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: HKCEDD15/50/107726

Date: 21 December 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 Coral Translocation Plan (Version 5.0)

We refer to the email on 24 November 2021 from Concentric – Hong Kong River Joint Venture attaching the Coral Translocation Plan (Version 5.0).

We have no further comments and hereby verify the Coral Translocation Plan (Version 5.0) in accordance with Clause 2.16 and 2.17 of the Environmental Permit no. EP-564/2018.

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

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LCCR/PKWK/lsmt

cc CEDD – Mr Daniel Leung (email: dkyleung@cedd.gov.hk)
Acuity – Mr Kevin Li (email: kli@acuityhk.com)
Acuity – Mr Kelvin Lau (email: klau@acuityhk.com)
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Our Ref.: PL-202112022
Your Ref.:
Date: 22nd December 2021

By Email

Civil Engineering and Development Department
4/F, Civil Engineering and Development Building,
101 Princess Margaret Rd, Ho Man Tin,
Kowloon

Dear Ms. Lam,

Contract No. PI2/2020
Environmental Monitoring Works for Lei Yue Mun Waterfront Enhancement Project
Certification of Coral Translocation Plan (Version 5.0)

I refer to the Coral Translocation Plan (Version 5.0) prepared by Concentric – Hong Kong River Joint Venture and by our team's Coral Specialist. Please note that we have no adverse comment on this document. We herewith certify the captioned submission in accordance with Condition 2.16 of Environmental Permit EP-564/2018.

Should you have any queries, please do not hesitate to contact the undersigned at 2698 6833.

For and on behalf of
Acuity Sustainability Consulting Limited

Kevin Li
Environmental Team Leader

NT/FC

c.c. CEDD -Mr. Daniel Leung (by email: dkyleung@cedd.gov.hk) w/e
AFCD -Dr. YM Mak (by email: ym_mak@afcd.gov.hk) w/e
ANEWR -Mr. James Choi (by email: jpschoi@anewr.com) w/e

Concentric — Hong Kong River Joint Venture

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

Coral Translocation Plan
(Version 5.0)

Endorsed By 

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

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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 Conditions 2.16 of the Project's Environmental Permit.

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
Section 5	Coral Translocation Methodology
Section 6	Post-Translocation Monitoring
Section 7	References

Revision History

1.9 The following Sections are updated from the previously approved version:

Section 6 – The method of selecting 10 translocated coral colonies (21% of all translocated corals) to be monitored during the post-translocation monitoring was supplemented.

Section 1.9 – Revision history was supplemented.

Overall – The footer of the Plan was updated to describe the current revision.

Figures – The Figures were updated to include the correct titles and legends.

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 5th and 6th 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	*Echinogorgia* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
132	1C	20	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
147	1C	35	*Echinomuricea* sp.	10	Good	0	0	0	Rubble (<50cm)	**Yes**
148	1C	36	*Echinogorgia* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
160	2A	7	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
164	2A	11	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
169	2A	16	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
170	2A	17	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
175	2A	22	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
176	2A	23	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
183	2A	30	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
189	2A	36	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
192	2A	39	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
247	2B	19	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
253	2B	25	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
256	2B	28	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
258	2B	30	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
259	2B	31	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
265	2B	37	*Echinomuricea* 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	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
272	2B	44	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
275	2B	47	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
276	2B	48	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
277	2B	49	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
293	2C	13	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
295	2C	15	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
304	2C	24	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
319	3A	10	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
320	3A	11	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
321	3A	12	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
323	3A	14	*Echinomuricea* sp.	40	Good	0	0	0	Rubble (<50cm)	**Yes**
344	3B	10	*Echinomuricea* sp.	30	Good	0	0	0	Rubble (<50cm)	**Yes**
350	3B	16	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<50cm)	**Yes**
352	3B	18	*Echinomuricea* sp.	25	Good	0	0	0	Rubble (<50cm)	**Yes**
353	3B	19	*Echinomuricea* sp.	35	Good	0	0	0	Rubble (<50cm)	**Yes**
354	3B	20	*Echinomuricea* sp.	30	Good	0	0	0	Rubble (<50cm)	**Yes**
360	3B	26	*Echinomuricea* sp.	10	Good	0	0	0	Rubble (<50cm)	**Yes**
363	3B	29	*Menella* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
368	3C	2	*Echinomuricea* sp.	30	Good	0	0	0	Rubble (<30cm)	**Yes**
371	3C	5	*Echinomuricea* 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	*Echinomuricea* sp.	15	Good	0	0	0	Rubble (<30cm)	**Yes**
407	4C	10	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
415	4C	18	*Echinomuricea* sp.	20	Good	0	0	0	Rubble (<50cm)	**Yes**
418	4C	21	*Echinomuricea* 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

		Grid no.	**1A**	**1B**	**1C**	**1D**	**1E**	**2A**	**2B**	**2C**	**2D**	**2E**
Taxon	**Family**	**Species**	**No. of Moveable Colonies**									
Octocoral	Plexauridae	*Echinomuricea* sp.	0	0	**2**	0	0	**9**	**11**	**3**	0	0
Octocoral	Plexauridae	*Echinogorgia* sp. C	0	0	**2**	0	0	0	0	0	0	0
			1A	**1B**	**1C**	**1D**	**1E**	**2A**	**2B**	**2C**	**2D**	**2E**
	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)

		Grid no.	**3A**	**3B**	**3C**	**3D**	**3E**	**4A**	**4B**	**4C**	**4D**	**4E**
Taxon	**Family**	**Species**	**No. of Moveable Colonies**									
Octocoral	Plexauridae	*Echinomuricea* sp.	**4**	**6**	**3**	0	0	0	0	**3**	0	0
Octocoral	Plexauridae	*Menella* sp.	0	**1**	0	0	0	0	0	0	0	0
			3A	**3B**	**3C**	**3D**	**3E**	**4A**	**4B**	**4C**	**4D**	**4E**
	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 6th 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 6th 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^2. 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

Substrate Attributes (0 - 6)	**FTC**
Continuous Pavement	0
Bedrock	3
Boulders (>50 cm)	4
Rubble (<50cm)	3
Sand with gravel	3
Mud & Silt	0
Artificial substrates (marine debris/ anchors)	0

Ecological Attributes (0 – 6)	**FTC**
Hard Coral	0.5
Dead Standing Coral	0
Soft Coral	0
Gorgonian	0.5
Black Coral	0
Marcoalgae	0.5
Turf Algae/ Cynobacteria	0

Taxonomic inventories (0 – 5)	**FTC**
Other sessile taxa	
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

	FTC
***No. of hard coral Species**	2
***No. of octocoral Species**	3
Total no. of coral species	5

	FTC
***No. of hard coral Colonies**	7
***No. of octocoral Colonies**	114
Total no. of coral colonies	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: Hard Corals: L x W cm Octocorals: L cm	Health Condition	%Sed	%B	%PM	Associated Substrate Type
1	Plexauridae	*Echinomuricea* sp.	98.4	15	Good	0	0	0	Bedrock
2	Plexauridae	*Echinomuricea* sp.	98.4	20	Good	0	0	0	Bedrock
3	Plexauridae	*Echinomuricea* sp.	98.4	15	Good	0	0	0	Bedrock
4	Plexauridae	*Echinomuricea* sp.	98.4	25	Good	0	0	0	Bedrock
5	Plexauridae	*Echinomuricea* sp.	97.5	15	Good	0	0	0	Bedrock
6	Plexauridae	*Echinomuricea* sp.	97.1	20	Good	0	0	0	Bedrock
7	Plexauridae	*Echinomuricea* sp.	96.9	30	Good	0	0	0	Bedrock
8	Plexauridae	*Echinomuricea* sp.	96.8	30	Good	0	0	0	Bedrock
9	Plexauridae	*Echinomuricea* sp.	96.8	40	Good	0	0	5	Bedrock
10	Plexauridae	*Echinomuricea* sp.	96.8	25	Good	0	0	0	Bedrock
11	Plexauridae	*Echinomuricea* sp.	96.8	20	Good	0	0	0	Bedrock
12	Plexauridae	*Echinomuricea* sp.	96.4	45	Good	0	0	0	Boulder (>50cm)
13	Plexauridae	*Echinomuricea* sp.	96.4	45	Good	0	0	0	Boulder (>50cm)
14	Plexauridae	*Echinomuricea* sp.	96.4	30	Good	0	0	0	Boulder (>50cm)
15	Plexauridae	*Echinomuricea* sp.	93.8	15	Good	0	0	0	Boulder (>50cm)
16	Plexauridae	*Echinomuricea* sp.	93.8	15	Good	0	0	0	Boulder (>50cm)
17	Plexauridae	*Echinomuricea* sp.	93.8	20	Good	0	0	0	Boulder (>50cm)
18	Plexauridae	*Echinogorgia* sp. A	93.8	10	Good	0	0	0	Boulder (>50cm)
19	Plexauridae	*Echinomuricea* sp.	92.5	30	Good	0	0	0	Boulder (>50cm)

Coral no.	Family	Species	Position on transect (m)	Size: Hard Corals: L x W cm Octocorals: L cm	Health Condition	%Sed	%B	%PM	Associated Substrate Type
20	Plexauridae	*Echinomuricea* sp.	92.5	30	Good	0	0	0	Boulder (>50cm)
21	Plexauridae	*Echinomuricea* sp.	92.5	35	Good	0	0	0	Boulder (>50cm)
22	Plexauridae	*Echinomuricea* sp.	92.5	25	Good	0	0	0	Boulder (>50cm)
23	Plexauridae	*Echinogorgia* sp. B	92.5	25	Good	0	0	0	Boulder (>50cm)
24	Plexauridae	*Echinomuricea* sp.	92.0	30	Good	0	0	5	Boulder (>50cm)
25	Plexauridae	*Echinomuricea* sp.	91.2	35	Good	0	0	0	Boulder (>50cm)
26	Plexauridae	*Echinomuricea* sp.	90.7	25	Good	0	0	0	Bedrock
27	Plexauridae	*Echinomuricea* sp.	90.0	30	Good	0	0	0	Bedrock
28	Plexauridae	*Echinomuricea* sp.	87.7	35	Good	0	0	0	Boulder (>50cm)
29	Plexauridae	*Echinomuricea* sp.	82.0	15	Good	0	0	0	Boulder (>50cm)
30	Plexauridae	*Echinogorgia* sp. B	82.0	15	Good	0	0	0	Boulder (>50cm)
31	Dendrophylliidae	*Tubastraea* sp. C	76.0	10 x 10	Good	0	0	0	Boulder (>50cm)
32	Plexauridae	*Echinogorgia* sp. B	76.0	20	Good	0	0	0	Boulder (>50cm)
33	Dendrophylliidae	*Tubastraea* sp. A	70.9	15 x 15	Good	0	0	0	Boulder (>50cm)
34	Plexauridae	*Echinogorgia* sp. B	69.4	45	Good	0	0	0	Boulder (>50cm)
35	Plexauridae	*Echinogorgia* sp. A	68.0	15	Good	0	0	0	Boulder (>50cm)
36	Plexauridae	*Echinomuricea* sp.	67.3	25	Good	0	0	0	Boulder (>50cm)
37	Plexauridae	*Echinomuricea* sp.	66.7	20	Good	0	0	0	Boulder (>50cm)
38	Dendrophylliidae	*Tubastraea* sp. A	64.3	10 x 10	Good	0	0	0	Boulder (>50cm)
39	Plexauridae	*Echinomuricea* sp.	60.0	20	Good	0	0	0	Boulder (>50cm)

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

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

Coral no.	Family	Species	Position on transect (m)	Size: Hard Corals: L x W cm Octocorals: L cm	Health Condition	%Sed	%B	%PM	Associated Substrate Type
80	Plexauridae	*Echinomuricea* sp.	21.6	35	Good	0	0	0	Rubble (<50cm)
81	Plexauridae	*Echinomuricea* sp.	21.3	40	Good	0	0	0	Rubble (<50cm)
82	Plexauridae	*Echinomuricea* sp.	21.3	35	Good	0	0	0	Rubble (<50cm)
83	Plexauridae	*Echinomuricea* sp.	21.3	40	Good	0	0	0	Rubble (<50cm)
84	Plexauridae	*Echinomuricea* sp.	20.8	45	Good	0	0	0	Boulder (>50cm)
85	Plexauridae	*Echinomuricea* sp.	20.5	20	Good	0	0	0	Boulder (>50cm)
86	Plexauridae	*Echinomuricea* sp.	20.2	20	Good	0	0	0	Rubble (<50cm)
87	Dendrophylliidae	*Tubastraea* sp. C	20.2	10 x 10	Good	0	0	0	Rubble (<50cm)
88	Plexauridae	*Echinomuricea* sp.	19.6	15	Good	0	0	0	Boulder (>50cm)
89	Plexauridae	*Echinomuricea* sp.	19.2	15	Good	0	0	0	Boulder (>50cm)
90	Plexauridae	*Echinomuricea* sp.	18.6	15	Good	0	0	0	Boulder (>50cm)
91	Plexauridae	*Echinomuricea* sp.	18.3	15	Good	0	0	0	Boulder (>50cm)
92	Plexauridae	*Echinomuricea* sp.	16.8	10	Good	0	0	0	Rubble (<50cm)
93	Plexauridae	*Echinomuricea* sp.	16.8	15	Good	0	0	0	Rubble (<50cm)
94	Plexauridae	*Echinogorgia* sp. B	15.4	15	Good	0	0	0	Boulder (>50cm)
95	Plexauridae	*Echinomuricea* sp.	14.2	25	Good	0	0	0	Boulder (>50cm)
96	Plexauridae	*Echinomuricea* sp.	14.2	30	Good	0	0	0	Boulder (>50cm)
97	Plexauridae	*Echinomuricea* sp.	13.3	20	Good	0	0	0	Boulder (>50cm)
98	Plexauridae	*Echinomuricea* sp.	13.3	25	Good	0	0	0	Boulder (>50cm)
99	Plexauridae	*Echinomuricea* sp.	12.7	15	Good	0	0	0	Rubble (<50cm)

Coral no.	Family	Species	Position on transect (m)	Size: Hard Corals: L x W cm Octocorals: L cm	Health Condition	%Sed	%B	%PM	Associated Substrate Type
100	Plexauridae	*Echinomuricea* sp.	12.7	15	Good	0	0	0	Rubble (<50cm)
101	Plexauridae	*Echinomuricea* sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
102	Plexauridae	*Echinomuricea* sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
103	Plexauridae	*Echinomuricea* sp.	11.7	40	Good	0	0	0	Boulder (>50cm)
104	Plexauridae	*Echinomuricea* sp.	11.7	40	Good	0	0	0	Boulder (>50cm)
105	Plexauridae	*Echinomuricea* sp.	11.7	20	Good	0	0	0	Boulder (>50cm)
106	Plexauridae	*Echinomuricea* sp.	11.0	25	Good	0	0	0	Boulder (>50cm)
107	Plexauridae	*Echinomuricea* sp.	11.0	35	Good	0	0	0	Boulder (>50cm)
108	Plexauridae	*Echinomuricea* sp.	10.6	15	Good	0	0	0	Boulder (>50cm)
109	Plexauridae	*Echinomuricea* sp.	10.6	20	Good	0	0	0	Boulder (>50cm)
110	Plexauridae	*Echinomuricea* sp.	7.4	35	Good	0	0	0	Boulder (>50cm)
111	Plexauridae	*Echinomuricea* sp.	7.4	40	Good	0	0	0	Boulder (>50cm)
112	Plexauridae	*Echinomuricea* sp.	7.0	25	Good	0	0	0	Boulder (>50cm)
113	Plexauridae	*Echinomuricea* sp.	7.0	20	Good	0	0	0	Rubble (<50cm)
114	Plexauridae	*Echinomuricea* sp.	7.0	20	Good	0	0	0	Rubble (<50cm)
115	Plexauridae	*Echinomuricea* sp.	2.6	35	Good	0	0	0	Boulder (>50cm)
116	Plexauridae	*Echinomuricea* sp.	2.6	30	Good	0	0	0	Boulder (>50cm)
117	Plexauridae	*Echinomuricea* sp.	2.6	20	Good	0	0	0	Rubble (<50cm)
118	Plexauridae	*Echinomuricea* sp.	1.0	25	Good	0	0	0	Boulder (>50cm)
119	Plexauridae	*Echinomuricea* sp.	0.5	20	Good	0	0	5	Boulder (>50cm)

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

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

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

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

4 SUMMARY OF CORAL BASELINE SURVEY'S 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
Octocorals					
1	Plexauridae	*Echinomuricea* sp.	Common (Ang et al. 2010)	Not available	
2	Plexauridae	*Echinogorgia* spp.	Common (Ang et al. 2010)	Not available	
3	Plexauridae	*Menella* 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**).

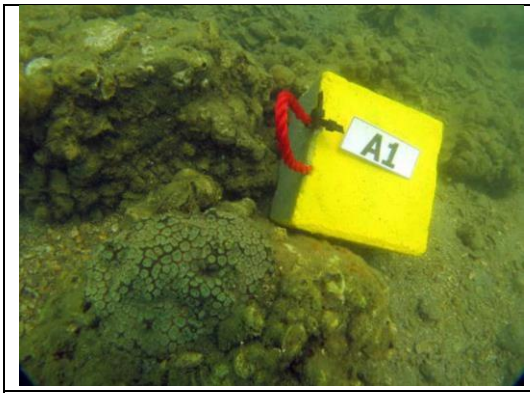	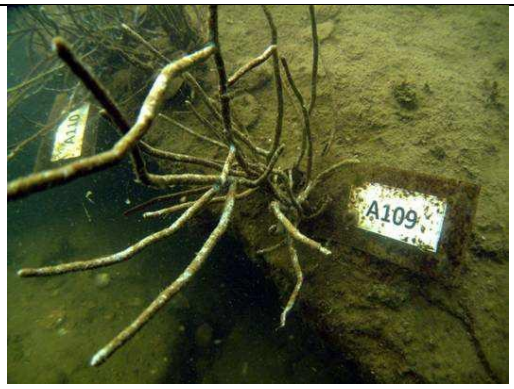
Photo 5.1 Concrete block in bright color can be used for coral tagging.	**Photo 5.2** Laminated labels can be used for tagging corals with fragments or branching structures, and tied onto the basal section of octocoral and black corals.

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

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 3rd, 6th, 9th and 12th 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 *Echinomuricea* sp. was the only species present and tagged as natural coral colonies at the translocation recipient location. To better compare between the natural coral colonies and the translocated coral colonies, 10 healthy translocated coral colonies (21% of all translocated corals, *Echinomuricea* sp.) will be selected by the Coral Specialist of ET for the post-translocation monitoring.

6.5 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 selected 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 selected 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

6.6 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.

6.7 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**.

6.8 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

	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.

Reporting for Post-translocation Monitoring

6.9 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;
- Location of the selected translocated corals; and
- Condition of selected translocated coral colonies and assessment on the health condition of the corals;

7 REFERENCES

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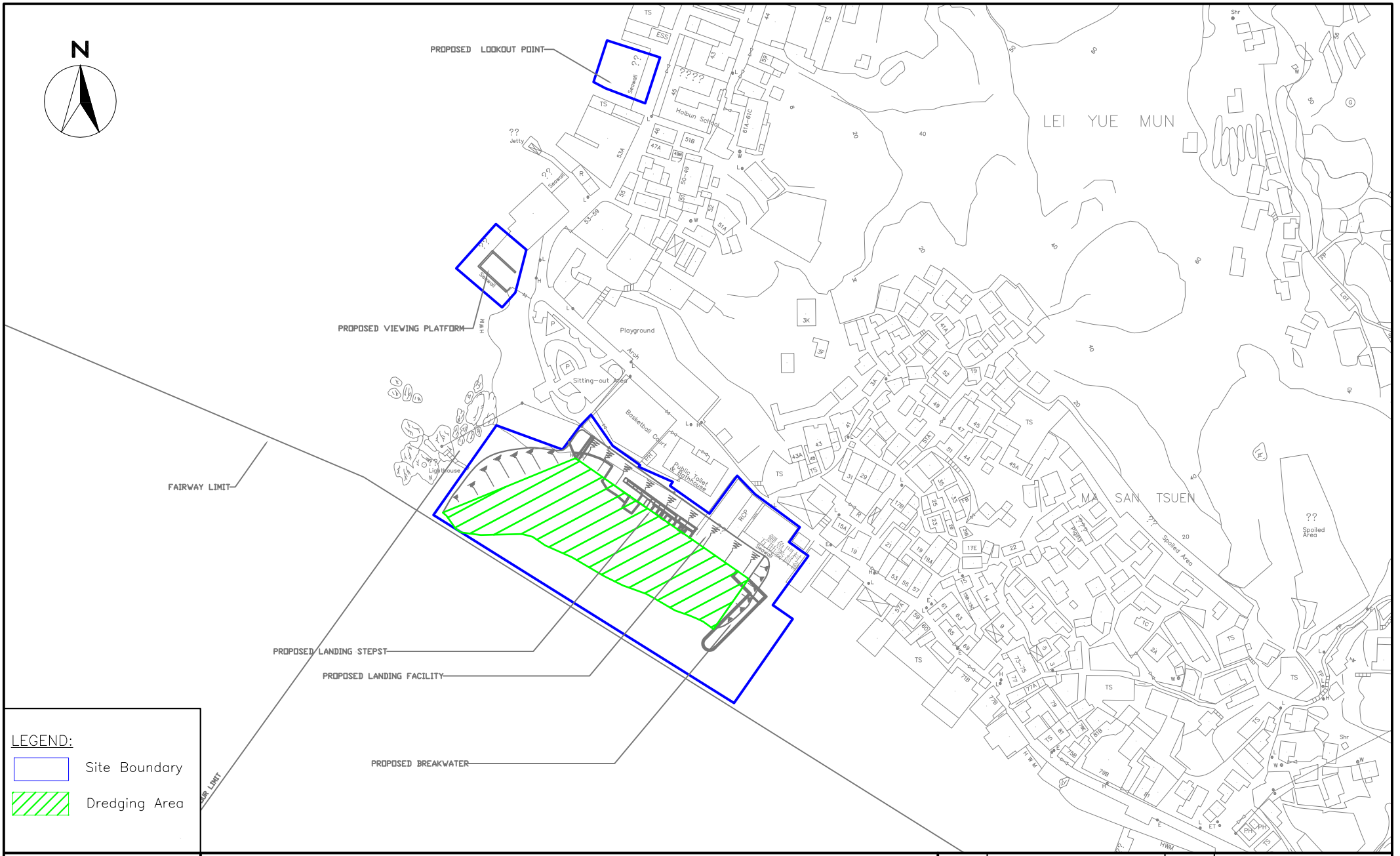
3. Hoeksema BW, Cairns S (2021) World List of Scleractinia. Duncanopsammia peltata (Esper, 1794). Accessed through: World Register of Marine Species at: http://www.marinespecies.org/aphia.php?p=taxdetails&id=1469809 on 2021-03-20

4. IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. <https://www.iucnredlist.org>

FIGURES



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

Site Layout Plan

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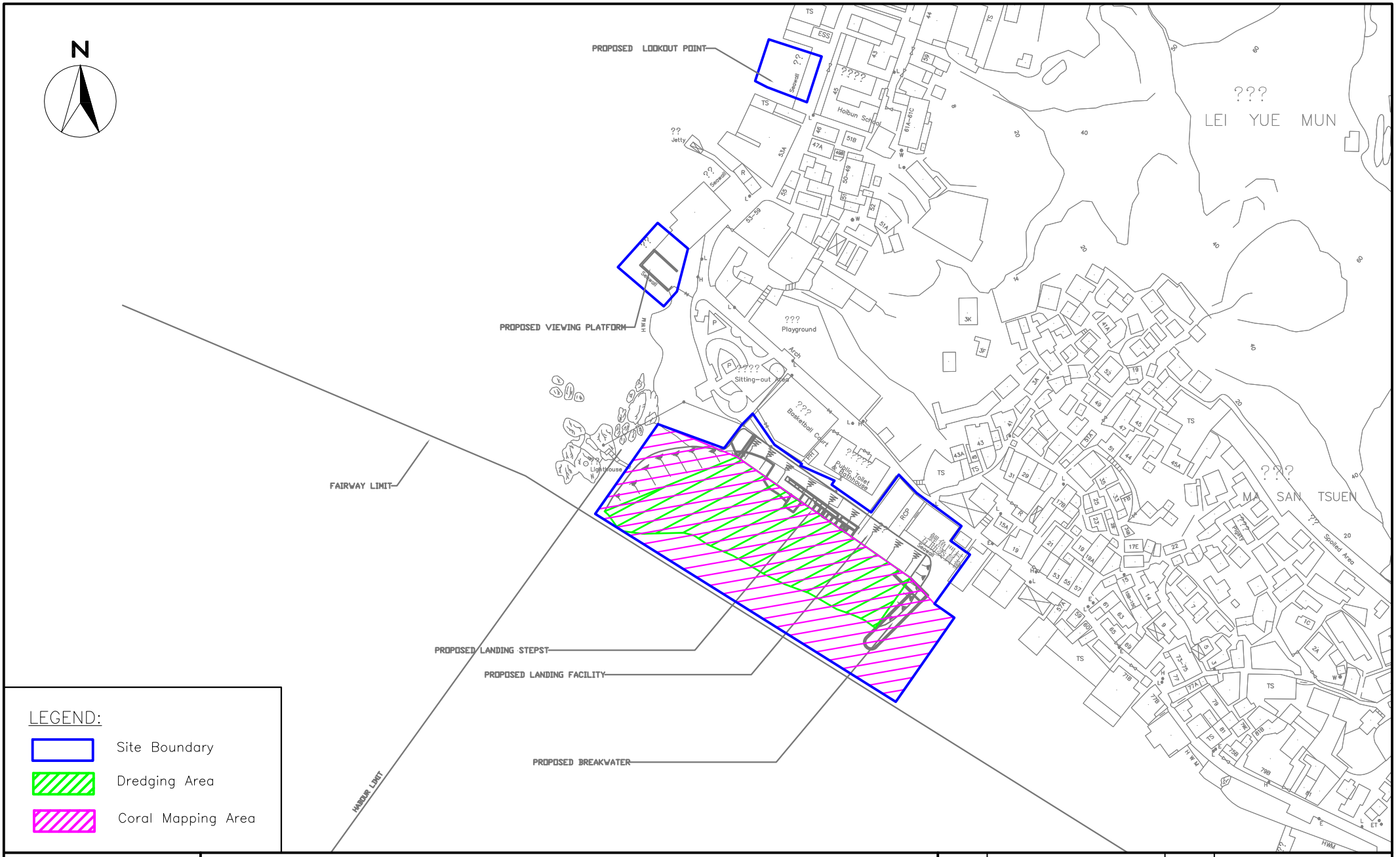
CHECK	JT	DRAWN	NL
Project No.	WEC20026	FIGURE NO. 1	REV —



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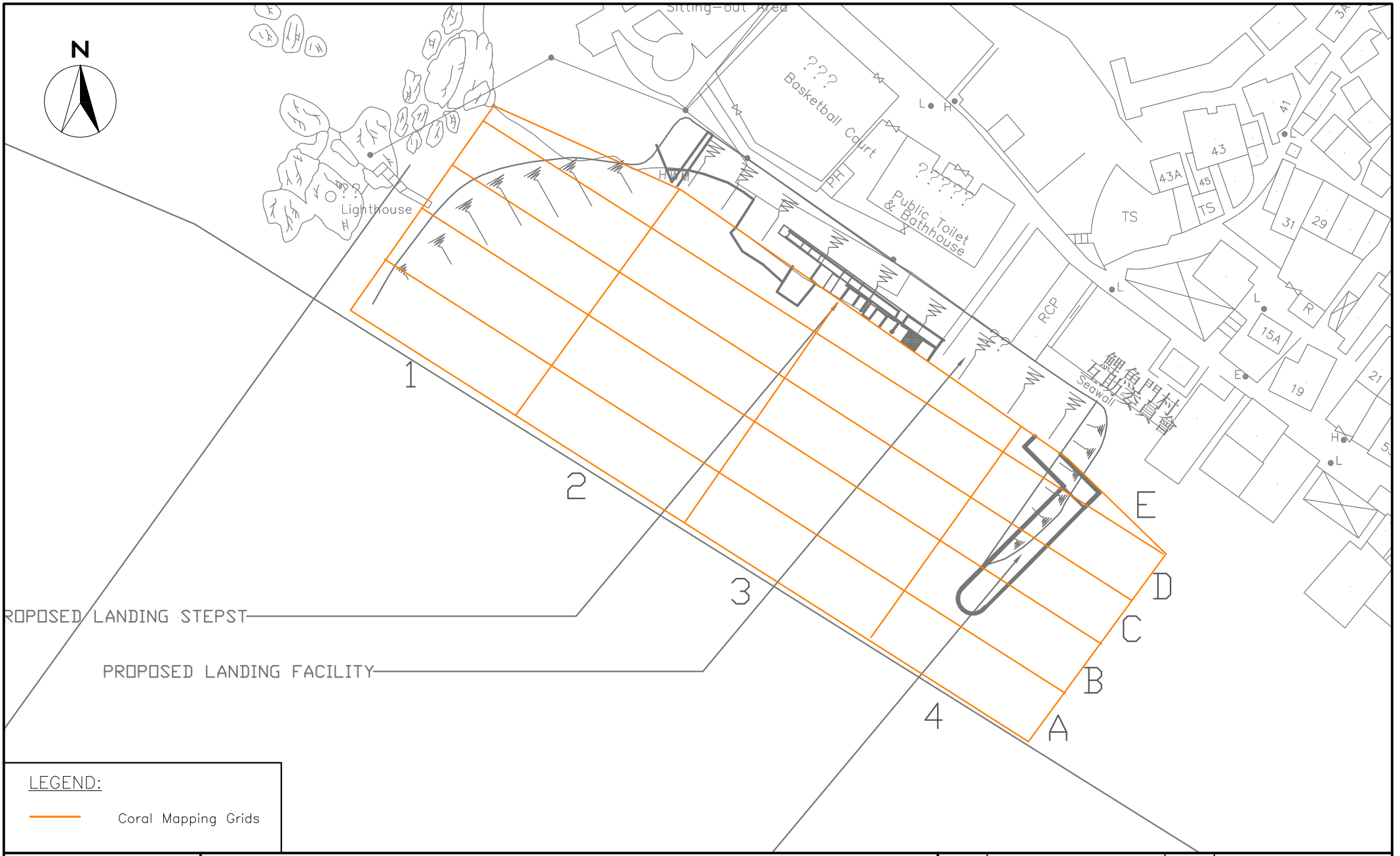
Contract No. CV/2020/09
Construction of Lei Yue Mun Public Landing Facility

Location Plan of Coral Baseline Survey

SCALE	1: 4500 @A4	DATE	Jan 2021
CHECK	JT	DRAWN	NL
Project No.	WEC20026	FIGURE NO. 2	REV —



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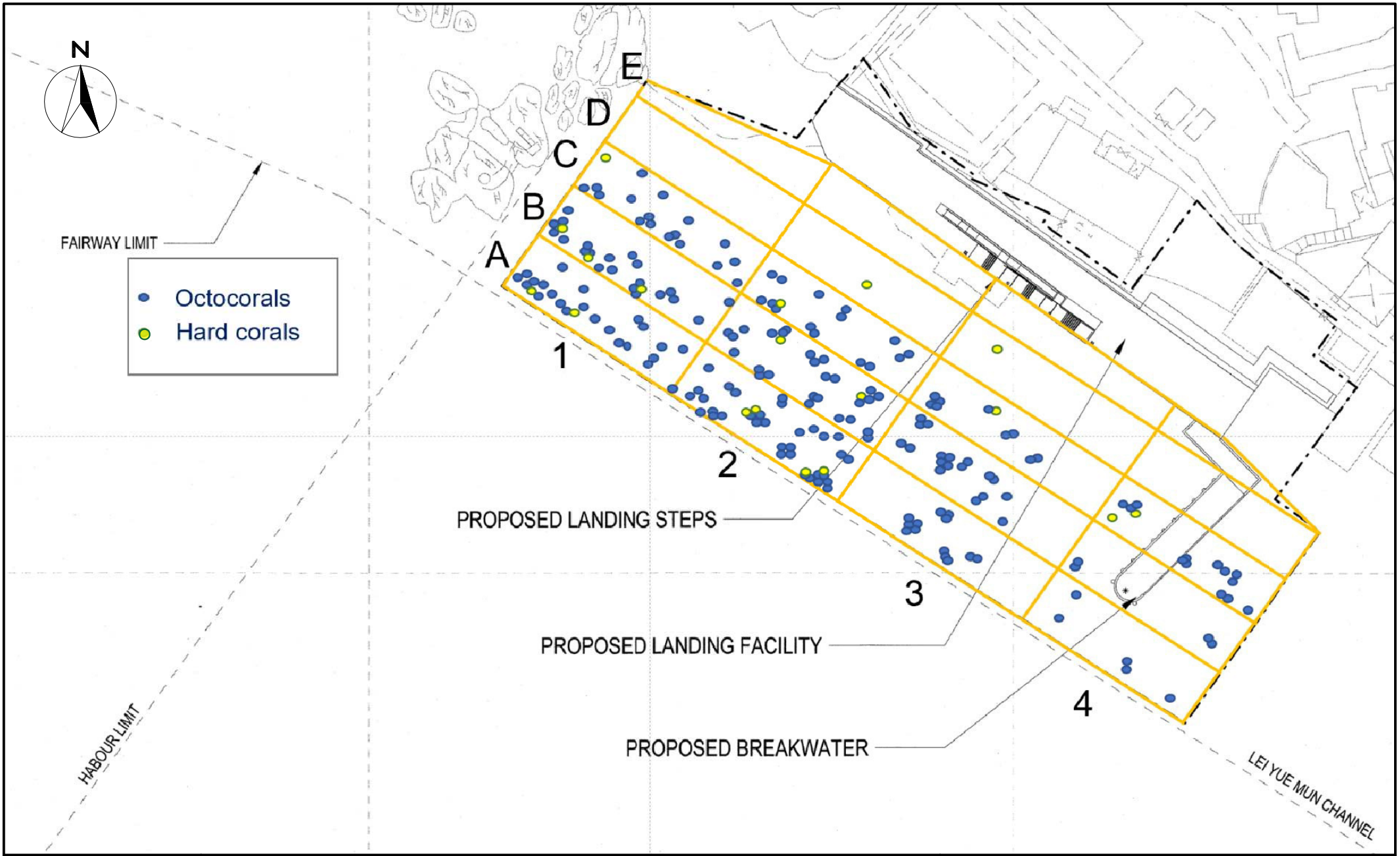
Contract No. CV/2020/09
Construction of Lei Yue Mun Public Landing Facility

Coral Mapping Survey Grids

SCALE	1: 2000 @A4	DATE	Mar 2021
CHECK	IT	DRAWN	JT
Project No.	WEC20026	FIGURE NO. 3	REV —



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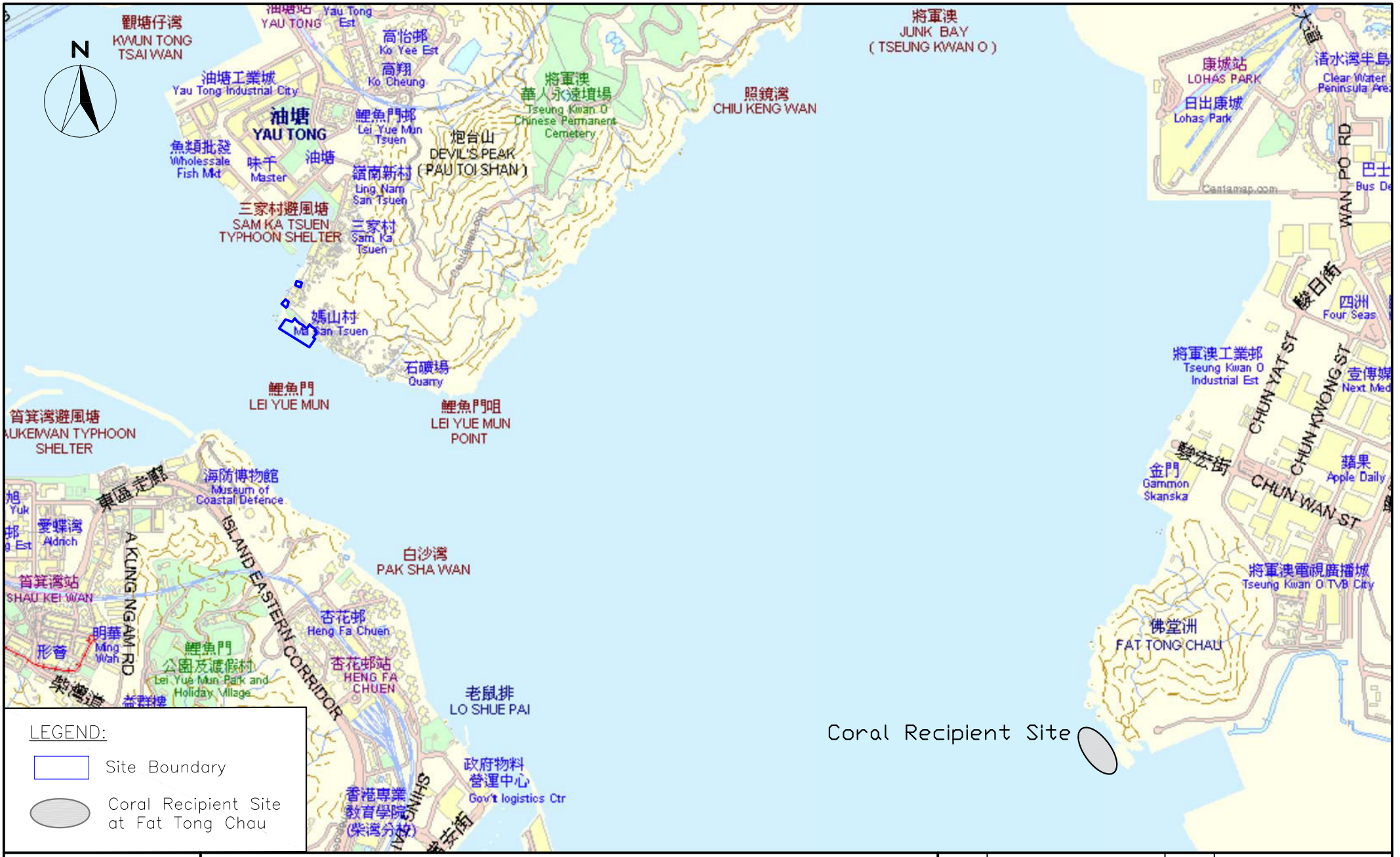
Contract No. CV/2020/09
Construction of Lei Yue Mun Public Landing Facility

Locations of Coral Colonies in the Coral Mapping Area

SCALE	1: 2000 @A4	DATE	Mar 2021
CHECK	IT	DRAWN	JT
Project No.	WEC20026	FIGURE NO. 4	REV —



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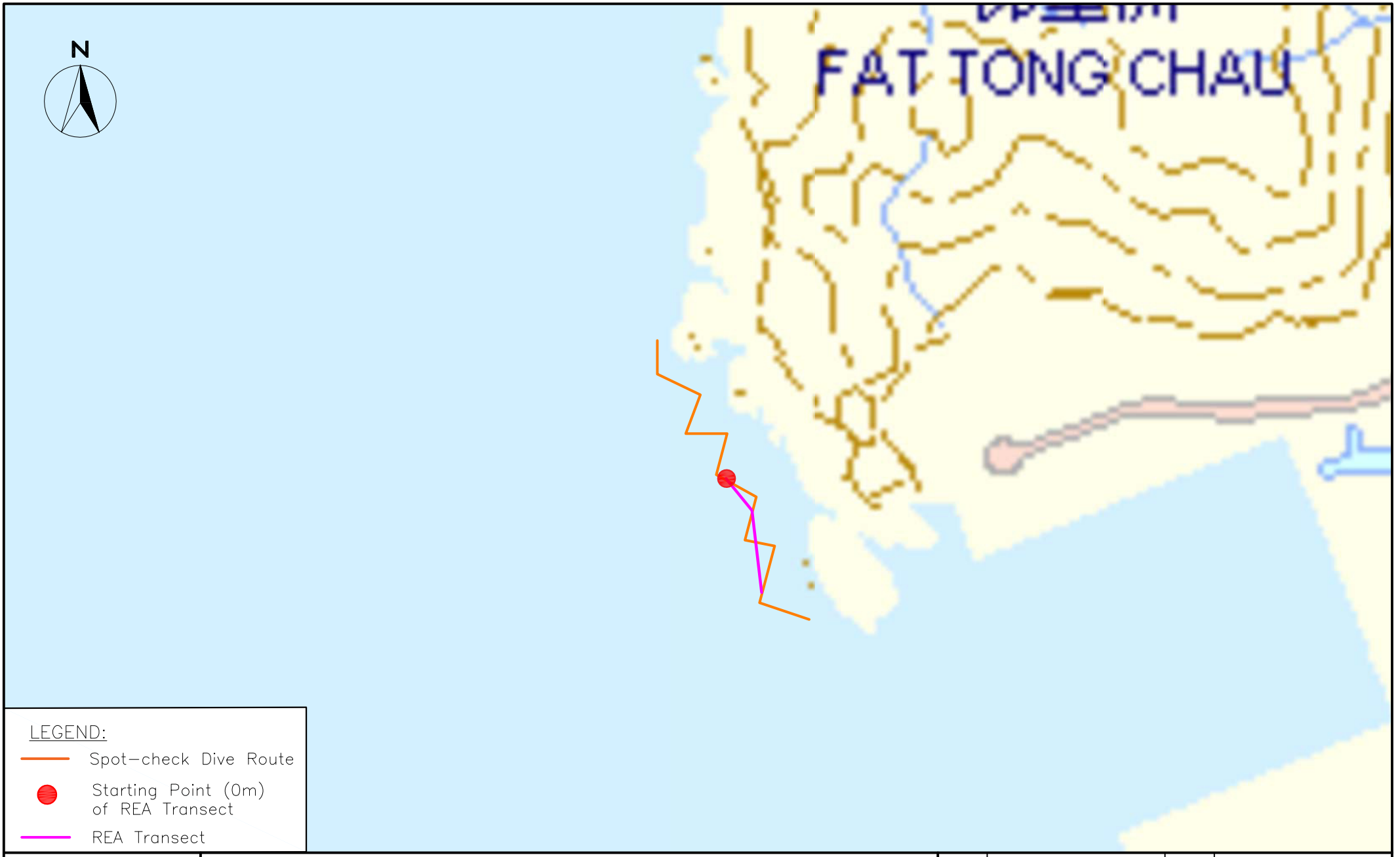
Contract No. CV/2020/09
Construction of Lei Yue Mun Public Landing Facility

Location of Coral Recipient Site at Fat Tong Chau, Junk Bay

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



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

Location Plan of Coral Survey at Fat Tong Chau, Junk Bay

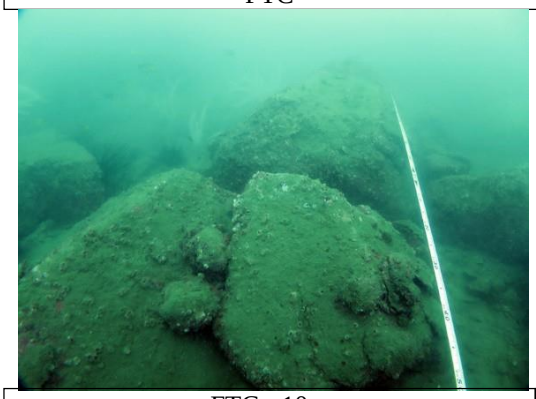
SCALE	1:10000 @A4	DATE	Mar 2021
CHECK	IT	DRAWN	JT
Project No.	WEC20026	FIGURE NO.	5b
		REV	–

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

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

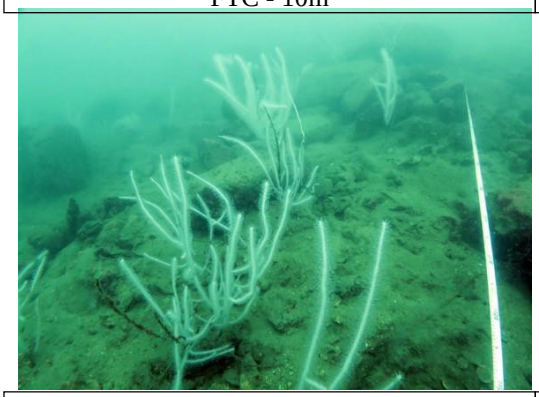
FTC

FTC - 0m

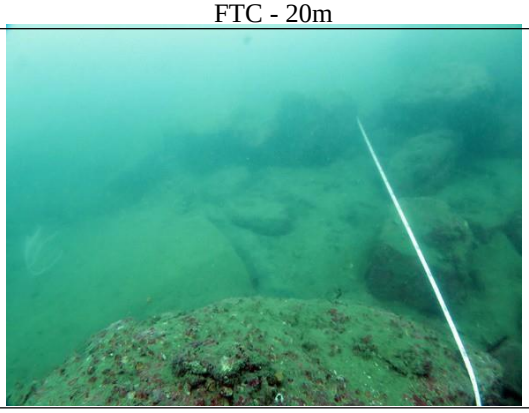


FTC - 10m

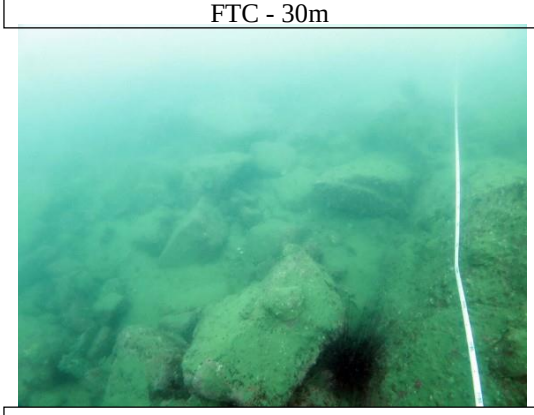
FTC - 20m



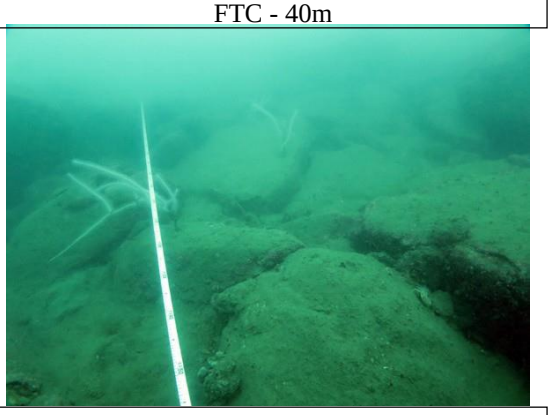
FTC - 30m



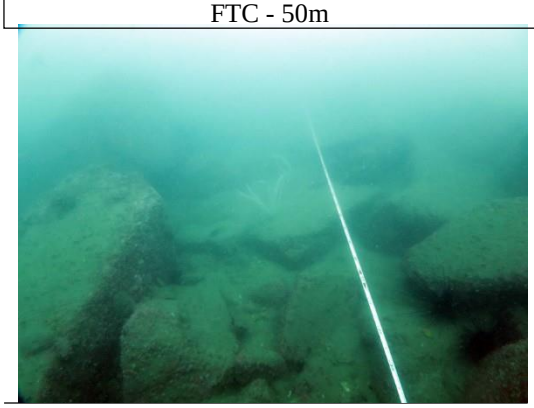
FTC - 40m



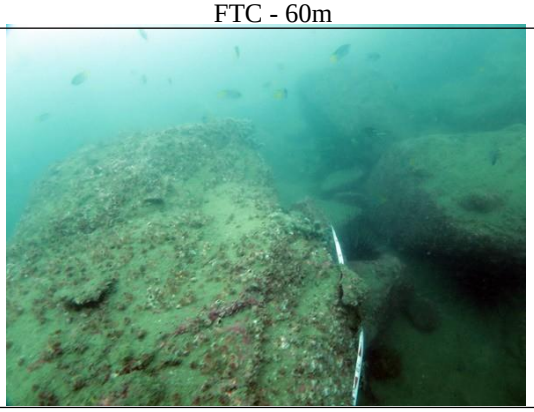
FTC - 50m



FTC - 60m

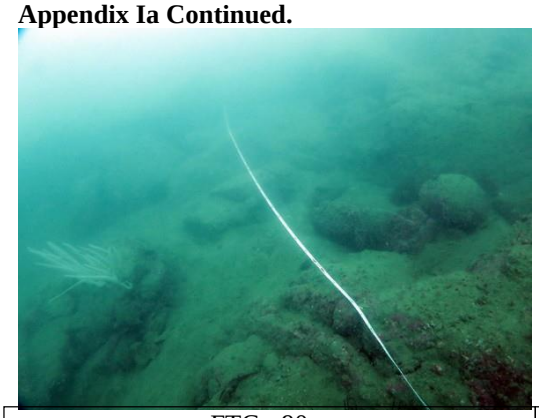


FTC - 70m



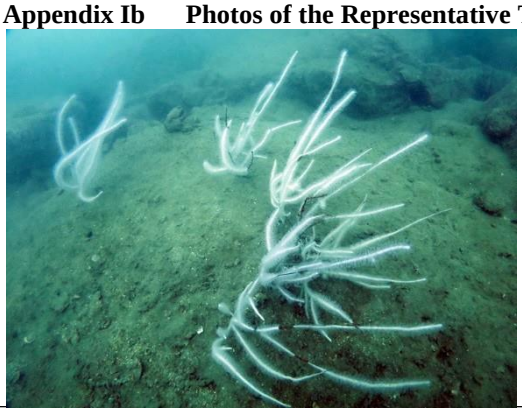
FTC - 80m

Appendix Ia Continued.

	
FTC - 90m	FTC - 100m

APPENDIX Ib
PHOTOS OF REPRESENTATIVE TAXA AT FTC, JUNK BAY

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

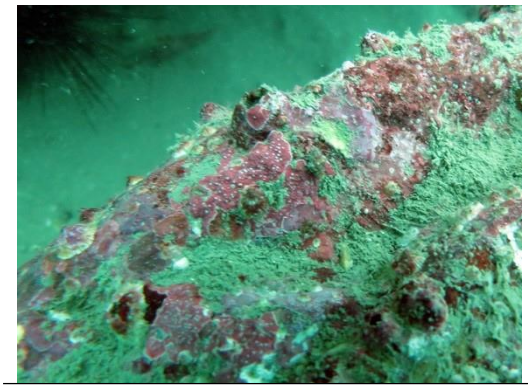


Gorgonians (*Echinomuricea* sp.)

Hard corals (*Tubastraea* sp. C)

Hard corals (*Tubastraea* sp. A)

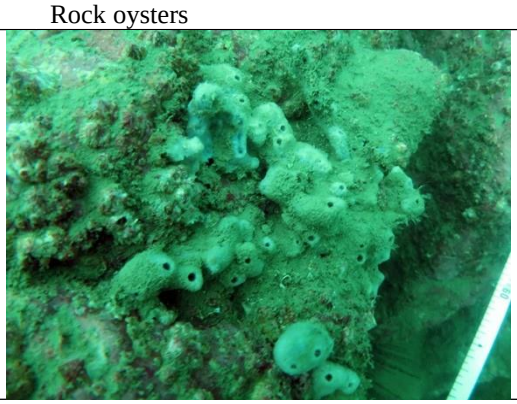
Gorgonians



Crustose coralline algae

Rock oysters

Hard substrates covered by sediments

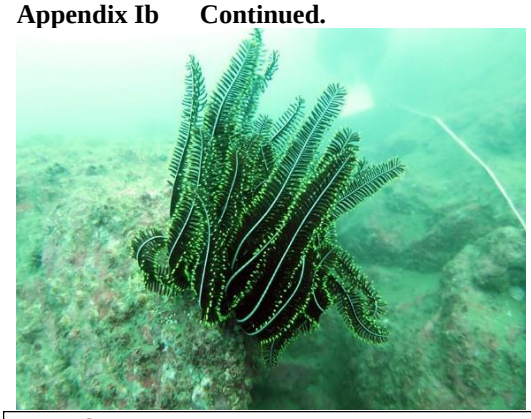


Sponges

Sea anemones

Barnacles

Appendix Ib Continued.

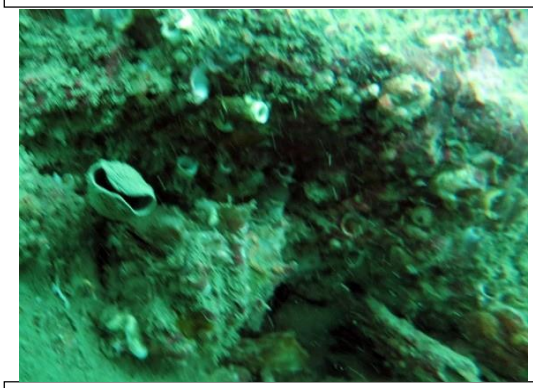


Feather stars

Sea urchin (*Diadema setosum*)

Nudibranch

Bryozoans



Tube worms

Tube worms

Hard corals (*Tubastraea* sp.)

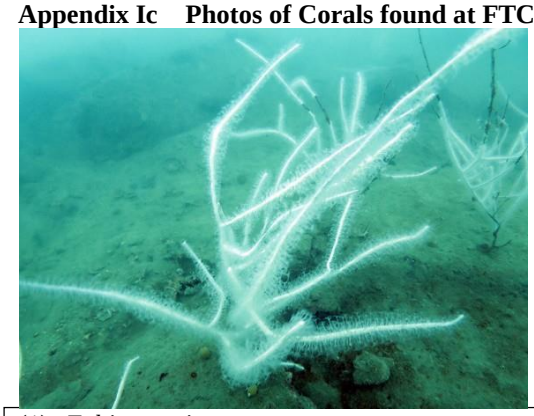
Octocorals (*Echinogorgia* sp.)

Sea urchin (*Heliocidaris crassispina*)

Turban shell

APPENDIX Ic
PHOTOS OF CORAL COLONIES FOUND AT FTC, JUNK BAY

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

APPENDIX II
SAMPLE DATASHEET FOR POST-TRANSLOCATION MONITORING

A sample datasheet for coral monitoring survey of original and translocated corals at recipient site.

	Site	Coral tag no.	Species	% Sedimentation	% Mortality	% Bleaching
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						