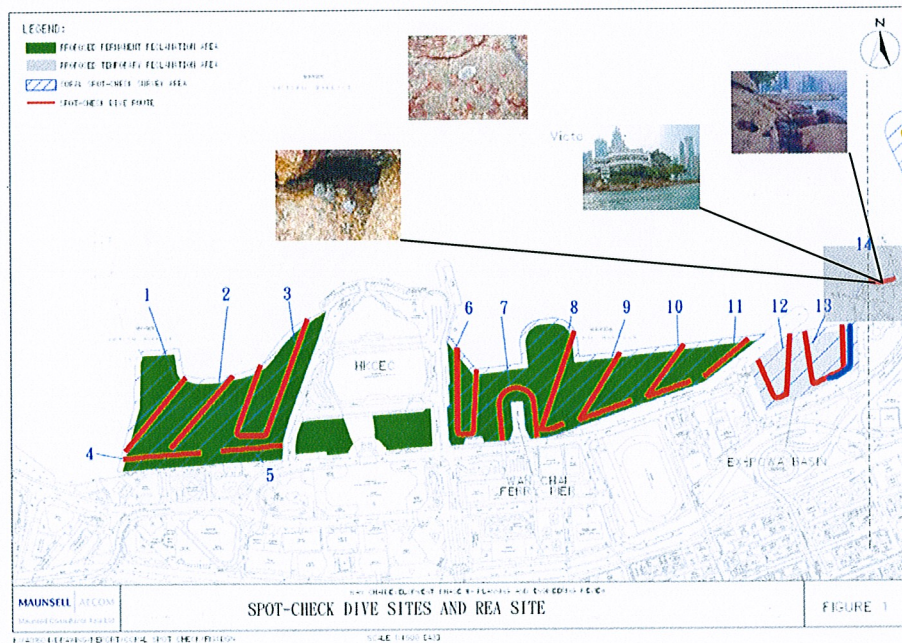


Appendix 9.2
Intertidal Communities Survey

Agreement No. CE 54/2001 (CE)
WAN CHAI DEVELOPMENT PHASE II AND CENTRAL-WAN CHAI BYPASS
ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

INTERTIDAL COMMUNITIES SURVEY



ECO-ENVIRO CONSULTANTS COMPANY

January 2007

Summary

- Intertidal ecological survey was undertaken on the coastline at the northern end of Kellet Island on 11 January 2007
- The two transects were all begun at the high tide mark and extended to the low tide level, and were approximately 10m in length
- The majority of the coastlines in the area were artificial vertical seawall or sloping rock armour
- A total of 7 species were recorded on the two transects
- No species of conservation importance or nursery/breeding activities was observed or recorded on the site
- The surveyed site exhibits a low epifauna diversity and species richness.
- The ecological value of the surveyed site is low

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1. Introduction

- 1.1 The proposed reclamation area in Wan Chai Development Phase II and Central-Wan Chai Bypass Project has been subjected to extensive sewage pollution in the past decades. Under the Harbour Area Treatment Scheme (HATS), water quality has been improved significantly since 2002.
- 1.2 The coastline found in the northern part of the Kellet Island is the only natural coastline remains in the Assessment Area, which is a typical sheltered rocky shore. As intertidal communities survey within the habitat is limited, further survey was decided to carry out to provide a more detailed and updated information on the intertidal assemblages in the northern coastline of Kellet Island
- 1.3 This section presents the findings of the intertidal baseline survey conducted on Kellet Island as part of the marine ecological study for the Wan Chai Reclamation project.

2. Methodology

- 2.1 Two locations were surveyed and one line transects was established on each of the surveyed locations (Transect A – N22°17'4.7 E114°10'55.0, and Transect B - N22°17'4.3 E114°10'55.0) (Figure 1).
- 2.2 The two transects were all begun at the high tide mark and extended to the low tide level, and were approximately 10m in length. Quadrat samples with a sampling dimension 0.5 m x 0.5 m were taken at 1m intervals along the transects. Sessile epifauna within the quadrats were identified, counted and recorded.
- 2.3 Other fauna outside the transects were also observed and recorded. Photos of the site and the fauna were taken.

3. Results

- 3.1 Intertidal ecological survey was undertaken on the coastline at the northern end of Kellet Island on 11 January 2007 (**Photo plate 1**). The surveyed site is a section of natural coastline less than 100m located at the northern end of Kellet Island.
- 3.2 The majority of the coastlines in the area were artificial vertical seawall or sloping rock armour (**Photo plate 1**). This site is the only natural coastline left in the area. Though basically natural, this site was however previously subject to high level of disturbance, evidenced by some old concretes and rubbish on the shore. Two breakwaters were located at both the eastern and western ends of this site. There was also a section of sloping seawall between the eastern breakwater and the site, and the backshore of the site was also urbanised area (the area within the Yacht Club). Natural substrates were thus limited to the area less than 20m in length (from low tide mark) and less than 100m in width.
- 3.3 The eastern part of the site was covered by large-sized boulders and bedrocks (Transect A location), while the western part was covered by old concretes, cobbles and bedrocks (Transect B location).

3.4 A total of 7 species were recorded on the two transects and their numbers were shown in Table 1 below (high tide mark – quadrat 1 and extended to the low tide level – quadrat 7). Numbers of species were similar on both transects and numbers of individuals ranged from 8 to 130.

3.5 The distribution pattern of individuals was different. At Transect B, the number of organisms was much lower than on Transect A.

3.6 Generally, Snail *Nodilittorina radiata* (**Photo plate 1**), *Monodonta labio*, and Limpet *Cellana grata*, were the common species on the site and were recorded on both transects. *Monodonta labio* was the dominant species at the lower tidal level, while *Nodilittorina radiata* was dominant at the higher tidal level.

3.7 Besides the fauna recorded on the transects, Acorn barnacle *Tetraclita squamosa* (**Photo plate 1**) which is a common barnacle species in Hong Kong was also found on the site.

3.8 No species of conservation importance or nursery/breeding activities was observed or recorded on the site.

Table 1 Data of the transect survey at Kellet Island

Transect	A							B						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Quadrats														
Scientific name														
<i>Cellana grata</i>						15								5
<i>Monodonta labio</i>						15	60						10	30
<i>Nodilittorina radiata</i>			130	100	50	50								
<i>Nerita chanaeleon</i>					8	11							5	
<i>Capitulum mitella</i>					20									
Taxa	5							3						
Individuals	459							50						

4. Discussion

4.1 The ecological evaluation of the shore at Kellet Island is presented in **Table 2** below. From the study, rocky shore at Kellet Island exhibits a low epifauna diversity and species richness. The ecological value is low when compared to the natural rocky shores in Hong Kong.

Table 2 Evaluation of the intertidal habitat at Kellet Island

Criteria	Evaluation
Naturalness	Low. This is the only remaining natural coastline in the area. Half of this rocky hard shore site was covered by large-sized boulders while the another half covered by cobbles and old concretes. Although the site is basically natural and physically intact, its naturalness has been partly affected by past construction and reclamation at both ends and is low.
Size	Small. Hard shore covers a total length of less than 100m.
Diversity	Low diversity epifauna community, supporting a range of common species – mainly gastropods.

Criteria	Evaluation
Rarity	The hard shore habitat is not rare and there were no rare species present.
Re-creatability	Can be recreated using boulder seawall.
Fragmentation	Fragmented by previous reclamations at Causeway Bay and breakwaters for typhoon shelter to the east and west.
Linkage	Ecological linkage was not observed.
Potential Value	Potential value is limited due to factors including narrow shore length and depth, and disturbance from nearby human activities.
Nursery / Breeding Ground	No special value as nursery/breeding ground was found.
Age	N/A
Wildlife Abundance / Richness	High abundance of gastropods, but low species richness.
Ecological Value	Low value.

END

Figure 1 Transect A and Transect B at Kellet Island

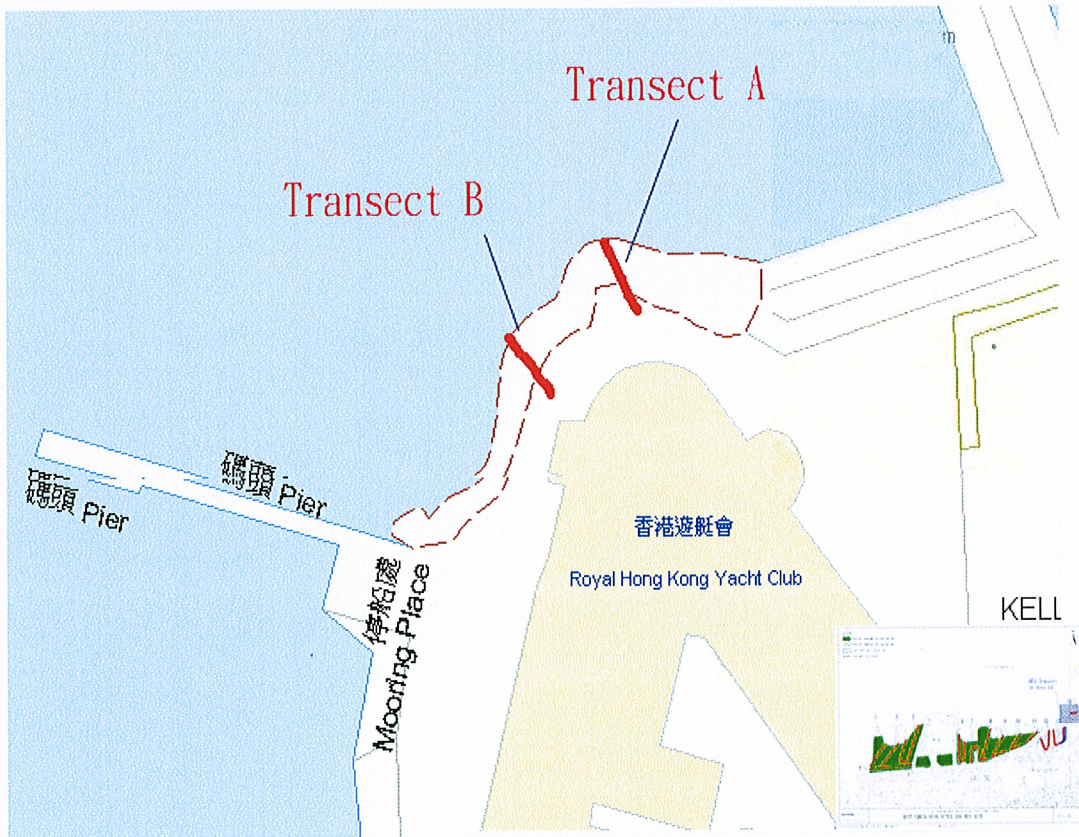


Photo Plate 1

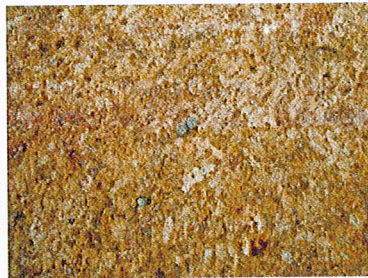
Photo Plate 1 - Kellet Island Intertidal Survey



The surveyed Site



Vertical seawall nearby



Nodilittorina radiata



Breakwater nearby



Cellana grata



Eastern part of the site



Tetraclita squamosa



Western part of the site

