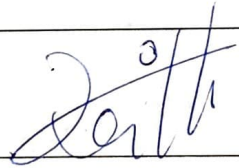


# Concentric – Hong Kong River Joint Venture

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

**Coral Translocation Plan  
(Version 3.0)**

Endorsed By



(Mr. Keith Kei, ET's Coral Specialist)

**REMARKS:**

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

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

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**TABLE OF CONTENTS**

	<b>Page</b>
<b>1 INTRODUCTION</b> .....	<b>1</b>
Background .....	1
Purpose of the Coral Translocation Plan.....	1
Structure of the Coral Translocation Plan .....	2
<b>2 CORAL COLONIES TO BE TRANSLOCATED</b> .....	<b>3</b>
Coral Mapping Survey at the Proposed Dredging Area (LYM) .....	3
<b>3 CORAL RECIPIENT SITE</b> .....	<b>9</b>
Coral Survey at Potential Coral Recipient Site .....	9
Recommendation of Coral Recipient Site.....	20
<b>4 SUMMARY OF CORAL BASELINE SURVEY FINDINGS</b> .....	<b>21</b>
<b>5 CORAL TRANSLOCATION METHODOLOGY</b> .....	<b>22</b>
Coral Translocation Procedure.....	22
<b>6 POST-TRANSLOCATION MONITORING</b> .....	<b>24</b>
Event and Action Plan.....	24
Reporting for Post-translocation Monitoring .....	25
<b>7 REFERENCES</b> .....	<b>26</b>

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**LIST OF TABLES**

Table 2.1	Size, Percentage Area of Sedimentation (Sed), Bleaching (B) and Partial Mortality (PM) of Coral Colonies Feasible for Translocation in Coral Mapping Area at LYM
Table 2.2	Summary of Coral Species Found in the Coral Mapping Area that are Feasible for Translocation
Table 3.1	GPS Coordinates and Physical Attributes of Dive Survey Locations at FTC, Junk Bay
Table 3.2	Dive Surveys - Ecological and Substrate Attributes, and Taxonomic Inventories Along REA Transect at FTC, Junk Bay
Table 3.3	Size, Percentage Area of Sedimentation (Sed), Bleaching (B) and Partial Mortality (PM) of Coral Colonies along REA Transects at FTC, Junk Bay
Table 3.4	Occurrence and Size Range of Coral Species at FTC, Junk Bay
Table 3.5	Occurrence of Coral Species at Coral Recipient and Donor Sites
Table 4.1	Current Status of Coral Species Feasible for Translocation in Hong Kong Waters
Table 6.1	Action and Limit Levels for Coral Post-translocation Monitoring
Table 6.2	Event and Action Plan for Coral Post-translocation Monitoring

**LIST OF FIGURES**

Figure 1	Site Layout Plan
Figure 2	Location Plan of Coral Baseline Survey
Figure 3	Coral Mapping Survey Grids
Figure 4	Location of Coral Colonies in the Coral Mapping Area
Figure 5a	Location of Coral Recipient Site at Fat Tong Chau, Junk Bay
Figure 5b	Location Plan of Coral Survey at Fat Tong Chau, Junk Bay

**LIST OF APPENDICES**

Appendix Ia	Photos of Spot Dive and REA Survey Locations at FTC, Junk Bay
Appendix Ib	Photos of Representative Taxa at FTC, Junk Bay
Appendix Ic	Photos of Coral Colonies found at FTC, Junk Bay
Appendix II	Sample Datasheet for Post-translocation Monitoring

## 1 INTRODUCTION

### Background

- 1.1 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.
- 1.2 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.
- 1.3 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.
- 1.4 The Work Area of this Project is illustrated in the site layout plan (**Figure 1**).
- 1.5 Wellab Limited was commissioned by Concentric – Hong Kong River Joint Venture (hereinafter called "the Contractor") under Contract No. CV/2020/09 to prepare a detailed Coral Translocation Plan for the Project.

### Purpose of the Coral Translocation Plan

- 1.6 This Coral Translocation Plan is prepared by Wellab and the Coral Specialist of the Environmental Team, Mr. Keith Kei, to present the methodology of coral translocation for the Project, and to fulfil Condition 2.16 of the Environmental Permit No. EP-564/2018.
- 1.7 The objectives of the Coral Translocation Plan include the followings:
  - To provide information of coral colonies to be translocated;
  - To identify and propose a "Coral Recipient Site" for coral colonies to be translocated;
  - To provide the translocation methodology;

- To provide a monitoring programme for post-translocation monitoring.

### **Structure of the Coral Translocation Plan**

1.8 The structure of the report is shown as follows:

Section 1	Introduction
Section 2	Coral Colonies to be Translocated
Section 3	Coral Recipient Site
Section 4	Summary of Coral Baseline Survey Findings
Section 5	Coral Translocation Methodology
Section 6	Post-Translocation Monitoring
Section 7	References

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## 2 CORAL COLONIES TO BE TRANSLOCATED

### Coral Mapping Survey at the Proposed Dredging Area (LYM)

- 2.1 Coral Mapping Survey at LYM was conducted inside a coral mapping area inside the proposed dredging area on 5<sup>th</sup> and 6<sup>th</sup> March 2021. The detailed results of the Coral Mapping Survey are presented in a separated Coral Baseline Report. The coral mapping area is shown in **Figure 2**.
- 2.2 The coral mapping area (approx. 120 x 40 m) was further divided into grids for mapping the location of coral colonies inside each grid (**Figure 3**). The mapping area was divided into 20 grids, labelled as columns 1 to 4 and rows A to E.
- 2.3 Locations of corals (except the locally common species *Oulastrea crispata*) and associated substrates found were recorded, size estimated, and health status (including percentage cover of bleaching, mortality and sedimentation) recorded. The feasibility of translocation of each coral colony was evaluated.
- 2.4 Among the 421 coral colonies mapped during the survey, most were attached to hard substrates, 377 colonies were attached to non-movable boulders or trash and 44 colonies were attached to movable rubbles. The location of patches of coral colonies in the mapping area is shown in **Figure 4**.
- 2.5 The species, number and conditions of the 44 coral colonies found in the mapping area feasible for translocation are presented in **Table 2.1** and summarised in **Table 2.2**.

**Table 2.1 Size, Percentage Area of Sedimentation (Sed), Bleaching (B) and Partial Mortality (PM) of Coral Colonies Feasible for Translocation in Coral Mapping Area at LYM**

Code	Grid no.	Coral no.	Species	Size: Hard corals: L x W cm Octocorals: L cm	Habitat Conditions	%Sed	%B	%PM	Associated Substrate Type	Translocation Feasibility
127	1C	15	<i>Echinogorgia</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
132	1C	20	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
147	1C	35	<i>Echinomuricea</i> sp.	10	Good	0	0	0	Rubble (<50cm)	Yes
148	1C	36	<i>Echinogorgia</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
160	2A	7	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
164	2A	11	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
169	2A	16	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
170	2A	17	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
175	2A	22	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
176	2A	23	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
183	2A	30	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
189	2A	36	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
192	2A	39	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
247	2B	19	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
253	2B	25	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
256	2B	28	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
258	2B	30	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
259	2B	31	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
265	2B	37	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes

Code	Grid no.	Coral no.	Species	Size: Hard corals: L x W cm Octocorals: L cm	Habitat Conditions	%Sed	%B	%PM	Associated Substrate Type	Translocation Feasibility
266	2B	38	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
272	2B	44	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
275	2B	47	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
276	2B	48	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
277	2B	49	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
293	2C	13	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
295	2C	15	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
304	2C	24	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
319	3A	10	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
320	3A	11	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
321	3A	12	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
323	3A	14	<i>Echinomuricea</i> sp.	40	Good	0	0	0	Rubble (<50cm)	Yes
344	3B	10	<i>Echinomuricea</i> sp.	30	Good	0	0	0	Rubble (<50cm)	Yes
350	3B	16	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<50cm)	Yes
352	3B	18	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes
353	3B	19	<i>Echinomuricea</i> sp.	35	Good	0	0	0	Rubble (<50cm)	Yes
354	3B	20	<i>Echinomuricea</i> sp.	30	Good	0	0	0	Rubble (<50cm)	Yes
360	3B	26	<i>Echinomuricea</i> sp.	10	Good	0	0	0	Rubble (<50cm)	Yes
363	3B	29	<i>Menella</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
368	3C	2	<i>Echinomuricea</i> sp.	30	Good	0	0	0	Rubble (<30cm)	Yes
371	3C	5	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<30cm)	Yes



Code	Grid no.	Coral no.	Species	Size: Hard corals: L x W cm Octocorals: L cm	Habitat Conditions	%Sed	%B	%PM	Associated Substrate Type	Translocation Feasibility
375	3C	9	<i>Echinomuricea</i> sp.	15	Good	0	0	0	Rubble (<30cm)	Yes
407	4C	10	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
415	4C	18	<i>Echinomuricea</i> sp.	20	Good	0	0	0	Rubble (<50cm)	Yes
418	4C	21	<i>Echinomuricea</i> sp.	25	Good	0	0	0	Rubble (<50cm)	Yes

Note: Code and Coral no. refers to the separated Coral Baseline Survey Report.

**Table 2.2 Summary of Coral Species Found in the Coral Mapping Area that are Feasible for Translocation**

		<b>Grid no.</b>	<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>1D</b>	<b>1E</b>	<b>2A</b>	<b>2B</b>	<b>2C</b>	<b>2D</b>	<b>2E</b>
<b>Taxon</b>	<b>Family</b>	<b>Species</b>	<b>No. of Moveable Colonies</b>									
Octocoral	Plexauridae	<i>Echinomuricea</i> sp.	0	0	2	0	0	9	11	3	0	0
Octocoral	Plexauridae	<i>Echinogorgia</i> sp. C	0	0	2	0	0	0	0	0	0	0
<hr/>												
			<b>1A</b>	<b>1B</b>	<b>1C</b>	<b>1D</b>	<b>1E</b>	<b>2A</b>	<b>2B</b>	<b>2C</b>	<b>2D</b>	<b>2E</b>
	Hard corals	Total no. of movable species;	0	0	0	0	0	0	0	0	0	0
		Movable colonies	0	0	0	0	0	0	0	0	0	0
	Octocorals	Total no. of movable species;	0	0	2	0	0	1	1	1	0	0
		Movable colonies	0	0	4	0	0	9	11	3	0	0
	Overall	Total no. of movable species;	0	0	2	0	0	1	1	1	0	0
		Movable colonies	0	0	4	0	0	9	11	3	0	0

**Table 2.2 Summary of Coral Species Found in the Coral Mapping Area that are Feasible for Translocation (continued)**

		<b>Grid no.</b>	<b>3A</b>	<b>3B</b>	<b>3C</b>	<b>3D</b>	<b>3E</b>	<b>4A</b>	<b>4B</b>	<b>4C</b>	<b>4D</b>	<b>4E</b>
<b>Taxon</b>	<b>Family</b>	<b>Species</b>	<b>No. of Moveable Colonies</b>									
Octocoral	Plexauridae	<i>Echinomuricea</i> sp.	4	6	3	0	0	0	0	3	0	0
Octocoral	Plexauridae	<i>Menella</i> sp.	0	1	0	0	0	0	0	0	0	0
			<b>3A</b>	<b>3B</b>	<b>3C</b>	<b>3D</b>	<b>3E</b>	<b>4A</b>	<b>4B</b>	<b>4C</b>	<b>4D</b>	<b>4E</b>
	Hard corals	Total no. of movable species;	0	0	0	0	0	0	0	0	0	0
		Movable colonies	0	0	0	0	0	0	0	0	0	0
	Octocorals	Total no. of movable species;	1	2	1	0	0	0	0	1	0	0
		Movable colonies	4	7	3	0	0	0	0	3	0	0
	Overall	Total no. of movable species;	1	2	1	0	0	0	0	1	0	0
		Movable colonies	4	7	3	0	0	0	0	3	0	0

### 3 CORAL RECIPIENT SITE

#### Coral Survey at Potential Coral Recipient Site

- 3.1 A spot-check dive survey and a REA survey were conducted at a potential recipient site at Fat Tong Chau (FTC), Junk Bay. Survey conditions are shown in **Table 3.1**. Location of the potential recipient site is shown in **Figure 5a**.

**Table 3.1 GPS Coordinates and Physical Attributes of Dive Survey Locations at FTC, Junk Bay**

Type of dive survey	GPS Coordinates of Transects		Depth (m)	Visibility (m)	Substrate Type	Presence of Hard Corals?	Presence of Octocorals ?	Degree of Exposure	Degree of Sediment Deposition
Spot-check	Start	N 22° 16.530' E114° 15.857'	4.5 – 10.0	1.5 - 2	Rubbles, boulders, bedrocks, sand with gravels	Yes	Yes	2 - 3	2
	End	N 22° 16.416' E114° 15.933'							
REA	Start	N 22° 16.473' E114° 15.890'	8.1 – 9.6	1.5 - 2	Rubbles, boulders, bedrocks, sand with gravels	Yes	Yes	2 - 3	2
	End	N 22° 16.423' E114° 15.908'							

#### Spot-check Dive Survey

- 3.2 The spot-check dive survey at Fat Tong Chau (FTC), Junk Bay was conducted on 6<sup>th</sup> March 2021. The location the spot-check dive survey is shown in **Figure 5b**.
- 3.3 The substrates of FTC were mainly composed of natural bedrocks and boulders, with sparsely distributed rubbles and sand with gravel. The hard substrates were commonly covered by sediments, with crustose coralline algae, encrusting algae and sessile animals (barnacles, rock oysters, tube worms, bryozoans, octocorals and hard corals) sparsely distributed on the hard substrates.
- 3.4 Octocorals (mainly *Echinomuricea* sp.) were mainly observed at depth from 8 to 10m. Only few hard corals of *Tubastraea* spp. were observed.
- 3.5 Following the spot-check dive survey, FTC was found suitable for being a coral recipient site, a more detailed REA survey was conducted to collect more information on the coral communities at FTC.

#### Rapid Ecological Assessment (REA) Survey

- 3.6 The REA survey at Fat Tong Chau (FTC), Junk Bay was conducted on 6<sup>th</sup> March 2021.

- 3.7 The location the REA survey is shown in **Figure 5b**. Ecological and substrate attributes, and taxonomic Inventories along the REA transects at the sites are presented in **Table 3.2**. Records of coral colonies are presented in **Table 3.3**. The occurrence and size range of each observed coral species at each survey location are summarized in **Table 3.4**. Photos of the survey locations, representative taxa and corals along the transect are shown in **Appendices Ia, Ib and Ic**.
- 3.8 The substrates of FTC mainly composed of bedrocks, boulders, rubbles and sand with gravel. These hard substrates were commonly covered by a thin layer of sediments. Crustose coralline algae, encrusting algae and sessile animals (barnacles, rock oysters, tube worms, bryozoans, gorgonians and hard corals) were sparsely distributed on the hard substrates and sandy bottom (**Table 3.2; Appendices Ia and Ib**).
- 3.9 A total of one hundred and twenty-one (121) coral colonies including two (2) hard coral species (*Tubastraea* sp. A and *Tubastraea* sp. C) and three (3) octocoral species (*Echinomuricea* sp., *Echinogorgia* sp. A and *Echinogorgia* sp. B) were observed along the REA transect. The size of the hard corals ranged from 25 x 225 cm<sup>2</sup>. The length of octocorals ranged from 10 to 50 cm.
- 3.10 All coral colonies were in good condition with no or low level sedimentation, bleaching or partial mortality (**Table 3.3; Appendix Ic**).
- 3.11 The coral colonies recorded along the REA transect were dominated by octocoral *Echinomuricea* sp. (106 colonies); only eight (8) colonies of octocorals *Echinogorgia* spp., and seven (7) colonies of hard corals *Tubastraea* spp., which are locally common, were recorded (**Table 3.4**).
- 3.12 No black coral or other taxon of conservation interest was recorded.

**Table 3.2 Dive Surveys - Ecological and Substrate Attributes, and Taxonomic Inventories Along REA Transect at FTC, Junk Bay**

<b>Substrate Attributes (0 - 6)</b>	<b>FTC</b>	<b>Ecological Attributes (0 – 6)</b>	<b>FTC</b>
Continuous Pavement	0	Hard Coral	0.5
Bedrock	3	Dead Standing Coral	0
Boulders (>50 cm)	4	Soft Coral	0
Rubble (<50cm)	3	Gorgonian	0.5
Sand with gravel	3	Black Coral	0
Mud & Silt	0	Marcoalgae	0.5
Artificial substrates (marine debris/ anchors)	0	Turf Algae/ Cynobacteria	0
		<b>Taxonomic inventories (0 – 5)</b>	<b>FTC</b>
		<b>Other sessile taxa</b>	
		Sponges	0.5
		Encrusting algae	0.5
		Coralline algae	3
		Barnacles	2
		Sea anemones	0.5
		Zoanthids	0
		Rock oysters	0.5
		Mussels	0
		Bryozoans	0.5
		Tunicates	0
		Tube worms	0.5
			<b>FTC</b>
		<b>*No. of hard coral Species</b>	2
		<b>*No. of octocoral Species</b>	3
		<b>Total no. of coral species</b>	5
			<b>FTC</b>
		<b>*No. of hard coral Colonies</b>	7
		<b>*No. of octocoral Colonies</b>	114
		<b>Total no. of coral colonies</b>	121

**Table 3.3 Size, Percentage Area of Sedimentation (Sed), Bleaching (B) and Partial Mortality (PM) of Coral Colonies along REA Transects at FTC, Junk Bay**

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
1	Plexauridae	<i>Echinomuricea</i> sp.	98.4	15	Good	0	0	0	Bedrock
2	Plexauridae	<i>Echinomuricea</i> sp.	98.4	20	Good	0	0	0	Bedrock
3	Plexauridae	<i>Echinomuricea</i> sp.	98.4	15	Good	0	0	0	Bedrock
4	Plexauridae	<i>Echinomuricea</i> sp.	98.4	25	Good	0	0	0	Bedrock
5	Plexauridae	<i>Echinomuricea</i> sp.	97.5	15	Good	0	0	0	Bedrock
6	Plexauridae	<i>Echinomuricea</i> sp.	97.1	20	Good	0	0	0	Bedrock
7	Plexauridae	<i>Echinomuricea</i> sp.	96.9	30	Good	0	0	0	Bedrock
8	Plexauridae	<i>Echinomuricea</i> sp.	96.8	30	Good	0	0	0	Bedrock
9	Plexauridae	<i>Echinomuricea</i> sp.	96.8	40	Good	0	0	5	Bedrock
10	Plexauridae	<i>Echinomuricea</i> sp.	96.8	25	Good	0	0	0	Bedrock
11	Plexauridae	<i>Echinomuricea</i> sp.	96.8	20	Good	0	0	0	Bedrock
12	Plexauridae	<i>Echinomuricea</i> sp.	96.4	45	Good	0	0	0	Boulder (>50cm)
13	Plexauridae	<i>Echinomuricea</i> sp.	96.4	45	Good	0	0	0	Boulder (>50cm)
14	Plexauridae	<i>Echinomuricea</i> sp.	96.4	30	Good	0	0	0	Boulder (>50cm)
15	Plexauridae	<i>Echinomuricea</i> sp.	93.8	15	Good	0	0	0	Boulder (>50cm)
16	Plexauridae	<i>Echinomuricea</i> sp.	93.8	15	Good	0	0	0	Boulder (>50cm)
17	Plexauridae	<i>Echinomuricea</i> sp.	93.8	20	Good	0	0	0	Boulder (>50cm)
18	Plexauridae	<i>Echinogorgia</i> sp. A	93.8	10	Good	0	0	0	Boulder (>50cm)

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
19	Plexauridae	<i>Echinomuricea</i> sp.	92.5	30	Good	0	0	0	Boulder (>50cm)
20	Plexauridae	<i>Echinomuricea</i> sp.	92.5	30	Good	0	0	0	Boulder (>50cm)
21	Plexauridae	<i>Echinomuricea</i> sp.	92.5	35	Good	0	0	0	Boulder (>50cm)
22	Plexauridae	<i>Echinomuricea</i> sp.	92.5	25	Good	0	0	0	Boulder (>50cm)
23	Plexauridae	<i>Echinogorgia</i> sp. B	92.5	25	Good	0	0	0	Boulder (>50cm)
24	Plexauridae	<i>Echinomuricea</i> sp.	92.0	30	Good	0	0	5	Boulder (>50cm)
25	Plexauridae	<i>Echinomuricea</i> sp.	91.2	35	Good	0	0	0	Boulder (>50cm)
26	Plexauridae	<i>Echinomuricea</i> sp.	90.7	25	Good	0	0	0	Bedrock
27	Plexauridae	<i>Echinomuricea</i> sp.	90.0	30	Good	0	0	0	Bedrock
28	Plexauridae	<i>Echinomuricea</i> sp.	87.7	35	Good	0	0	0	Boulder (>50cm)
29	Plexauridae	<i>Echinomuricea</i> sp.	82.0	15	Good	0	0	0	Boulder (>50cm)
30	Plexauridae	<i>Echinogorgia</i> sp. B	82.0	15	Good	0	0	0	Boulder (>50cm)
31	Dendrophylliidae	<i>Tubastraea</i> sp. C	76.0	10 x 10	Good	0	0	0	Boulder (>50cm)
32	Plexauridae	<i>Echinogorgia</i> sp. B	76.0	20	Good	0	0	0	Boulder (>50cm)
33	Dendrophylliidae	<i>Tubastraea</i> sp. A	70.9	15 x 15	Good	0	0	0	Boulder (>50cm)
34	Plexauridae	<i>Echinogorgia</i> sp. B	69.4	45	Good	0	0	0	Boulder (>50cm)
35	Plexauridae	<i>Echinogorgia</i> sp. A	68.0	15	Good	0	0	0	Boulder (>50cm)
36	Plexauridae	<i>Echinomuricea</i> sp.	67.3	25	Good	0	0	0	Boulder (>50cm)
37	Plexauridae	<i>Echinomuricea</i> sp.	66.7	20	Good	0	0	0	Boulder (>50cm)
38	Dendrophylliidae	<i>Tubastraea</i> sp. A	64.3	10 x 10	Good	0	0	0	Boulder (>50cm)



Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
39	Plexauridae	<i>Echinomuricea</i> sp.	60.0	20	Good	0	0	0	Boulder (>50cm)
40	Plexauridae	<i>Echinomuricea</i> sp.	60.0	15	Good	0	0	5	Boulder (>50cm)
41	Plexauridae	<i>Echinogorgia</i> sp. B	60.0	20	Good	0	0	0	Boulder (>50cm)
42	Plexauridae	<i>Echinomuricea</i> sp.	53.9	30	Good	0	0	0	Boulder (>50cm)
43	Plexauridae	<i>Echinomuricea</i> sp.	46.5	40	Good	0	0	0	Rubble (<50cm)
44	Plexauridae	<i>Echinomuricea</i> sp.	46.5	30	Good	0	0	0	Rubble (<50cm)
45	Dendrophylliidae	<i>Tubastraea</i> sp. C	46.1	5 x 5	Good	0	0	0	Boulder (>50cm)
46	Plexauridae	<i>Echinomuricea</i> sp.	46.1	25	Good	0	0	0	Boulder (>50cm)
47	Plexauridae	<i>Echinomuricea</i> sp.	45.9	20	Good	0	0	0	Boulder (>50cm)
48	Plexauridae	<i>Echinomuricea</i> sp.	45.9	30	Good	0	0	0	Boulder (>50cm)
49	Plexauridae	<i>Echinomuricea</i> sp.	45.8	15	Good	0	0	0	Boulder (>50cm)
50	Plexauridae	<i>Echinomuricea</i> sp.	45.8	25	Good	0	0	0	Boulder (>50cm)
51	Plexauridae	<i>Echinomuricea</i> sp.	45.8	30	Good	0	0	0	Boulder (>50cm)
52	Plexauridae	<i>Echinomuricea</i> sp.	45.8	30	Good	0	0	0	Boulder (>50cm)
53	Plexauridae	<i>Echinomuricea</i> sp.	45.5	30	Good	0	0	0	Boulder (>50cm)
54	Plexauridae	<i>Echinomuricea</i> sp.	44.7	30	Good	0	0	0	Boulder (>50cm)
55	Plexauridae	<i>Echinomuricea</i> sp.	44.7	15	Good	0	0	0	Boulder (>50cm)
56	Plexauridae	<i>Echinomuricea</i> sp.	44.7	20	Good	0	0	0	Boulder (>50cm)
57	Plexauridae	<i>Echinomuricea</i> sp.	30.3	15	Good	0	0	0	Boulder (>50cm)
58	Plexauridae	<i>Echinomuricea</i> sp.	30.3	15	Good	0	0	0	Boulder (>50cm)

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
59	Plexauridae	<i>Echinomuricea</i> sp.	30.3	25	Good	0	0	0	Boulder (>50cm)
60	Dendrophylliidae	<i>Tubastraea</i> sp. C	29.8	15 x 15	Good	0	0	0	Boulder (>50cm)
61	Plexauridae	<i>Echinomuricea</i> sp.	29.5	35	Good	0	0	0	Boulder (>50cm)
62	Plexauridae	<i>Echinomuricea</i> sp.	27.5	40	Good	0	0	5	Boulder (>50cm)
63	Dendrophylliidae	<i>Tubastraea</i> sp. C	26.9	15 x 15	Good	0	0	0	Boulder (>50cm)
64	Plexauridae	<i>Echinomuricea</i> sp.	25.0	50	Good	0	0	0	Rubble (<50cm)
65	Plexauridae	<i>Echinomuricea</i> sp.	25.0	25	Good	0	0	0	Rubble (<50cm)
66	Plexauridae	<i>Echinomuricea</i> sp.	25.0	20	Good	0	0	0	Rubble (<50cm)
67	Plexauridae	<i>Echinomuricea</i> sp.	24.8	15	Good	0	0	0	Rubble (<50cm)
68	Plexauridae	<i>Echinomuricea</i> sp.	24.8	15	Good	0	0	0	Rubble (<50cm)
69	Plexauridae	<i>Echinomuricea</i> sp.	24.1	45	Good	0	0	0	Boulder (>50cm)
70	Plexauridae	<i>Echinomuricea</i> sp.	23.7	40	Good	0	0	0	Rubble (<50cm)
71	Plexauridae	<i>Echinomuricea</i> sp.	23.7	40	Good	0	0	0	Rubble (<50cm)
72	Plexauridae	<i>Echinomuricea</i> sp.	23.3	15	Good	0	0	0	Rubble (<50cm)
73	Plexauridae	<i>Echinomuricea</i> sp.	23.1	25	Good	0	0	0	Rubble (<50cm)
74	Plexauridae	<i>Echinomuricea</i> sp.	22.7	20	Good	0	0	0	Boulder (>50cm)
75	Plexauridae	<i>Echinomuricea</i> sp.	22.7	20	Good	0	0	0	Boulder (>50cm)
76	Plexauridae	<i>Echinomuricea</i> sp.	22.7	15	Good	0	0	0	Rubble (<50cm)
77	Plexauridae	<i>Echinomuricea</i> sp.	22.3	15	Good	0	0	0	Rubble (<50cm)
78	Plexauridae	<i>Echinomuricea</i> sp.	22.3	15	Good	0	0	0	Rubble (<50cm)

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
79	Plexauridae	<i>Echinomuricea</i> sp.	22.3	15	Good	0	0	0	Rubble (<50cm)
80	Plexauridae	<i>Echinomuricea</i> sp.	21.6	35	Good	0	0	0	Rubble (<50cm)
81	Plexauridae	<i>Echinomuricea</i> sp.	21.3	40	Good	0	0	0	Rubble (<50cm)
82	Plexauridae	<i>Echinomuricea</i> sp.	21.3	35	Good	0	0	0	Rubble (<50cm)
83	Plexauridae	<i>Echinomuricea</i> sp.	21.3	40	Good	0	0	0	Rubble (<50cm)
84	Plexauridae	<i>Echinomuricea</i> sp.	20.8	45	Good	0	0	0	Boulder (>50cm)
85	Plexauridae	<i>Echinomuricea</i> sp.	20.5	20	Good	0	0	0	Boulder (>50cm)
86	Plexauridae	<i>Echinomuricea</i> sp.	20.2	20	Good	0	0	0	Rubble (<50cm)
87	Dendrophylliidae	<i>Tubastraea</i> sp. C	20.2	10 x 10	Good	0	0	0	Rubble (<50cm)
88	Plexauridae	<i>Echinomuricea</i> sp.	19.6	15	Good	0	0	0	Boulder (>50cm)
89	Plexauridae	<i>Echinomuricea</i> sp.	19.2	15	Good	0	0	0	Boulder (>50cm)
90	Plexauridae	<i>Echinomuricea</i> sp.	18.6	15	Good	0	0	0	Boulder (>50cm)
91	Plexauridae	<i>Echinomuricea</i> sp.	18.3	15	Good	0	0	0	Boulder (>50cm)
92	Plexauridae	<i>Echinomuricea</i> sp.	16.8	10	Good	0	0	0	Rubble (<50cm)
93	Plexauridae	<i>Echinomuricea</i> sp.	16.8	15	Good	0	0	0	Rubble (<50cm)
94	Plexauridae	<i>Echinogorgia</i> sp. B	15.4	15	Good	0	0	0	Boulder (>50cm)
95	Plexauridae	<i>Echinomuricea</i> sp.	14.2	25	Good	0	0	0	Boulder (>50cm)
96	Plexauridae	<i>Echinomuricea</i> sp.	14.2	30	Good	0	0	0	Boulder (>50cm)
97	Plexauridae	<i>Echinomuricea</i> sp.	13.3	20	Good	0	0	0	Boulder (>50cm)
98	Plexauridae	<i>Echinomuricea</i> sp.	13.3	25	Good	0	0	0	Boulder (>50cm)

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
99	Plexauridae	<i>Echinomuricea</i> sp.	12.7	15	Good	0	0	0	Rubble (<50cm)
100	Plexauridae	<i>Echinomuricea</i> sp.	12.7	15	Good	0	0	0	Rubble (<50cm)
101	Plexauridae	<i>Echinomuricea</i> sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
102	Plexauridae	<i>Echinomuricea</i> sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
103	Plexauridae	<i>Echinomuricea</i> sp.	11.7	40	Good	0	0	0	Boulder (>50cm)
104	Plexauridae	<i>Echinomuricea</i> sp.	11.7	40	Good	0	0	0	Boulder (>50cm)
105	Plexauridae	<i>Echinomuricea</i> sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
106	Plexauridae	<i>Echinomuricea</i> sp.	11.0	25	Good	0	0	0	Boulder (>50cm)
107	Plexauridae	<i>Echinomuricea</i> sp.	11.0	35	Good	0	0	0	Boulder (>50cm)
108	Plexauridae	<i>Echinomuricea</i> sp.	10.6	15	Good	0	0	0	Boulder (>50cm)
109	Plexauridae	<i>Echinomuricea</i> sp.	10.6	20	Good	0	0	0	Boulder (>50cm)
110	Plexauridae	<i>Echinomuricea</i> sp.	7.4	35	Good	0	0	0	Boulder (>50cm)
111	Plexauridae	<i>Echinomuricea</i> sp.	7.4	40	Good	0	0	0	Boulder (>50cm)
112	Plexauridae	<i>Echinomuricea</i> sp.	7.0	25	Good	0	0	0	Boulder (>50cm)
113	Plexauridae	<i>Echinomuricea</i> sp.	7.0	20	Good	0	0	0	Rubble (<50cm)
114	Plexauridae	<i>Echinomuricea</i> sp.	7.0	20	Good	0	0	0	Rubble (<50cm)
115	Plexauridae	<i>Echinomuricea</i> sp.	2.6	35	Good	0	0	0	Boulder (>50cm)
116	Plexauridae	<i>Echinomuricea</i> sp.	2.6	30	Good	0	0	0	Boulder (>50cm)
117	Plexauridae	<i>Echinomuricea</i> sp.	2.6	20	Good	0	0	0	Rubble (<50cm)
118	Plexauridae	<i>Echinomuricea</i> sp.	1.0	25	Good	0	0	0	Boulder (>50cm)

Coral no.	Family	Species	Position on transect (m)	Size:	Health Condition	%Sed	%B	%PM	Associated Substrate Type
				Hard Corals: L x W cm Octocorals: L cm					
119	Plexauridae	<i>Echinomuricea</i> sp.	0.5	20	Good	0	0	5	Boulder (>50cm)
120	Plexauridae	<i>Echinomuricea</i> sp.	0.0	20	Good	0	0	0	Boulder (>50cm)
121	Plexauridae	<i>Echinomuricea</i> sp.	0.0	25	Good	0	0	0	Boulder (>50cm)

**Table 3.4 Occurrence and Size Range of Coral Species at FTC, Junk Bay**

<b>Location</b>	<b>Coral Taxon</b>	<b>Family</b>	<b>Coral species</b>	<b>No. of Colonies</b>	<b>Qualitative Estimate of Coral Coverage (%) in (100x4 m) 400 m<sup>2</sup> Survey Area</b>	<b>Size Range in Area (cm<sup>2</sup>) for Hard Corals; Area (cm<sup>2</sup>) and height (cm) for Octocoral</b>
FTC	Hard coral	Dendrophylliidae	<i>Tubastraea</i> sp. A	2	<1%	100 – 225 cm <sup>2</sup>
FTC	Hard coral	Dendrophylliidae	<i>Tubastraea</i> sp. C	5	<1%	25 – 225 cm <sup>2</sup>
FTC	Octocoral	Plexauridae	<i>Echinomuricea</i> sp.	106	<5%	10 – 50 cm
FTC	Octocoral	Plexauridae	<i>Echinogorgia</i> sp. A	2	<1%	10 – 15 cm
FTC	Octocoral	Plexauridae	<i>Echinogorgia</i> sp. B	6	<1%	15 – 45 cm

**Recommendation of Coral Recipient Site**

3.13 Fat Tong Chau (FTC) located at Junk Bay is recommended as a suitable recipient site for octocorals from the donar site Lei Yue Mun (LYM) because:

- FTC is located at Junk Bay, close to the donar site (distance <2 km) which is favourable for translocation work, but far enough (>500 m) to avoid direct impact from any construction work at the donar site LYM;
- FTC has similar substrate type (i.e. hard substrates with boulders and rubbles), water depth (>8 m) and wave exposure (i.e. semi-exposed) as the area inhabited by octocorals at the donar site LYM;
- The sea bottom of FTC has sufficient space available for the newly translocated coral; and
- The occurrence of coral species at both coral recipient and donar sites are summarised in **Table 3.5**. Same species of the dominant octocoral *Echinomuricea* sp., which are in good and healthy condition, can be found at at both recipient and donar sites, indicating FTC is a habitat suitable for the octocorals to be translocated from the donar site LYM;

**Table 3.5 Occurrence of Coral Species at Coral Recipient and Donar Sites**

				<b>Recipient Site</b>	<b>Donor Site</b>
	<b>Taxon</b>	<b>Family</b>	<b>Species</b>	<b>FTC</b>	<b>LYM</b>
<b>Hard Corals</b>					
1	Hard Coral	Dendrophylliidae	<i>Tubastraea</i> sp. A	√	√
2	Hard Coral	Dendrophylliidae	<i>Tubastraea</i> sp. B		√
3	Hard Coral	Dendrophylliidae	<i>Tubastraea</i> sp. C	√	
4	Hard Coral	Dendrophylliidae	<i>Duncanopsammia peltata</i>		√
5	Hard Coral	Merulinidae	<i>Favites pentagona</i>		√
6	Hard coral	Plesiastreidae	<i>Plesiastrea versipora</i>		√
7	Hard coral	Poritidae	<i>Bernardpora stutchburyi</i>		√
<b>Octocorals</b>					
8	Octocoral	Plexauridae	<i>Echinomuricea</i> sp.	√	√
9	Octocoral	Plexauridae	<i>Echinogorgia</i> sp. A	√	
10	Octocoral	Plexauridae	<i>Echinogorgia</i> sp. B	√	
11	Octocoral	Plexauridae	<i>Echinogorgia</i> sp.		√
12	Octocoral	Plexauridae	<i>Menella</i> sp.		√
13	Octocoral	Nephtheidae	<i>Dendronephthya</i> sp.		√
<b>Total No. of Hard Coral Species</b>				2	6
<b>Total No. of Octocoral Species</b>				3	4

**4 SUMMARY OF CORAL BASELINE SURVEY FINDINGS**

- 4.1 A total of 10 coral species and 421 coral colonies were found in the coral mapping area in LYM. Among all the 421 coral colonies, it is estimated that a total of 44 coral colonies including 41 colonies of octocoral *Echinomuricea* sp., 2 colonies of octocoral *Echinogorgia* sp. and 1 colony of octocoral *Menella* sp. could be translocated to the coral recipient site.
- 4.2 All these corals are considered as common species in Hong Kong (Chan, et al. 2005, Ang et al. 2010). These species have been commonly recorded in previous surveys in Hong Kong and are not considered to be rare in Hong Kong waters (**Table 4.1**).
- 4.3 Fat Tong Chau (FTC) located at Junk Bay is recommended as a suitable recipient site for octocorals from the donar site Lei Yue Mun (LYM).

**Table 4.1 Current Status of Coral Species Feasible for Translocation in Hong Kong Waters**

No.	Family	Species	Status in Hong Kong	Global Status According to IUCN (2021) (date assessed)	Remarks
<b>Octocorals</b>					
1	Plexauridae	<i>Echinomuricea</i> sp.	Common (Ang et al. 2010)	Not available	
2	Plexauridae	<i>Echinogorgia</i> spp.	Common (Ang et al. 2010)	Not available	
3	Plexauridae	<i>Menella</i> sp.	Common (Ang et al. 2010)	Not available	

Note: All species names were reported according to the updates by Hoeksema and Cairns (2021).

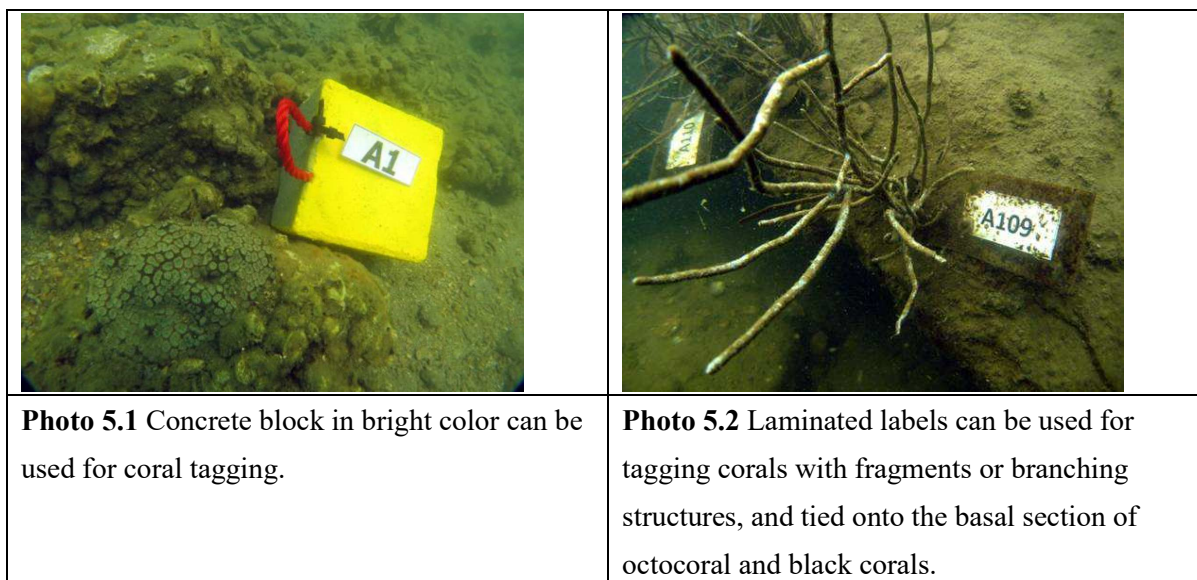


**5 CORAL TRANSLOCATION METHODOLOGY**

**Coral Translocation Procedure**

Tagging of Reference Coral Colonies at the Recipient Site

- 5.1 To distinguish the effect of the translocation exercise on the translocated coral colonies against the natural variation in health status at the recipient location, comparison of health status between the translocated colonies and original colonies in the recipient location shall be performed. Simultaneous monitoring of the 2 groups of colonies will help evaluating the potential sources of impact to the colonies if deteriorating in health condition is recorded.
- 5.2 At the recipient site, a minimum of 10 coral colonies will be identified to species level, tagged and used as reference colonies for monitoring after the coral translocation. Target species of reference coral colonies will include species which can be found at the corresponding donor location. Colonies will be tagged giving priority to the large, undamaged colonies since damage to these colonies would be more evident compared to smaller colonies or corals with existing damage.
- 5.3 For hard corals, the selected colonies will be tagged with a labelled stone or concrete block placed next to each tagged colony (**Photo 5.1**) or using plastic tags (~3.5 cm diameter) glued onto boulders adjacent to the coral colonies.
- 5.4 For octocorals, the selected colonies will be tagged with laminated labels or plastic tags using cable ties (**Photo 5.2**).



- 5.5 For each tagged coral, detailed information will be recorded including its location, species name, size, and health status information including sedimentation level (percentage cover and thickness of sediments), percentage cover of partial mortality and bleaching. The condition of each tagged coral colony will be recorded by taking a photograph from an angle and distance that best

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represents the entire colony. All field data will be collected by a qualified marine ecologist using SCUBA dive.

#### Translocation and Tagging of Coral Colonies From the Donor Site

- 5.6 Coral translocation from donor site to recipient site will be performed with multiple measures to minimize stress and damage to the colonies, under the guidance of a marine ecologist with relevant experience.
- 5.7 All tagged movable boulders with the translocated coral colonies at donor location will be moved entirely as a whole object into a tray or bucket, and lifted from sea bottom to water surface using lifting bag by SCUBA divers. All the coral colonies attached on the boulders will be kept submerged at all time with a brief exposure unavoidable when transferred onto the vessel.
- 5.8 The translocated colonies transferred onto the vessel will be submerged in seawater tanks (of considerable size, e.g. 100 cm x 80 cm x 40 cm in dimension and 32 liters in volume each) with continuous aeration onboard. Each seawater tank held no more than 5 boulders to avoid overcrowding. Shading will be provided by placing the tanks under roof of the vessel to avoid exposure to direct sunlight.
- 5.9 Ambient water quality parameters of sea surface temperature and dissolved oxygen will be measured once (with at least 3 replicate sampling) at donor location the day of coral translocation. The seawater quality in the tank will be checked every 15 minutes to ensure no fluctuation above 10% ambient occurs to the seawater in which the corals were submerged.
- 5.10 Corals will be transported to the recipient site immediately on the same day after the removal. Speed of the vessel will be kept <5 knots during the moving exercise. During the course of transportation, all the coral colonies will be kept submerged at all time; the orientation of boulder and corals in the seawater tanks will be checked every 15 minutes to ensure coral colonies would not be damaged on the way to the recipient location.
- 5.11 Once arrived at the recipient site, translocated colonies will be placed one by one onto the seabed. Colonies will be positioned to similar depths with orientations as their previous location at the donor sites as far as possible. The translocated coral colonies will be tagged as described above (**Photo 5.1 and Photo 5.2**).
- 5.12 The status of each translocated coral colony including size, location, health conditions (sedimentation, bleaching and partial mortality) will be recorded after the completion of translocation work. Photographs of each translocated coral will be taken as baseline for future monitoring.

## 6 POST-TRANSLOCATION MONITORING

- 6.1 In order to evaluate the effectiveness of the translocation, regular post-translocation monitoring will be conducted to assess the status of the translocated colonies, using the original coral colonies in the recipient location as reference.
- 6.2 The post-translocation monitoring shall be conducted by experienced marine ecologist(s) with at least 5 years relevant experience to monitor the re-establishment of the translocated coral colonies.
- 6.3 Monitoring will be conducted quarterly for one year at the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup> and 12<sup>th</sup> month after the coral translocation work. Any change in health status in both translocated and reference coral colonies should be monitored and compared, to evaluate the effectiveness of the coral translocation work. An additional monitoring will be conducted after the construction work. A sample datasheet for post-translocation monitoring is shown in **Appendix II**.
- 6.4 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 6.1** below.

**Table 6.1 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.

### Event and Action Plan

- 6.5 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.
- 6.6 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 6.1**.
- 6.7 If the defined Action Level or Limit Level for coral monitoring as listed in **Table 6.1** is exceeded,

the actions as set out in **Table 6.2** will be implemented.

**Table 6.2 Event and Action Plan for Coral Post-translocation Monitoring**

Event	Action		
	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.

### Reporting for Post-translocation Monitoring

6.8 Coral survey reports for post-translocation monitoring shall be submitted to the Project Manager, EPD and AFCD within 10 working days of completion of the coral surveys. The reports shall include, but not limited to, the following:

- General environmental conditions;
- Mapping of the new location of all translocated corals; and
- Condition of translocated coral colonies and assessment on the health condition of the corals;

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**7 REFERENCES**

1. Ang P Jr, Lee MW, Fung HL (2010) Provision of Services on Reference Collection and Study on Octocorals and Black Corals in Hong Kong Waters (AFCD/SQ/15/06). Final Report. Submitted to Agriculture, Fisheries and Conservation Department, Hong Kong SAR Government.
2. Chan ALK, Choi CLS, McCorry D, Chan KK, Lee MW, Ang P Jr (2005) Field Guide to Hard Corals of Hong Kong. Agriculture, Fisheries and Conservation Department, HKSAR.
3. Hoeksema BW, Cairns S (2021) World List of Scleractinia. *Duncanopsammia peltata* (Esper, 1794). Accessed through: World Register of Marine Species at: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=1469809> on 2021-03-20
4. IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. <<https://www.iucnredlist.org>>

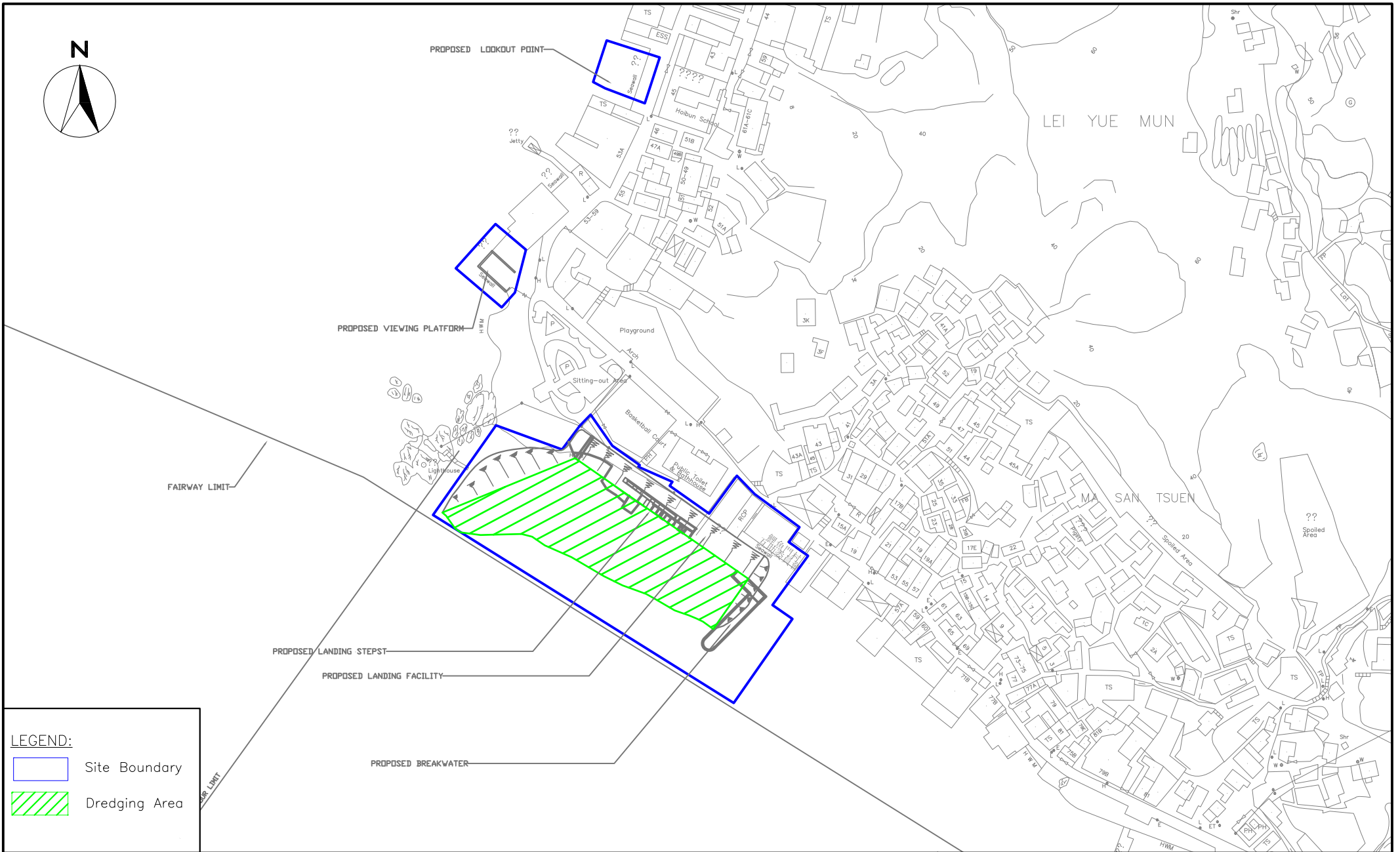
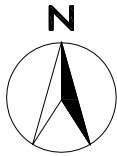
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## FIGURES

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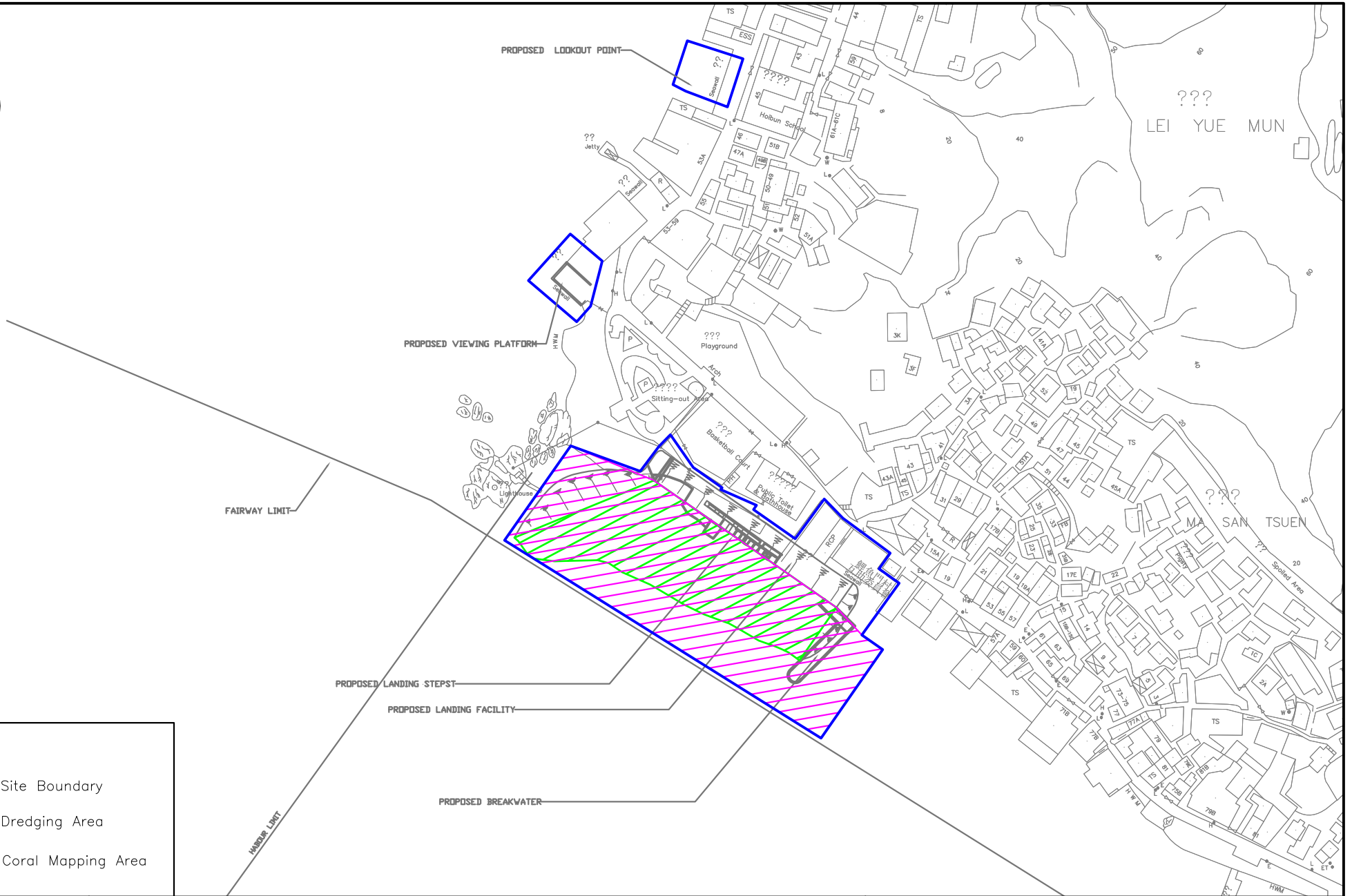
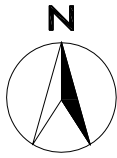
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**LEGEND:**

- Site Boundary
- Dredging Area

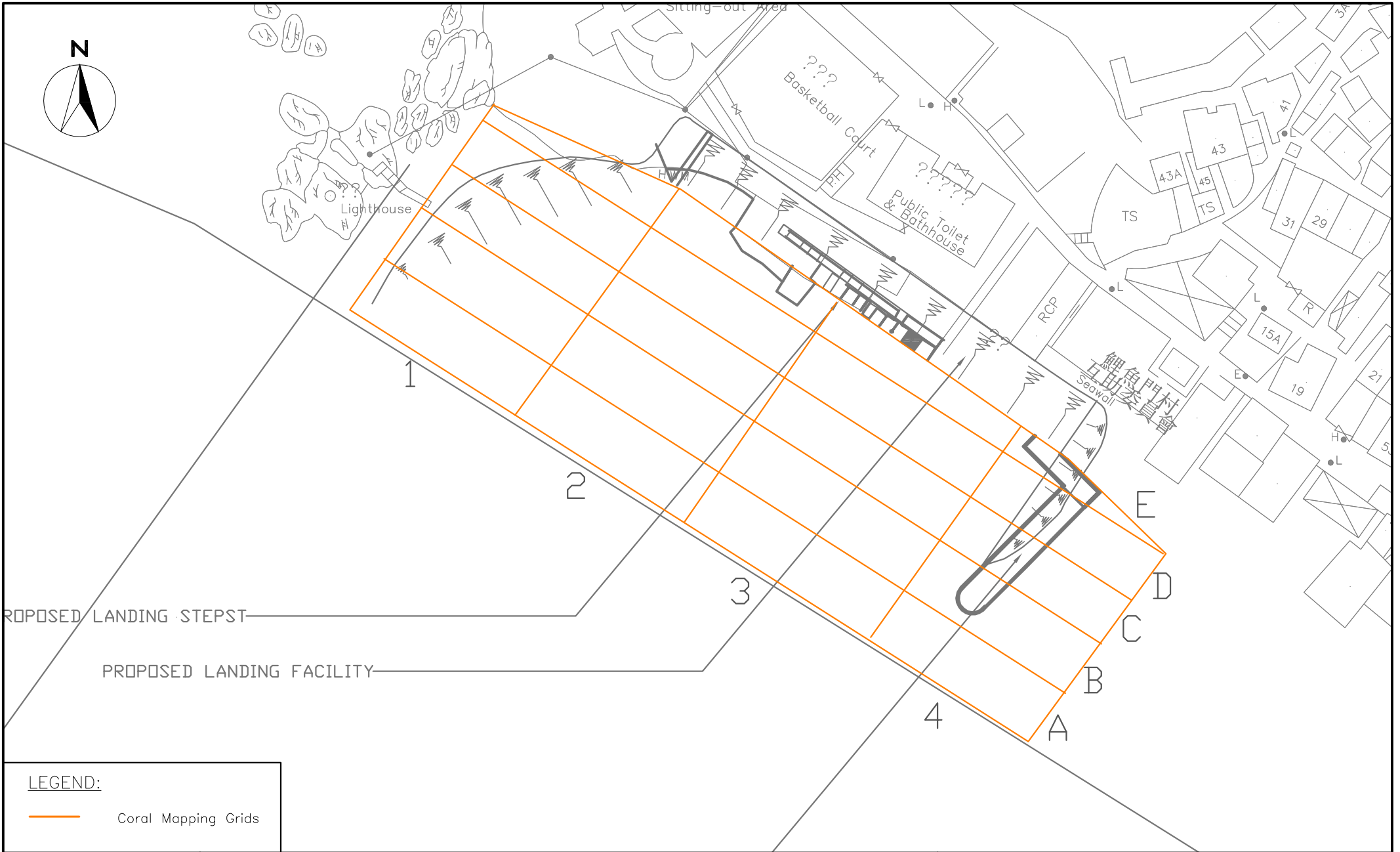
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CHECK	JT	DRAWN	NL
Project No.	WEC20026	FIGURE NO.	1
		REV	—



- LEGEND:
- Site Boundary
  - Dredging Area
  - Coral Mapping Area

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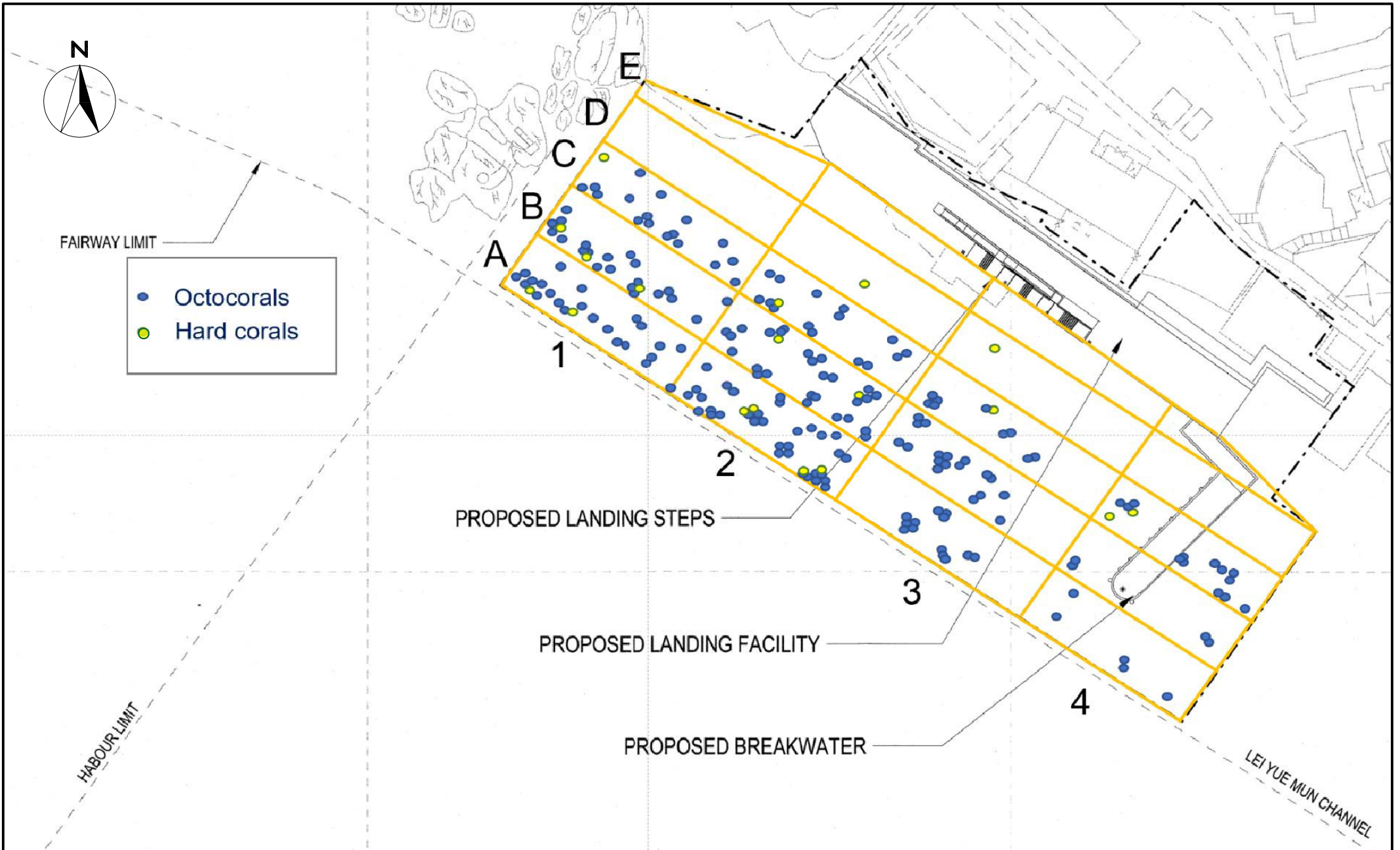


LEGEND:  
 Coral Mapping Grids



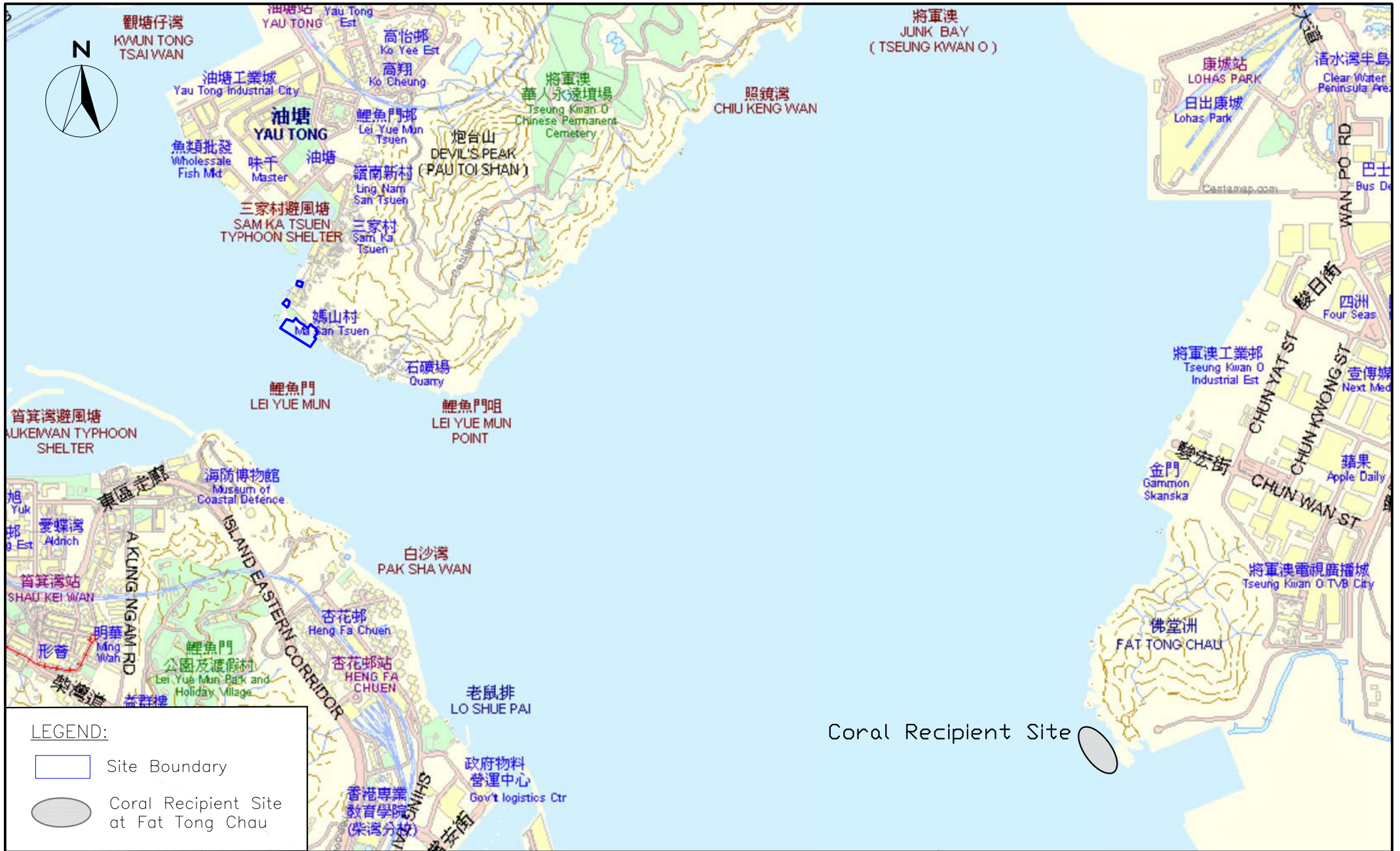
Contract No. CV/2020/09  
 Construction of Lei Yue Mun Public Landing Facility  
 Coral Mapping Survey Grids

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		REV	—

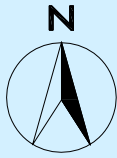


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Project No.	WEC20026	FIGURE NO.	4
		REV	—






SCALE	1: 45000 @A4	DATE	Mar 2021	
CHECK	IT	DRAWN	JT	
Project No.	WEC20026	FIGURE NO.	5a	REV -



LEGEND:

-  Spot-check Dive Route
-  Starting Point (0m) of REA Transect
-  REA Transect

SCALE	1:10000 @A4	DATE	Mar 2021		
CHECK	IT	DRAWN	JT		
Project No.	WEC20026	FIGURE NO.	5b	REV	—

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**APPENDIX Ia**  
**PHOTOS OF SPOT DIVE AND REA**  
**SURVEY LOCATIONS AT FTC,**  
**JUNK BAY**

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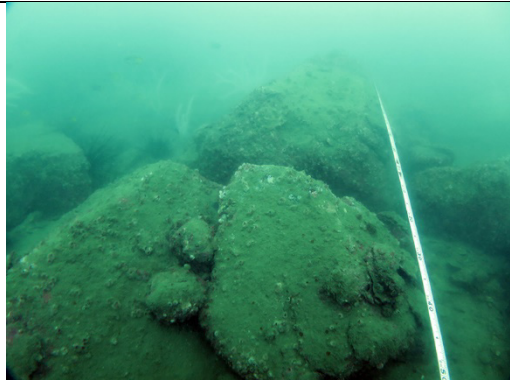
Appendix Ia Photos of the Dive Survey Locations at FTC, Junk Bay.



FTC



FTC - 0m



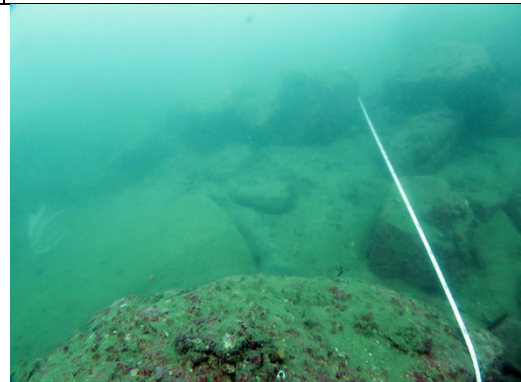
FTC - 10m



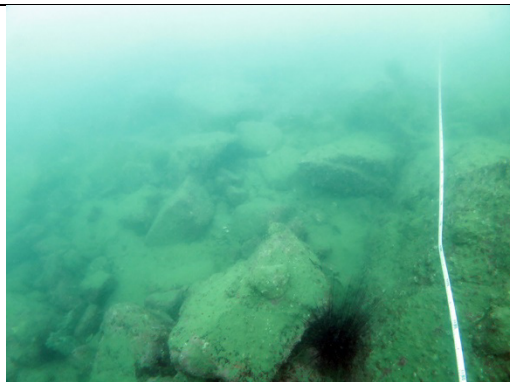
FTC - 20m



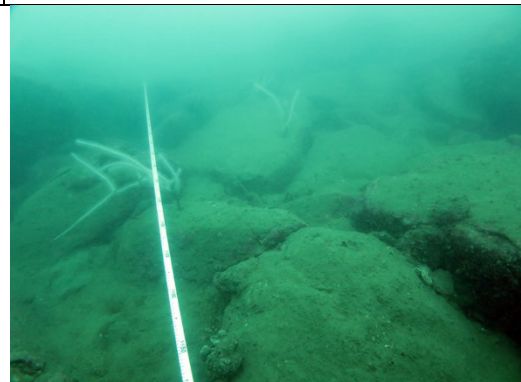
FTC - 30m



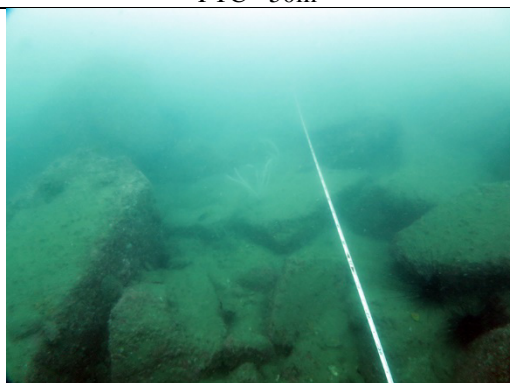
FTC - 40m



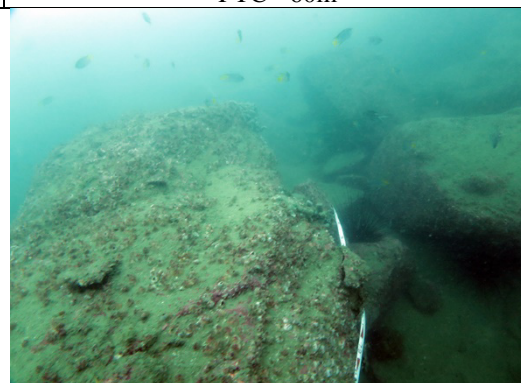
FTC - 50m



FTC - 60m

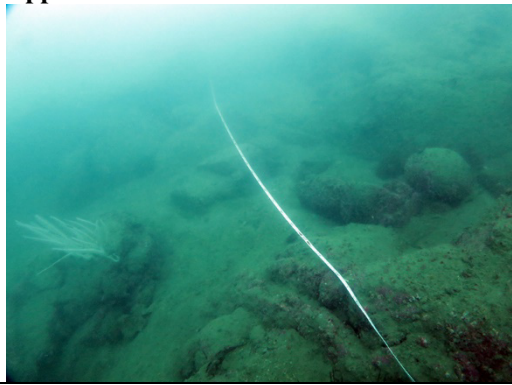


FTC - 70m

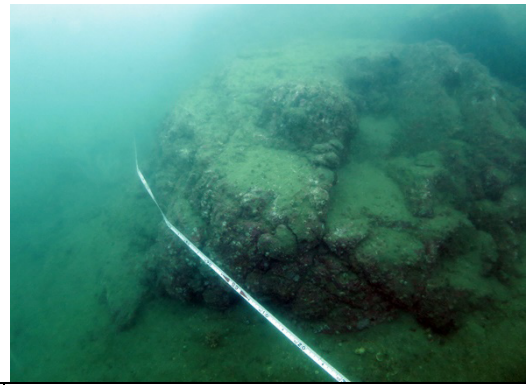


FTC - 80m

**Appendix Ia Continued.**



FTC - 90m



FTC - 100m

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**APPENDIX 1b  
PHOTOS OF REPRESENTATIVE TAXA  
AT FTC, JUNK BAY**

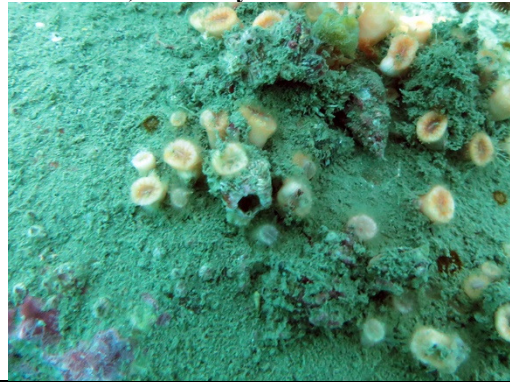
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Appendix Ib Photos of the Representative Taxa at FTC, Junk Bay.



Gorgonians (*Echinomuricea* sp.)



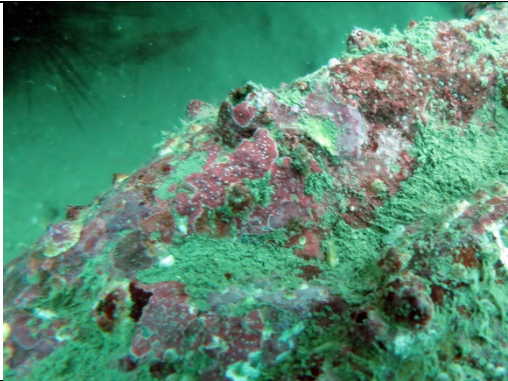
Hard corals (*Tubastraea* sp. C)



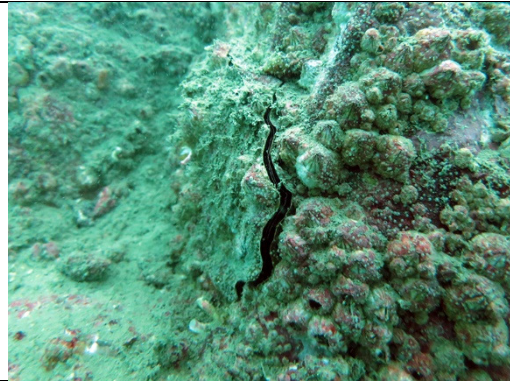
Hard corals (*Tubastraea* sp. A)



Gorgonians



Crustose coralline algae



Rock oysters



Hard substrates covered by sediments



Sponges



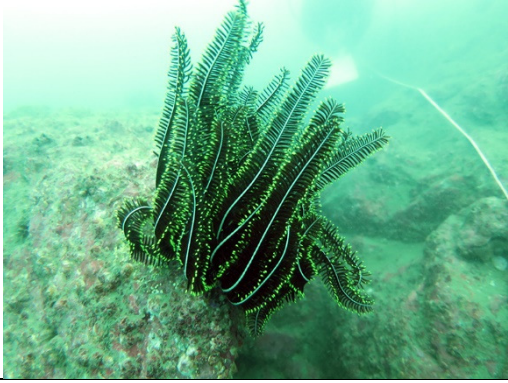
Sea anemones



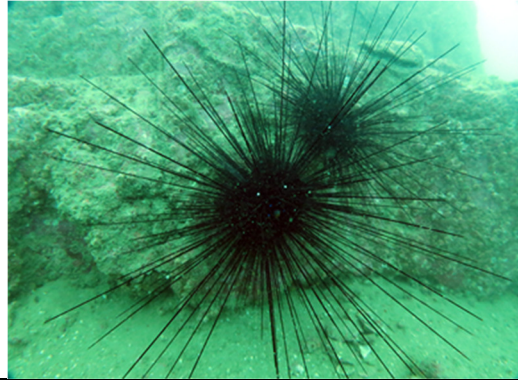
Barnacles



Appendix Ib Continued.



Feather stars



Sea urchin (*Diadema setosum*)



Nudibranch



Bryozoans



Tube worms



Tube worms



Hard corals (*Tubastraea* sp.)



Octocorals (*Echinogorgia* sp.)



Sea urchin (*Heliocidaris crassispina*)



Turban shell

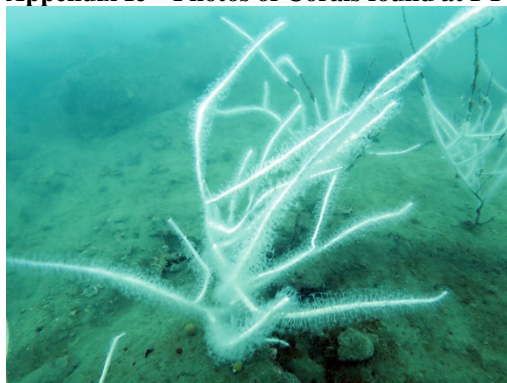
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**APPENDIX 1c**  
**PHOTOS OF CORAL COLONIES FOUND**  
**AT FTC, JUNK BAY**

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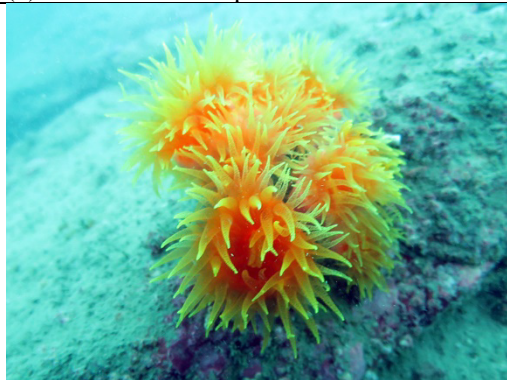
Appendix Ic Photos of Corals found at FTC, Junk Bay.



(1) *Echinomuricea* sp.



(2) *Echinomuricea* sp.



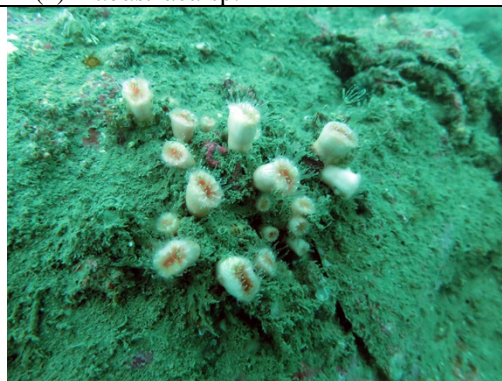
(3) *Tubastraea* sp. A



(4) *Tubastraea* sp. A



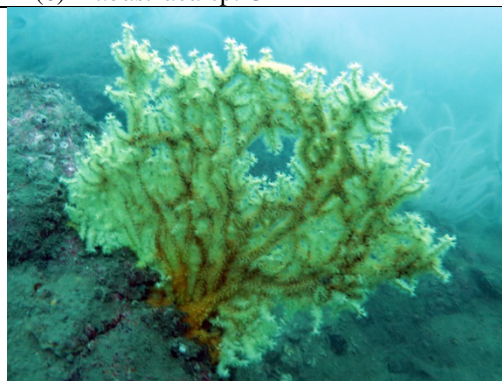
(5) *Tubastraea* sp. C



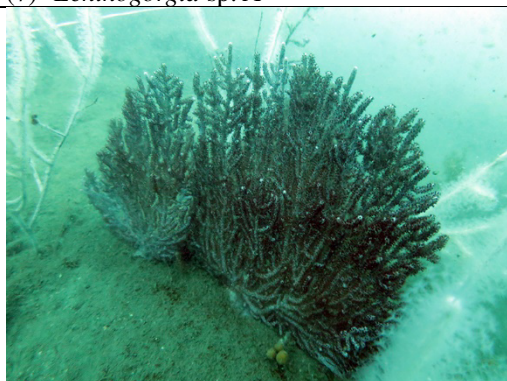
(6) *Tubastraea* sp. C



(7) *Echinogorgia* sp. A



(8) *Echinogorgia* sp. A



(9) *Echinogorgia* sp. B



(10) *Echinogorgia* sp. B

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**APPENDIX II  
SAMPLE DATASHEET FOR POST-  
TRANSLOCATION MONITORING**

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