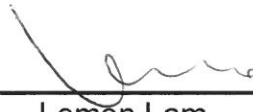


**Bay to Bay Express Cable System -
Hong Kong Segment (BtoBE-HK) – Chung Hom Kok**

**This Submission of Post-project Coral Survey Report
on 15 July 2021 has been reviewed and certified by the
Environmental Team Leader (ETL)
in accordance with Condition 3.5 of the Environmental
Permit No. EP-573/2020 of the Project.**

Reviewed & Certified:



Lemon Lam
Environmental Team Leader (ETL)



Member of the Surbana Jurong Group

local people
global experience

Our Ref: 7076640/27672/AB/TSC/JC/rw

15 July 2021

OMS Group Sdn Bhd (previously known as Optic Marine Services Sdn Bhd)
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By Email Only
(david.lim@opticmarine.com)

Attention: Mr. David LIM

Dear Sir

**Bay to Bay Express Cable System – Hong Kong Segment (BtoBE-HK) – Chung Hom Kok
Verification of Post-project Coral Survey Report**

Reference is made to the *Post-project Coral Survey Report* dated July 2021, submitted by the Environmental Team via e-mail on 15 July 2021.

We hereby verify the said Post-project Coral Survey Report has complied with the requirement as set out under Condition 3.5 of the Environmental Permit.

Thank you very much for your kind attention. Please do not hesitate to contact the undersigned should you have any queries.

Yours faithfully

Cindy CHUNG
Independent Environmental Checker

cc: AECOM Ms. Lemon LAM

(By Email: lemon.lam@aecom.com)

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**Bay to Bay Express Cable System –Hong Kong Segment (BtoBE-HK) – Chung
Hom Kok**

Post-project Coral Survey Report



ECO-ENVIRO CONSULTANTS COMPANY

July 2021

Survey Conducted by Mr. Keith Kei

A Marine Ecologist with extensive experience in marine ecology, particularly in assessment and management of corals in Hong Kong.

Summary

- The Post-project Spot Dive Survey was carried out at the shore of Sha Shek Tan.
- A total of eighteen hard coral colonies were recorded during the spot dive survey and no coral colonies were found along the cable laying work area.
- Except the undescribed species, *Coscinaraea* sp., all corals recorded in the survey area are common species in Hong Kong water.

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1. Introduction

- 1.1 The Bay to Bay Express (BtoBE) Cable System is a 38mm diameter submarine telecommunications cable that will further enhance and contribute to the much-needed expansion of communications networks between Hong Kong, the United States, Malaysia and Singapore. With multiple pairs of optical fibres, BtoBE will enable high capacity transmission of data across the Pacific Ocean with round trip latency of less than 130ms. BtoBE will be built with advanced optical submarine transmission equipment, thereby improving network redundancy, flexibility and ensuring highly reliable communications. Installation is scheduled to be completed and the system is planned to be in service in 2021.
- 1.2 The total length of the whole BtoBE Cable System will be 16,000km, of which this Project – the Hong Kong Segment (BtoBE-HK) – is about 36.6km in length within Hong Kong waters. Buried below the seabed, the BtoBE-HK Cable enters the eastern waters of Hong Kong, follows the established “east-west cable corridor (north)” and lands at an existing Beach Manhole (BMH) at Sha Shek Tan Beach (SST Beach) on the Chung Hom Kok (CHK) peninsula, which is at the south side of Hong Kong Island. This is the same landing location of the existing South-East Asia Japan Cable System (“SJC”) and other cables, including City-to-City Cable System (“C2C”) and the East Asia Crossing + C2C cable system (“EAC-C2C”).
- 1.3 Direct impact on coral communities caused by cable laying works during the construction and operation is not likely. However, hard corals were recorded in the near shore area of SST, as a precautionary measure a Pre-installation Coral Survey and a Post-project Coral Survey shall be carried out.
- 1.4 The Pre-installation Coral Survey was conducted in March 2021 before cable installation and a total of eighteen hard coral colonies were recorded with good health condition. The Post-project Coral Survey shall be carried out within four weeks after the end of cable installation works. The objective is to verify the corals identified during the Pre-installation Coral Survey have not been directly impacted as a result of the cable installation.

2. Methodology

- 2.1 One subtidal spot dive survey will be carried out within four weeks after the end of the cable installation works in Station 1 and Station 3 (**Figure 1**) to verify the health of coral colonies found during the pre-installation coral survey. For each coral colony found, the following data should be recorded:

- GPS location
- Species identification to genus or species level, as far as practicable
- sizes (e.g. maximum diameter) and health of identified corals (e.g. degree of sedimentation, partial mortality, sign of bleaching)
- Photographic record
- Survey date and time
- Underwater visibility
- Atmospheric, sea and tidal conditions

3. Result

3.1 The Post-project Coral Survey was carried out on 5th July 2021 and the weather conditions were summarized in **Table 1**.

Table 1 Weather Condition for the spot dive survey on 5th July 2021

Date	Condition	Average Underwater Visibility
5 th July 2021	<ul style="list-style-type: none"> - East force 4 to 5, - Sunny period with rain patches - Tidal level 1.82m 	Less than 0.5 m

3.2 Spot dive survey were carried out from 7:30 to 11:00 on 5th July 2021 in Station 1 and Station 3 (**Figure 1**). The average depth during the dive survey was about 3 m.

3.3 The survey area is mainly composed of sandy bottom with scattered boulders and rocks along the shore area of SST. Lot of abandoned nets was found in the survey area. The average visibility along the survey area was less than 0.5 m during the dive survey.

3.4 Same as the pre-installation coral survey, thirteen hard coral colonies with nine species were recorded in Station 1 during the spot dive survey (**Table 2**) including *Bernardpora stutchburyi*, *Coscinaraea* sp., *Cyphastrea serailia*, *Favites abdita*, *Favites pentagona*, *Leptastrea purpurea*, *Plesiastrea versipora*, *Porites lutea* and *Duncanopsammia peltata*. Their GPS coordinates, size and health condition were recorded in **Table 2**. Photos of each coral colony were shown in Photo Plate A. Except the undescribed species *Coscinaraea* sp., all corals recorded in the survey area are common species in Hong Kong water. No soft coral was recorded during the survey.

3.5 Five hard coral colonies with five species were recorded in Station 3 during the spot dive survey (**Table 3**) including *Favites abdita*, *Favites flexuosa*, *Favites chinensis*, *Favites acuticollis* and *Duncanopsammia peltata*. Their GPS coordinates, size and health condition were recorded in **Table 3**. Photos of each coral colony were shown in Photo Plate B. All corals recorded in the survey area are common species in Hong Kong water.

Table 2 GPS Coordinates, Size and Health Condition of Recorded Coral Colonies in Station 1 during Spot Dive Survey

No.	Coral species	Size (cm)	% Bleaching	Partial Mortality	% Sediment	GPS Coordinates		Closest Distance to Cable Alignment (m)
1	<i>Leptastrea purpurea</i>	18	0	0	10	22°12'59.11N	114°12'27.40E	55
2	<i>Leptastrea purpurea</i>	16	0	0	15	22°12'59.11N	114°12'27.40E	55
3	<i>Favites abdita</i>	14	0	0	0	22°12'59.10N	114°12'26.82E	62
4	<i>Duncanopsammia peltata</i>	22	0	0	0	22°12'59.10N	114°12'26.82E	62
5	<i>Plesiastrea versipora</i>	18	0	0	5	22°12'58.86N	114°12'26.47E	58
6	<i>Cyphastrea serailia</i>	29	0	0	0	22°12'58.86N	114°12'26.47E	58

No.	Coral species	Size (cm)	% Bleaching	Partial Mortality	% Sediment	GPS Coordinates		Closest Distance to Cable Alignment (m)
7	<i>Porites lutea</i>	25	0	5	0	22°12'58.43N	114°12'26.22E	48
8	<i>Porites lutea</i>	27	0	0	0	22°12'58.43N	114°12'26.22E	48
9	<i>Bernardpora stutchburyi</i>	14	0	0	0	22°12'58.43N	114°12'26.22E	48
10	<i>Favites pentagona</i>	20	0	0	0	22°12'58.82N	114°12'27.24E	48
11	<i>Duncanopsammia peltata</i>	35	0	0	0	22°12'58.82N	114°12'27.24E	48
12	<i>Coscinaraea sp.</i>	14	0	0	0	22°12'58.54N	114°12'26.93E	44
13	<i>Porites lutea</i>	22	0	0	5	22°12'58.54N	114°12'26.93E	44

Table 3 GPS Coordinates, Size and Health Condition of Recorded Coral Colonies in Station 3 during Spot Dive Survey

No.	Coral species	Size (cm)	% Bleaching	Partial Mortality	% Sediment	GPS Coordinates		Closest Distance to Cable Alignment (m)
1	<i>Duncanopsammia peltata</i>	69	0	0	0	22°12'53.33N	114°12'26.11E	96
2	<i>Favites abdita</i>	8	0	0	0	22°12'53.33N	114°12'26.11E	96
3	<i>Favites flexuosa</i>	22	0	0	0	22°12'55.07N	114°12'25.57E	41
4	<i>Favites chinensis</i>	58	0	0	1	22°12'55.07N	114°12'25.57E	41
5	<i>Favites acuticollis</i>	49	0	0	0	22°12'55.07N	114°12'25.57E	41

4. Discussion

4.1 The hard substrates of the survey site were mainly composed of sandy bottom with scattered boulders and rocks. A total of 18 hard coral colonies (Station 1: 13 colonies; Station 3: 5 colonies) were recorded during the spot dive survey. All coral recorded during the survey are in good health condition. No rare animals were recorded. They are all common species and found in very low abundance and diversity.

4.2 All coral colonies recorded during the post-project coral survey showed the same health condition as the pre-installation coral survey. No bleaching, increased sediment and increased partial mortality were recorded during the survey after the cable laying work. As a conclusion, there is not directly impact on the recorded coral colonies during the cable installation work.

5. References

Brian Morton and John Morton. 1983. *The Sea Shore Ecology of Hong Kong*. Hong Kong University Press.

Binnie Consultants Limited. 1995. *Marine Ecology of Hong Kong: Report on Underwater Dive Surveys. Volume I. Civil Engineering Department Geotechnical Engineering Office*

Chan A.L.K., Choi, C.L.S., McCorry D., Chan K.K., Lee, M.W., and Put, A. Jr. 2005. *Field Guide to Hard Corals of Hong Kong*. AFCD.

END

Figure 1 Spot Dive Survey Location at Station 1 and Station 3

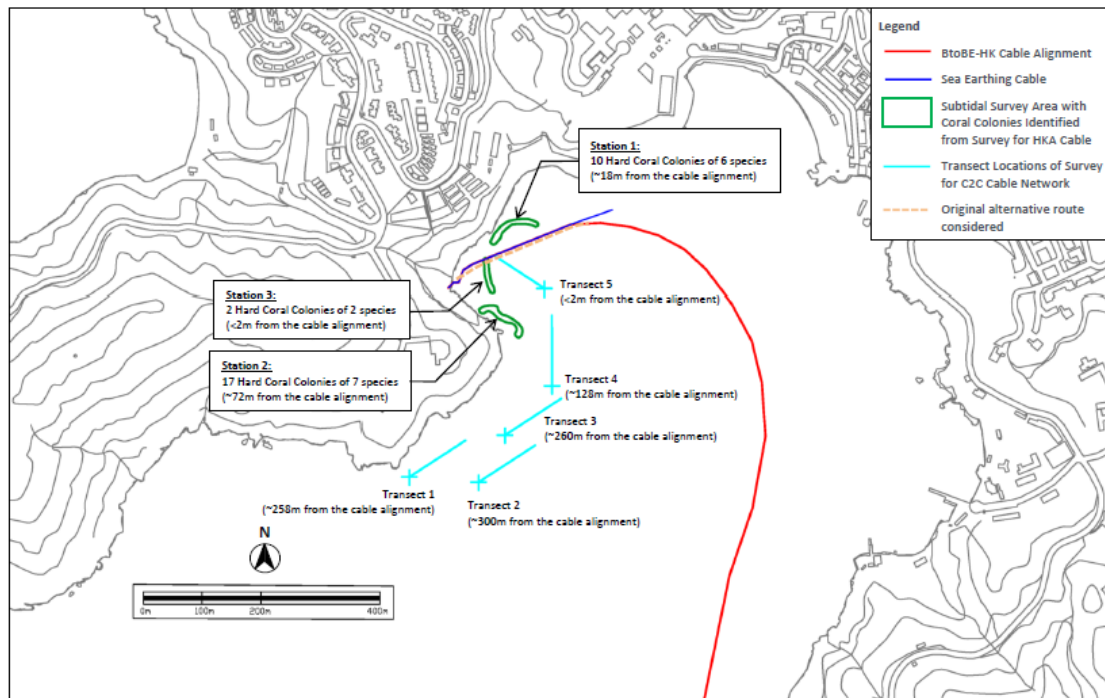

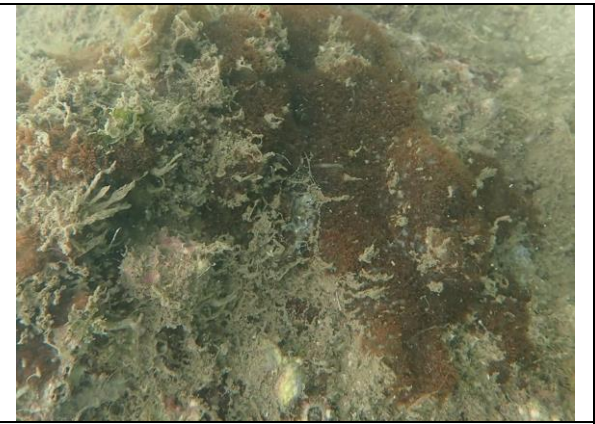
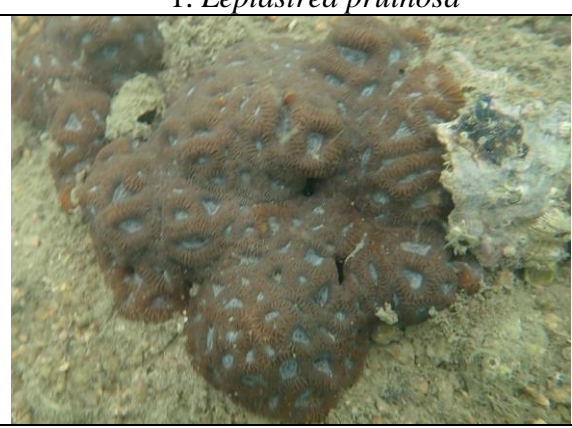
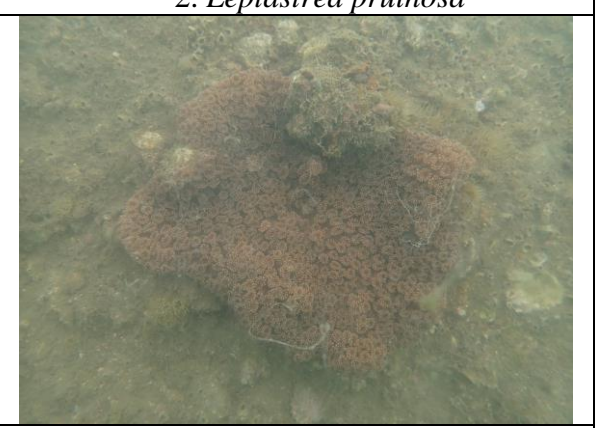
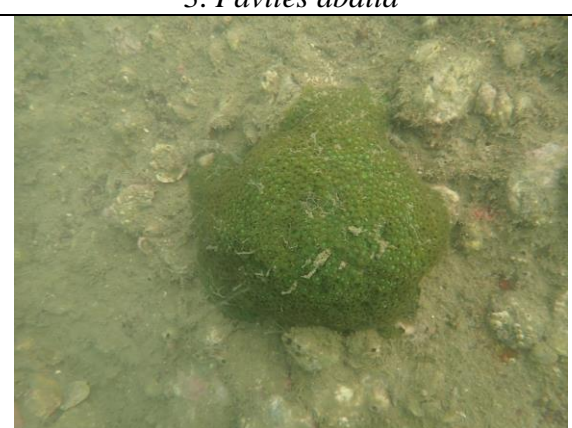
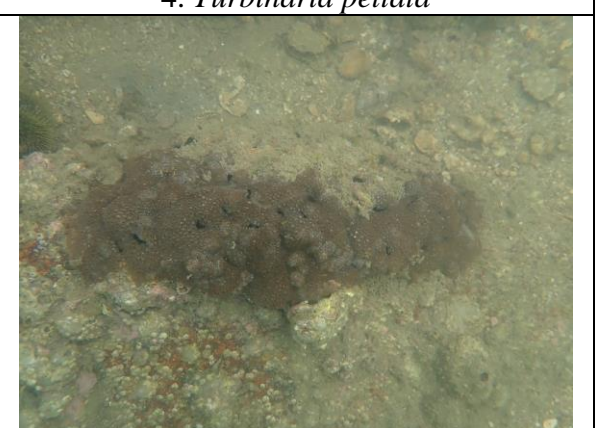


PHOTO PLATE A

	
<p>1. <i>Leptastrea pruinosa</i></p>	<p>2. <i>Leptastrea pruinosa</i></p>
	
<p>3. <i>Favites abdita</i></p>	<p>4. <i>Turbinaria peltata</i></p>
	
<p>5. <i>Plesiastrea versipora</i></p>	<p>6. <i>Cyphastrea serailia</i></p>













	
<p>7. <i>Porites lutea</i></p>	<p>8. <i>Porites lutea</i></p>
	
<p>9. <i>Bernardpora stutchburyi</i></p>	<p>10. <i>Favites pentagona</i></p>
	
<p>11. <i>Turbinaria peltata</i></p>	<p>12. <i>Coscinaraea sp.</i></p>
	
<p>13 <i>Porites lutea</i></p>	

PHOTO PLATE B

	
<p>1. <i>Turbinaria peltata</i></p>	<p>2. <i>Favites abdita</i></p>
	
<p>3. <i>Favites flexuosa</i></p>	<p>4. <i>Favites chinensis</i></p>
	
<p>5. <i>Favites acuticollis</i></p>	