse scavenging and collection service will be provided by the Contractor of Marine Department (MD) under existing Contract.	Project site / during operation stage	MD			√	♦ WDO

* Des - Design, C - Construction, O – Operation

Table B.6 Implementation Schedule for Land Contamination Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S8.7.1.1	• No mitigation measure is required.	N/A	N/A				N/A

Table B.7 Implementation Schedule for Ecology Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S9.8.1.2	*Avoidance* • Avoided encroaching on recognized sites of conservation importance (i.e. the CPA comprising the oyster shell beach, rocky outcrop with the lighthouse to the south of LYM Village). • Avoided direct impact on area with relatively higher abundance of coral colonies (i.e. REA 2). • Avoided direct impact on natural terrestrial habitats, (e.g. mixed woodland, natural watercourses) and associated fauna and flora.	Works sites / during design, construction and operation stages	Project Proponent	√	√	√	♦ EIAO-TM
S9.8.1.3 – S9.8.1.4	*Minimisation of Direct Loss of Coral* • A detailed coral mapping should be undertaken before the commencement of the works • A detailed Coral Mitigation Plan should be prepared prior to the implementation of mitigation measures. Suitable recipient site(s) should be identified. Description of methodology including translocation (e.g. pre-translocation survey, identification / proposal of coral recipient site(s)) and/or other best practicable mitigation measures, and post-mitigation monitoring programme should be prepared with reference to recently approved EIA and subject to comment by the AFCD before commencement of the coral mitigation. All the coral mitigation exercises should be conducted by experienced marine ecologist(s) with at least 5 years relevant experience.	Works sites / prior to construction stage	Contractor		√		♦ Cap. 586
S9.8.1.3	• During operation phase, coral survey will be carried out to review and update the conditions of corals in the dredging area and its vicinity prior to each	Dredging area and its vicinity / prior to each	Contractor			√	♦ Cap. 586

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	maintenance dredging. Subject to the findings of the coral survey, the impact on corals due to maintenance dredging will be reviewed and mitigation measures will be proposed as necessary.	maintenance dredging in operation stage					
S9.8.1.5	*Minimisation of Water Quality Impact* • Adoption of the mitigation measures recommended in water quality impact assessment during capital and maintenance dredging operations, including use of closed grab, restriction of dredging production rate (no more than 100m^3 per hour) and deployment of silt curtains.	Works site / during dredging operation in the construction and maintenance dredging stages	Contractors		√	√	♦ EIAO-TM ♦ WPCO ♦
S9.8.1.6	• To minimise the contamination of wastewater discharge, accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures recommended in water quality impact assessment should be adopted to control construction site runoff and drainage form the work areas, and to prevent runoff and drainage water with high levels of suspended solids from entering the nearby local stormwater drainage system and water bodies directly. The mitigation measures include: – The good site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be strictly followed to minimise surface runoff. – Surface run-off from construction sites should be discharged into storm drains via adequately designed sand / silt removal facilities such as sand traps, silt traps and sedimentation basins; – Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during	Works site / during the construction stage	Contractors		√		♦ WPCO ♦ ProPECC PN 1/94

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	rainstorms; – Good construction and site management practices should be observed to ensure that litter, fuels and solvents do no enter the storm water drains; and – Chemical toilets should be provided within the construction site and properly maintained. All effluent discharged from the construction site should comply with the standards stipulated in the "Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters" (TM-DSS).						
S9.8.1.7	*Other Minimisation Measures* • To mitigate the impact of the loss, the proposed sloping seawall would be constructed with rock armours which would have spaces between rock armour units to allow intertidal organisms to grow. • The new vertical seawall for the lookout points and viewing platform and the breakwater would also provide additional hard substrata for the recolonization of intertidal fauna and corals. Ecological features e.g. seawall enhanced with rough texture and irregular pattern would be incorporated into the design of vertical seawall as far as practicable. A submission on the detailed design of the ecological features to be adopted will be prepared subject to comment by the AFCD prior to the installation of the ecological features.	Works site / during the construction and operation stages	Project Proponent / Contractors		√	√	♦ EIAO-TM

* Des - Design, C - Construction, O – Operation

Table B.8 Implementation Schedule for Fisheries Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
S10.7.1.3	• During the capital and maintenance dredging operations, mitigation measures (including use of closed grab, silt curtains and restriction of dredging rate to no more than 100m^3 per hour) recommended in the water quality impact assessment would be implemented to control water quality impacts to within acceptable levels. These mitigation measures would also control and minimize the indirect impacts on fisheries resources due to deterioration in water quality as a result of both capital and maintenance dredging works.	Works site / during the construction and operation stages	Contractors		√	√	♦ EIAO-TM ♦ ProPECC PN 1/94 ♦ WPCO

* Des - Design, C - Construction, O – Operation

Table B.9 Implementation Schedule for Landscape and Visual Impact Mitigation Measures

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
Table 11.10	• CM1 - All the existing Trees to be retained and not to be affected by the Project should be carefully protected during the construction phase in accordance with DEVB TCW No. 7/2015 titled "Tree Preservation" and the latest "Guidelines on Tree Preservation during Development" issued by GLTM Section of DEVB, including provision of Tree Protection Zones (TPZs). Any existing vegetation in landscaped areas and natural terrain not to be affected by the Project should also be carefully preserved. Therefore, these existing landscape elements can maintain their qualities throughout the construction phase. • CM4 - Lighting for the construction works at night, if any, should be carefully controlled to prevent light overspill to the nearby VSRs and into the sky. • CM5 - Decorative Hoardings, with designs and forms compatible with the surrounding settings, should be erected during the construction phase to minimise the potential landscape and visual impacts from the construction works and activities, e.g. avoiding unintended destruction of existing trees and other landscape elements, and reducing visual bulkiness of the screen hoardings, etc. • CM6 - The layout and arrangement of construction site facilities which include site office and temporary storage area should be properly managed and construction activities at the site should be carefully supervised and controlled to minimise potential	Works site / during the design and construction stages	Project Proponent/ Contractors	√	√		♦ EIAO-TM ♦ DEVB TC (W) No.7/2015 ♦ Guidelines on Tree Preservation during Development

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	adverse landscape and visual impacts.						
Table 11.10	• CM7 - A buffer zone with a minimum distance of about 10m will be provided between the CPA and the boundary of dredging works to minimise the potential impact on the CPA arising from the dredging activities.	Works site / during the design construction and operation stages	Project Proponent/ Contractors	√	√	√	
Table 11.10	• CM8 - Silt curtains will be deployed to enclose the dredging works to minimise the potential water quality impact (e.g. dispersion of suspended sediments) on the CPA. • CM9 - The dredging works will be closely supervised by site staff to ensure no unauthorised works will be carried out within the CPA.	Works site / during the construction stage	Project Proponent/ Contractors		√		♦ EIAO-TM ♦ WPCO
Table 11.11	• OM1 - A buffer zone with a minimum distance of about 10m will be provided between the CPA and the boundary of maintenance dredging works to minimise the potential impact on the CPA arising from the dredging activities. • OM2 - Silt curtains will be deployed to enclose the maintenance dredging works to minimise the potential water quality impact (e.g. dispersion of suspended sediments) on the CPA. • OM 3 - The maintenance dredging works will be closely supervised by site staff to ensure no unauthorised works will be carried out within the CPA.	Works site / during maintenance dredging in operation stage	Project Proponent/ Contractors			√	♦ EIAO-TM
Table 11.11	• OM 4 - The Aboveground/Above-sea-level Structures/Hardscape Features of the Project, including the pavilion, the breakwater, and the promenade with public landing facility, etc. and elements of streetscape in regard to the layouts, forms, materials and finishes shall be sensitively	Works site / during the design and operation stages	Project Proponent/ Contractors	√		√	♦ EIAO-TM

EIA Ref.	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*			Relevant Legislation and Guidelines
				Des	C	O	
	designed, so that the structures/hardscape features can blend with the surrounding landscape and visual context, e.g. the pavilion should be visually permeable and its appearance and orientation should take into account the overall landscape master plan of the proposed enhancement works. The proposed colour and texture for the proposed breakwater and lookout points shall be visually compatible with the adjacent landscape elements.						
Table 11.11	• OM5 - Buffer Planting shall be provided at the perimeter of potential intrusive aboveground structures, so as to visually screen and soften their hard edges and surfaces and create a more harmonious landscape. • OM 6 - Opportunity of Amenity Planting shall be maximised within the Project, so that the proposed works will be more compatible and harmonious with the surroundings landscape- and visual-wise. • OM7 - During the Operation Phase, all disturbed hard and soft landscape areas within temporary works sites and works areas caused by the proposed works shall have already been reinstated equal or better quality to the satisfaction of the relevant Government Departments, so as to maintain or improve the existing landscape and visual quality.	Works site / during the operation stage	Project Proponent/ Contractors			√	♦ EIAO-TM

* Des - Design, C - Construction, O – Operation

Appendix C

Contract No. CV/2020/09 Lei Yue Mun Waterfront Enhancement Project
EM&A Monitoring Schedule

Aug-21						
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
1	**2**	**3**	**4**	**5**	**6**	**7**
			Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4			
8	**9**	**10**	**11**	**12**	**13**	**14**
					Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4	
15	**16**	**17**	**18**	**19**	**20**	**21**
				Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4		
22	**23**	**24**	**25**	**26**	**27**	**28**
			Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4		Post Translocation Coral Survey	
29	**30**	**31**				
		Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4				

Remarks:
Daytime Noise Monitoring (07:00-1900)
Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids

Note:
* - Due to safety concern of vessel transportation earlier than 0700, Water Quality Monitoring would start at 0800.
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is adopted.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.

Contract No. CV/2020/09 Lei Yue Mun Waterfront Enhancement Project
EM&A Monitoring Schedule

Sep-21						
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
			1	**2**	**3**	**4**
5	**6**	**7**	**8**	**9**	**10**	**11**
					Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4	
12	**13**	**14**	**15**	**16**	**17**	**18**
		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 02:19 - 09:00 Flood Tide: 09:00 - 17:00 <u>Monitoring Time:</u> Mid-ebb: 08:00 - 09:00*& Mid-flood: 11:15 - 14:45		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 Tidal Period: Ebb Tide: 04:35 - 13:00 Flood Tide: 13:00 - 20:00 Monitoring Time: Mid-ebb: 08:00 - 10:32* Mid-flood: 14:45 - 18:15 Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 06:46 - 14:06 Flood Tide: 14:06 - 21:18 <u>Monitoring Time:</u> Mid-ebb: 08:41 - 12:11 Mid-flood: 14:27 - 17:57
19	**20**	**21**	**22**	**23**	**24**	**25**
		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 09:23 - 15:40 Flood Tide: 15:40 - 22:27 <u>Monitoring Time:</u> Mid-ebb: 10:46 - 14:16 Mid-flood: 16:00 - 19:00&		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 11:00 - 16:29 Flood Tide: 04:00 - 11:00 <u>Monitoring Time:</u> Mid-ebb: 11:59 - 15:29 Mid-flood: 08:00 - 09:15*	Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4	Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 12:00 - 17:00 Flood Tide: 05:25 - 12:00 <u>Monitoring Time:</u> Mid-ebb: 12:45 - 16:15 Mid-flood: 08:00 - 10:27 *
26	**27**	**28**	**29**	**30**		
		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 Tidal Period: Ebb Tide: 15:00 - 18:00 Flood Tide: 08:00 - 15:00 Monitoring Time: Mid-ebb: 15:09 - 17:51$ Mid-flood: 09:45 - 13:15 Daytime Noise monitoring for NM1, NM2-A, NM3 & NM4		Impact Water Quality monitoring for C1, C2, M1, M2, M3 & M4 <u>Tidal Period:</u> Ebb Tide: 03:00 - 11:57 Flood Tide: 11:57 - 23:59 <u>Monitoring Time:</u> Mid-ebb: 08:00 - 09:13* Mid-flood: 16:13 - 19:00&		

Remarks:
Daytime Noise Monitoring (07:00-1900)
Monitoring Parameters: Dissolved oxygen, Temperature, pH, Turbidity, Salinity, Suspended Solids

Note:
* - Due to safety concern of vessel transportation earlier than 0800, Water Quality Monitoring would start at 0800.
$ - Since predicted tide is shorter than 3.5 hours, method of 90% tidal period as monitoring time is adopted.
& - Due to safety concern for sampling event in night-time, method of 90% tidal period as monitoring time is approached and end at 1900.

Appendix D

Table 4.3 Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	ER	Contractor
Action Level	1. Notify IEC, ER and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; and 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; and 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; and 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC, ET and ER; and 2. Implement noise mitigation proposals.
Limit Level	1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, ER and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; and 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; and 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Appendix E

SCARLET | TECH

CERTIFICATE OF CALIBRATION

NO. 20200519037

Name of Product:	Sound Level Meter
Model:	ST-11D
Serial Number:	820197
Specification:	Class 1
Conclusion:	Pass
Date of calibration:	2020-12-31
Due Date:	2021-12-30

SCARLET TECH CO., LTD. SCARLET | TECH 思碩科技有限公司

Calibrated by:

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass then, and applies only to the unit identified above.
II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.
III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co Ltd Taiwan.

1. Preliminary inspection: OK

2. Type & serial No. of Microphone: AWA14425-35373

3. Adjustments to indicated sound levels:

Type of Calibrator B&K 4231

Sound Pressure Level 94.0 dB

Equivalent Free-field Sound Level (reference environment conditions) 93.8 dB

4. Measuring up limit: 140 dBA

5. Frequency weightings (Acoustic signal tests for Z weighting, other electric signal tests.)

Nominal frequency /Hz	Frequency weighting / dB			Nominal frequency /Hz	Frequency weighting / dB		
	A	C	Z		A	C	Z
10	-71.2	-14.4	-0.7	1000	0.0	-0.1	0.0
20	-50.2	-6.1	0.0	2000	1.2	-0.2	0.5
31.5	-39.5	-3.0	0.1	4000	1.0	-0.9	0.4
63	-26.3	-0.9	0.5	8000	-1.0	-3.2	-0.4
125	-16.0	-0.3	0.1	12500	-5.9	-7.9	-1.5
250	-8.6	-0.1	0.3	16000	-11.8	-13.8	-0.8
500	-3.2	-0.1	0.2	20000	-23.9	-25.9	0.1

6. Self-generated noise

Microphone replaced by electrical input signal device

9.4 dB(A)	15.6 dB(C)	19.5 dB(Z)

7. F&S Weighting

Rate of the F weighting decrease（dB/s）	35.2
Rate of the S weighting decrease（dB/s）	4.4
Deviation of F&S	0.0

8. Level Linearity (A-weighting at frequency 1 kHz)

Reference sound level 90.0 dB

Max error at 10dB steps upper reference sound level -0.1 dB

Max error at 1dB steps within 5dB of the upper limit linear operating range 0.0 dB

Max error at 10dB steps below reference sound level 0.1 dB

Max error at 1dB steps within 5dB upper the lower limit linear operating range 0.2 dB

9. Tone burst response（A Weighting）：

Single Toneburst duration /ms	Toneburst response /dB			
	L_{AFmax}-L_A	L_{ASmax}-L_A	L_{AE}-L_A	L_{AeqT}-L_A
500	0.0	-4.0	-2.9	-7.0
200	-1.0	-7.4	-6.9	-7.0
50	-18.0	-26.9	-26.9	-7.0
10	-27.2	/	-36.0	-7.0

10. Peak C sound level （500Hz）：

Cycle	One cycle	nominal value	Positive half	nominal value	Negative half	nominal value
LCpeak-LC(dB)	3.5	3.5	2.3	2.4	2.3	2.4

11. Overload indication： Pass

12. Statistical analysis function

Sweep signal maximum indicated sound level: 112.8 dB

Sweep amplitude: 40 dB

Scan cycle time: 60 S; Measurement period: 180 S.

Items	Measured value/dB	Theoretical calculated value/dB	Error/dB
LAeq,T	103.2	103.2	0.0

L5	110.8	110.8	0.0
L10	108.8	108.8	0.0
L50	92.9	92.8	0.1
L90	76.9	76.8	0.1
L95	75.0	74.8	0.2

Uncertainty of measurement results: 0.4 dB (k=2)

Environment conditions:

Air temperature: 25 ℃

Relative humidity: 50 %

Static pressure: 100.6 kPa

References:

IEC 61672-3 Sound Level Meters Part 3: Periodic tests

SCARLET | TECH

CERTIFICATE OF CALIBRATION

NO. 20200519040

Name of Product:	Sound Level Meter
Model:	ST-11D
Serial Number:	820200
Specification:	Class 1
Conclusion:	Pass
Date of calibration:	2021-01-18
Due Date:	2022-01-17

Calibrated by: SCARLET TECH CO., LTD. 鯽呔科技有限公司 SCARLET TECH

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass then, and applies only to the unit identified above.

II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co Ltd Taiwan.

1. Preliminary inspection： OK

2. Type & serial No. of Microphone： AWA14425-27998

3. Adjustments to indicated sound levels：

Type of Calibrator B&K 4231

Sound Pressure Level 93.8 dB

Equivalent Free-field Sound Level (reference environment conditions) 93.8 dB

4. Measuring up limit： 140 dBA

5. Frequency weightings (Acoustic signal tests for Z weighting, other electric signal tests.)

Nominal frequency /Hz	Frequency weighting / dB			Nominal frequency /Hz	Frequency weighting / dB		
	A	C	Z		A	C	Z
10	-71.0	-14.4	-0.9	**1000**	0.0	-0.1	-0.3
20	-50.4	-6.1	-0.1	**2000**	1.2	-0.2	0.2
31.5	-39.8	-3.1	0.0	**4000**	1.0	-0.9	0.3
63	-26.2	-0.9	0.3	**8000**	-1.0	-3.2	-0.5
125	-16.0	-0.3	0.1	**12500**	-4.5	-6.4	-0.7
250	-8.6	-0.1	0.1	**16000**	-9.6	-11.5	-1.3
500	-3.2	-0.1	0.1	**20000**	-23.9	-25.9	-0.8

6. Self-generated noise

Microphone replaced by electrical input signal device

8.9 dB(A)	16.6 dB(C)	19.8 dB(Z)

7. F&S Weighting

Rate of the F weighting decrease（dB/s）	35.2
Rate of the S weighting decrease（dB/s）	4.4
Deviation of F&S	0.0

8. Level Linearity (A-weighting at frequency 1 kHz)

Reference sound level 90.0 dB

Max error at 10dB steps upper reference sound level -0.1 dB

Max error at 1dB steps within 5dB of the upper limit linear operating range 0.0 dB

Max error at 10dB steps below reference sound level 0.1 dB

Max error at 1dB steps within 5dB upper the lower limit linear operating range 0.2 dB

9. Tone burst response（A Weighting）：

Single Toneburst duration /ms	Toneburst response /dB			
	L_{AFmax}-L_A	L_{ASmax}-L_A	L_{AE}-L_A	L_{AeqT}-L_A
500	0.0	-4.0	-2.9	-7.0
200	-1.0	-7.4	-6.9	-7.0
50	-18.0	-26.9	-26.9	-7.0
10	-27.2	/	-36.0	-7.0

10. Peak C sound level （500Hz）：

Cycle	One cycle	nominal value	Positive half	nominal value	Negative half	nominal value
LCpeak-LC(dB)	3.5	3.5	2.3	2.4	2.3	2.4

11. Overload indication： Pass

12. Statistical analysis function

Sweep signal maximum indicated sound level: 112.8 dB

Sweep amplitude: 40 dB

Scan cycle time: 60 S; Measurement period: 180 S.

Items	Measured value/dB	Theoretical calculated value/dB	Error/dB
LAeq,T	103.2	103.2	0.0

L5	110.8	110.8	0.0
L10	108.8	108.8	0.0
L50	92.9	92.8	0.1
L90	76.9	76.8	0.1
L95	75.0	74.8	0.2

Uncertainty of measurement results: 0.4 dB (k=2)

Environment conditions:

Air temperature: 20 °C

Relative humidity: 50 %

Static pressure: 100.6 kPa

References:

IEC 61672-3 Sound Level Meters Part 3: Periodic tests

SCARLET | TECH

CERTIFICATE OF CALIBRATION

NO. 20200608004

Name of Product:	Sound Level Meter
Model:	ST-11D
Serial Number:	820204
Specification:	Class 1
Conclusion:	Pass
Date of calibration:	2020-12-31
Due Date:	2021-12-30

SCARLET TECH CO., LTD. SCARLET | TECH 思炫科技有限公司

Calibrated by:

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass then, and applies only to the unit identified above.
II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.
III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co Ltd Taiwan.

1. Preliminary inspection: OK

2. Type & serial No. of Microphone: AWA14425-40698

3. Adjustments to indicated sound levels:

Type of Calibrator B&K 4231

Sound Pressure Level 94.0 dB

Equivalent Free-field Sound Level (reference environment conditions) 93.8 dB

4. Measuring up limit: 140 dBA

5. Frequency weightings (Acoustic signal tests for Z weighting, other electric signal tests.)

Nominal frequency /Hz	Frequency weighting / dB			Nominal frequency /Hz	Frequency weighting / dB		
	A	C	Z		A	C	Z
10	-70.9	-14.4	-0.6	1000	0.0	0.0	-0.1
20	-50.4	-6.2	-0.1	2000	1.2	-0.2	0.4
31.5	-39.4	-3.0	0.1	4000	1.1	-0.8	0.3
63	-26.3	-0.9	0.2	8000	-1.1	-3.1	0.0
125	-16.0	-0.3	0.1	12500	-6.0	-8.0	-0.9
250	-8.7	-0.1	0.2	16000	-11.9	-13.9	-0.7
500	-3.2	-0.1	0.2	20000	-24.0	-26.0	-0.6

6. Self-generated noise

Microphone replaced by electrical input signal device

13.2 dB(A)	16.6 dB(C)	19.8 dB(Z)

7. F&S Weighting

Rate of the F weighting decrease（dB/s）	35.2
Rate of the S weighting decrease（dB/s）	4.4
Deviation of F&S	0.0

8. Level Linearity (A-weighting at frequency 1 kHz)

Reference sound level 90.0 dB

Max error at 10dB steps upper reference sound level -0.1 dB

Max error at 1dB steps within 5dB of the upper limit linear operating range 0.0 dB

Max error at 10dB steps below reference sound level -0.1 dB

Max error at 1dB steps within 5dB upper the lower limit linear operating range -0.1 dB

9. Tone burst response（A Weighting）:

Single Toneburst duration /ms	Toneburst response /dB			
	L_{AFmax}-L_A	L_{ASmax}-L_A	L_{AE}-L_A	L_{AeqT}-L_A
500	0.0	-4.0	-2.9	-7.0
200	-1.0	-7.4	-6.9	-7.0
50	-18.0	-26.9	-26.9	-7.0
10	-27.2	/	-36.0	-7.0

10. Peak C sound level （500Hz）:

Cycle	One cycle	nominal value	Positive half	nominal value	Negative half	nominal value
LCpeak-LC(dB)	3.5	3.5	2.3	2.4	2.3	2.4

11. Overload indication: Pass

12. Statistical analysis function

Sweep signal maximum indicated sound level: 112.8 dB

Sweep amplitude: 40 dB

Scan cycle time: 60 S; Measurement period: 180 S.

Items	Measured value/dB	Theoretical calculated value/dB	Error/dB
LAeq,T	103.2	103.2	0.0

L5	110.8	110.8	0.0
L10	108.8	108.8	0.0
L50	92.9	92.8	0.1
L90	76.9	76.8	0.1
L95	75.0	74.8	0.2

Uncertainty of measurement results: 0.4 dB (k=2)

Environment conditions:

Air temperature: 25 °C

Relative humidity: 50 %

Static pressure: 100.6 kPa

References:

IEC 61672-3 Sound Level Meters Part 3: Periodic tests

SCARLET | TECH

CERTIFICATE OF CALIBRATION

NO. 20200519066

Name of Product:	Sound Level Meter
Model:	ST-11D
Serial Number:	820346
Specification:	Class 1
Conclusion:	Pass
Date of calibration:	2021-01-18
Due Date:	2022-01-17

Calibrated by:

SCARLET TECH CO., LTD. SCARLET | TECH 有限公司

I. This report certifies that all calibration equipment used in the test is traceable with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass then, and applies only to the unit identified above.

II. This certificate is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

III. This certificate of calibration shall not be reproduced except in full, without written permission of the Scarlet Tech Co Ltd Taiwan.

1. Preliminary inspection: OK

2. Type & serial No. of Microphone: AWA14425-14607

3. Adjustments to indicated sound levels:

Type of Calibrator B&K 4231

Sound Pressure Level 94.0 dB

Equivalent Free-field Sound Level (reference environment conditions) 93.8 dB

4. Measuring up limit: 140 dBA

5. Frequency weightings (Acoustic signal tests for Z weighting, other electric signal tests.)

Nominal frequency /Hz	Frequency weighting / dB			Nominal frequency /Hz	Frequency weighting / dB		
	A	C	Z		A	C	Z
10	-71.3	-14.3	-0.9	1000	0.0	0.0	-0.2
20	-50.3	-6.2	0.1	2000	1.2	-0.2	0.3
31.5	-39.4	-3.1	-0.1	4000	1.1	-0.8	0.4
63	-26.3	-0.9	0.3	8000	-1.2	-3.1	-0.3
125	-16.0	-0.3	0.1	12500	-5.9	-7.9	-0.6
250	-8.7	-0.1	0.2	16000	-11.8	-13.8	-0.2
500	-3.2	-0.1	0.1	20000	-23.9	-25.9	0.1

6. Self-generated noise

Microphone replaced by electrical input signal device

10.4 dB(A)	11.5 dB(C)	19.7 dB(Z)

7. F&S Weighting

Rate of the F weighting decrease（dB/s）	35.2
Rate of the S weighting decrease（dB/s）	4.4
Deviation of F&S	0.0

8. Level Linearity (A-weighting at frequency 1 kHz)

Reference sound level 90.0 dB

Max error at 10dB steps upper reference sound level -0.1 dB

Max error at 1dB steps within 5dB of the upper limit linear operating range 0.0 dB

Max error at 10dB steps below reference sound level 0.1 dB

Max error at 1dB steps within 5dB upper the lower limit linear operating range 0.2 dB

9. Tone burst response（A Weighting）：

Single Toneburst duration /ms	Toneburst response /dB			
	L_{AFmax}-L_A	L_{ASmax}-L_A	L_{AE}-L_A	L_{AeqT}-L_A
500	0.0	-4.0	-2.9	-7.0
200	-1.0	-7.4	-6.9	-7.0
50	-18.0	-26.9	-26.9	-7.0
10	-27.2	/	-36.0	-7.0

10. Peak C sound level （500Hz）：

Cycle	One cycle	nominal value	Positive half	nominal value	Negative half	nominal value
LCpeak-LC(dB)	3.5	3.5	2.3	2.4	2.3	2.4

11. Overload indication： Pass

12. Statistical analysis function

Sweep signal maximum indicated sound level: 112.8 dB

Sweep amplitude: 40 dB

Scan cycle time: 60 S; Measurement period: 180 S.

Items	Measured value/dB	Theoretical calculated value/dB	Error/dB
LAeq,T	103.2	103.2	0.0

L5	110.8	110.8	0.0
L10	108.8	108.8	0.0
L50	92.9	92.8	0.1
L90	76.9	76.8	0.1
L95	75.0	74.8	0.2

Uncertainty of measurement results: 0.4 dB (k=2)

Environment conditions:

Air temperature: 20 °C

Relative humidity: 50 %

Static pressure: 100.6 kPa

References:

IEC 61672-3 Sound Level Meters Part 3: Periodic tests

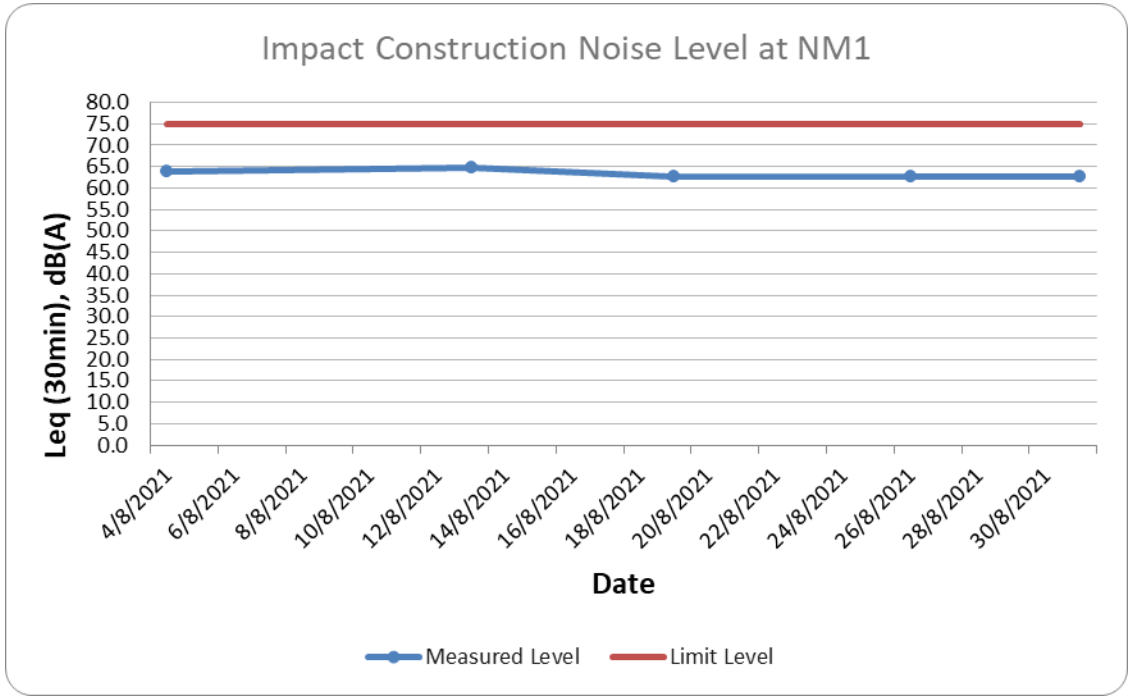
Appendix F

Impact Noise Monitoring Data

Location NM1 - Village house in Lei Yue Mun Hoi Pong Road Central

Daytime (0700 – 1900) except general holidays and Sunday

Date	Time			Weather	$L_{eq\ (30min)}$	L_{10}	L_{90}	Remarks
4/8/2021	14:15	-	14:45	Fine	63.8	67.8	61.1	N.A.
13/8/2021	13:34	-	14:04	Cloudy	63.4	67.7	60.6	N.A.
19/8/2021	13:59	-	14:29	Sunny	65.6	66.9	63.5	N.A.
26/8/2021	15:04	-	15:34	Sunny	65.4	68.7	61.5	N.A.
31/8/2021	14:22	-	14:52	Cloudy	65.3	67.9	61.7	N.A.

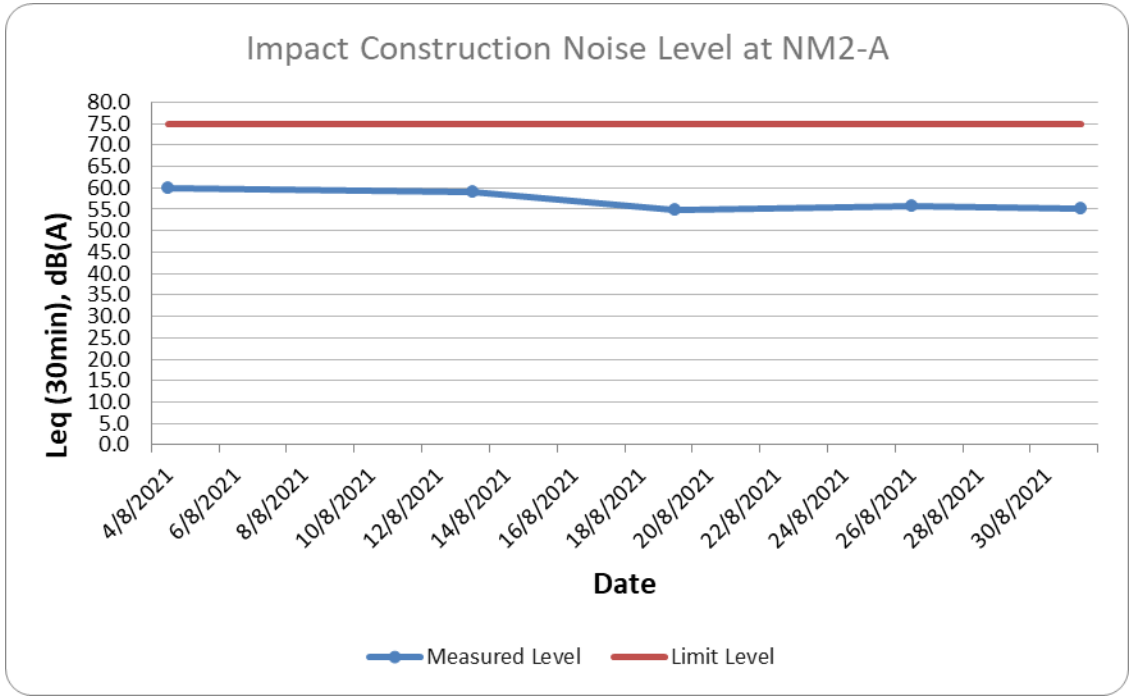


Impact Noise Monitoring Data

Location NM2A - No.79B, Lei Yue Mun Hoi Pong Road East

Daytime (0700 – 1900) except general holidays and Sunday

Date	Time			Weather	$L_{eq\ (30min)}$	L_{10}	L_{90}	Remarks
4/8/2021	14:48	-	15:18	Fine	59.9	63.9	57.8	N.A.
13/8/2021	14:13	-	14:43	Cloudy	59.0	62.5	57.9	N.A.
19/8/2021	14:33	-	15:03	Sunny	54.8	59.9	50.2	N.A.
26/8/2021	14:59	-	15:29	Sunny	55.6	57.6	51.7	N.A.
31/8/2021	13:44	-	14:14	Cloudy	55.1	58.8	51.4	N.A.

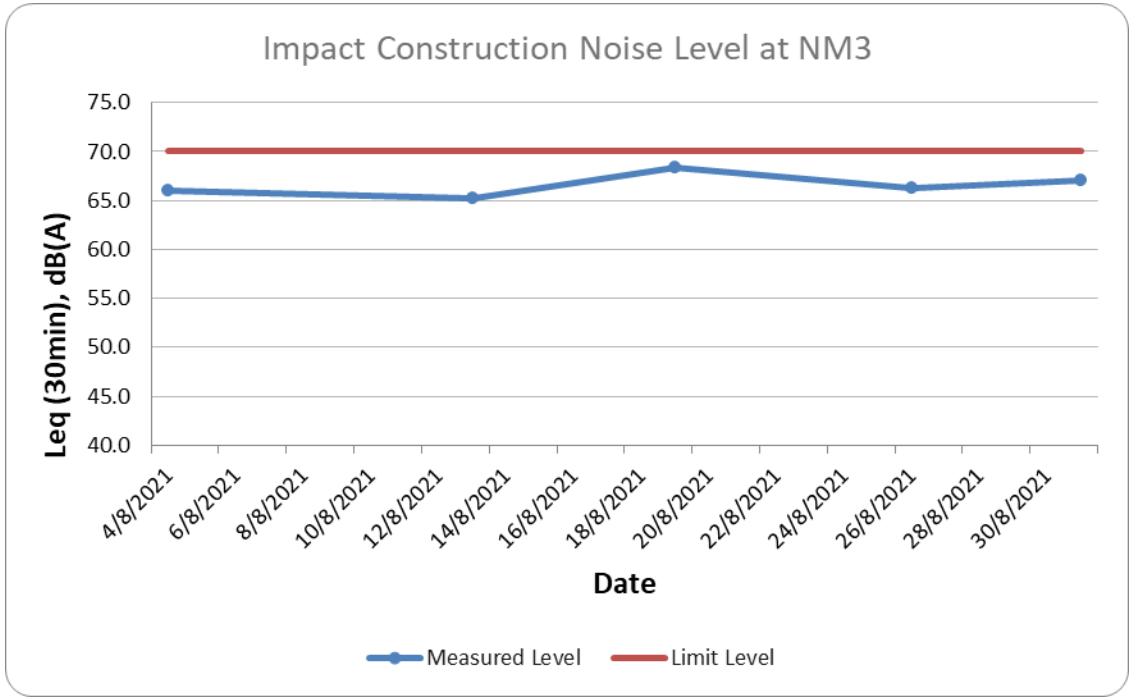


Impact Noise Monitoring Data

Location NM3 - Jockey Club Lei Yue Mun Plus

Daytime (0700 – 1900) except general holidays and Sunday

Date	Time			Weather	$L_{eq\ (30min)}$	L_{10}	L_{90}	Remarks
4/8/2021	13:04	-	13:34	Fine	66.0	69.3	62	N.A.
13/8/2021	12:13	-	12:43	Cloudy	65.2	69.6	61.6	N.A.
19/8/2021	12:50	-	13:20	Sunny	68.3	69.5	66.8	N.A.
26/8/2021	13:46	-	14:16	Sunny	66.3	68	64.4	N.A.
31/8/2021	12:27	-	12:57	Cloudy	67.1	68	64.6	N.A.

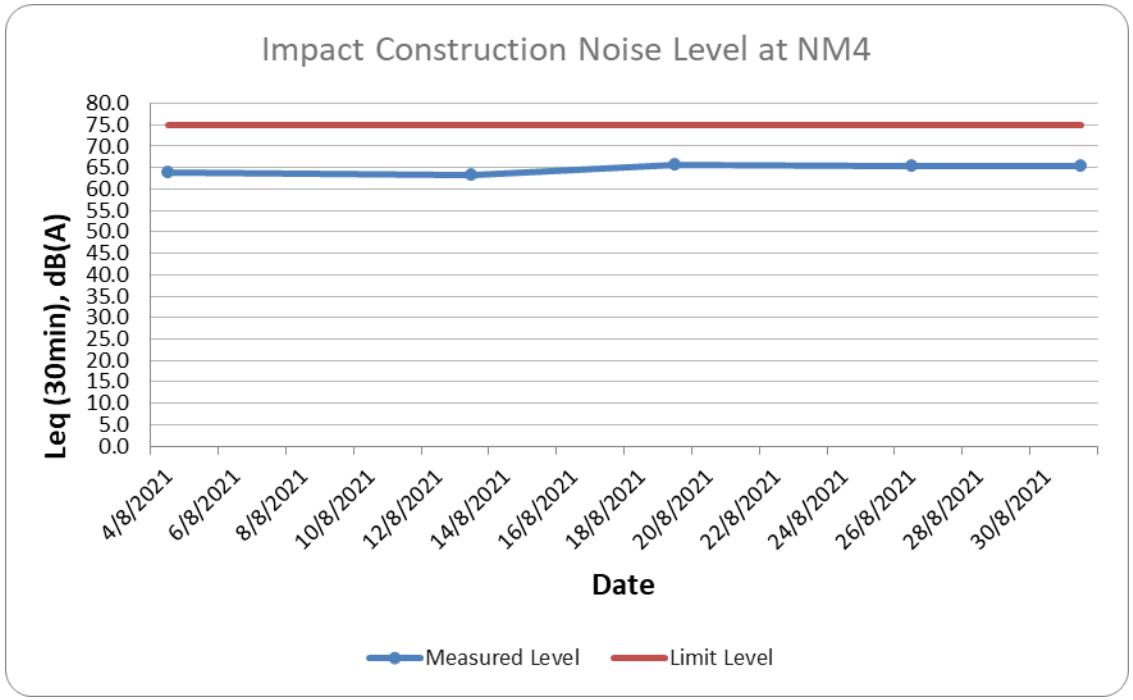


Impact Noise Monitoring Data

Location NM4 - No. 21C, Lei Yue Mun Hoi Pong Road East

Daytime (0700 – 1900) except general holidays and Sunday

Date	Time			Weather	$L_{eq\ (30min)}$	L_{10}	L_{90}	Remarks
4/8/2021	14:15	-	14:45	Fine	63.8	67.8	61.1	N.A.
13/8/2021	13:34	-	14:04	Cloudy	63.4	67.7	60.6	N.A.
19/8/2021	13:59	-	14:29	Sunny	65.6	66.9	63.5	N.A.
26/8/2021	15:04	-	15:34	Sunny	65.4	68.7	61.5	N.A.
31/8/2021	14:22	-	14:52	Cloudy	65.3	67.9	61.7	N.A.



Appendix G

Table 5.5 Event and Action Plan

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plants, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. (The above actions should be taken within 1 working day after the exceedance is identified) 7. Repeat measurement on next day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented. 3. Assess the effectiveness of the implemented mitigation measures 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plants and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within 1 working day after the exceedance is identified)
Action level being exceeded by more than one consecutive sampling days	1. Repeat *in-situ* measurement to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plants, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. Ensure mitigation measures are implemented; 7. Prepare to increase the monitoring frequency to daily; 8. (The above actions should be taken within 1 working day after the exceedance is identified) 9. Repeat measurement on next working day of exceedance.	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with IEC on the proposed mitigation measures; 2. Make agreement on the mitigation measures to be implemented; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plants and equipment; 4. Consider changes of working methods; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within 1 working day after the exceedance is identified)

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plants, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level. 8. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures. 5. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plants and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and Propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures
Limit level being exceeded by more than one consecutive sampling day	1. Repeat *in-situ* measurement to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plants, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for 2 consecutive days. 8. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with ET and Contractor on the mitigation measures; 2. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Assess the effectiveness of the implemented mitigation measures. 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging and sand filling work until no exceedance of Limit level. 6. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plants and equipment; 4. Consider changes of working methods; 5. Discuss with ET, IEC and ER and Propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the ER, to slow down or stop all or part of the dredging and sand filling work.

Appendix H

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 Aug 2021 - 31 Aug 2021	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 Aug 2021 - 31 Aug 2021	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 Aug 2021 - 31 Aug 2021	0	0	N/A