

# Task Force on Water-land Interface

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For discussion  
on 2 June 2016

TFWL/02/2016

## **An Overview of Railing Design along Victoria Harbourfront**

### **PURPOSE**

This paper gives Members an overview of the design of existing railing along promenades at Victoria Harbourfront and welcomes Members' views on possible enhancement of railing design for improving water-land interface.

### **GENERAL DESIGN OF WATERFRONT RAILING**

2. Along the 73km harbourfront shoreline, there is around 19km with promenades built and completed for public enjoyment<sup>1</sup>. A common element at all promenades is the railing along the contour facing the harbour. With the unique design theme of each waterfront open space in different locales built at different phases, there emerges an interesting assortment and variety of railing along the harbourfront. Notwithstanding their variety, there are in general a few design aspects shared by all railings along existing promenades.

#### General Design Requirements

3. According to Regulation 8 of the Building (Construction) Regulations (Cap 123B) (B(C)R), where there is a difference in adjacent levels greater than 600 mm, protective barriers<sup>2</sup> shall be

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<sup>1</sup> For reference purpose, amongst the 73km harbourfront area, around half is used for ferry piers, cruise terminals, container terminals, public cargo working areas and other port related uses. The remaining 15km, including areas in Wan Chai North, North Point, Kai Tak, Cha Kwo Ling and Yau Tong Bay, have been planned with promenade for gradual development in the long run.

<sup>2</sup> Such protective barriers shall be:

- (i) designed and constructed to minimize the risk of persons or objects falling, rolling, sliding or slipping through gaps in the barrier, or persons climbing over the barrier;
- (ii) at a height above the higher of the adjacent levels of not less than 1.1 m;
- (iii) constructed as to inhibit the passage of articles more than 100 mm in their smallest

provided to restrict or control the movement of persons and vehicles. The prime function of such a protective barrier is to prevent persons or objects from passing through or toppling over onto an adjacent lower level. While there are no specific guidelines governing the design of balustrade and railing along public waterfront promenades per se, Buildings Department (BD)'s requirements on protective barriers normally serve as reference in such design.

### Choice of Building Materials

4. In terms of building materials, stainless steel, galvanized metal steel (GMS), wire mesh and tempered glass are four of the most common types used for waterfront balustrade and railing in Hong Kong. Each of them has its own merits and demerits, and when deciding the suitable material for a particular waterfront, considerations are given in relation to the location and particulars of the promenade. For instance, metal materials, although less costly, are more prone to rusting and may reduce visual attractiveness slowly with time. On the other hand, tempered glass is treasured for its transparency and visual appeal and is considered more suitable for promenade facing a relatively calm sea surface such as Kwun Tong Promenade. For waterfront locations where wind loads and wave force are strong, more robust and less costly materials such as stainless steel and GMS would be preferable.

## **CURRENT SITUATION ALONG THE HARBOURFRONT**

5. For Members' reference, six waterfront promenades with distinctive railing designs are selected and described below in chronological order according to their completion time. A plan indicating the locations of the selected promenades is at **Annex A** for reference.

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- dimension;
- (iv) the lowest 150mm of the barrier should be built solid (except for inaccessible roof, staircases enclosed with walls and without open stair-well); and
  - (v) designed to resist the imposed loads as prescribed in Table 3 of regulation 17 of the B(C)R.

### ***Design of Railing***

6. It is useful to see how railings are designed in relation to the characteristics and amenities provided on each promenade and how some of the design aspects have gradually transformed as time progresses.

#### Tsing Yi Promenade<sup>3</sup>

7. The northern and eastern parts of Tsing Yi waterfront have been developed at different stages by various Government departments, private developers and MTR Corporation Limited. The resultant variety of railing designs along the promenade has become one of its unique features. Tsing Yi Promenade has an extensive length of 1.8 km and unlike other stretches of promenades along the harbourfront, it is abutted by a sloping seawall with rocks and pebbles gradating towards the sea. As seen from the images at **Annex B**, a stainless steel balustrade, with some design variations at each section, is erected at majority of the seafront edge. A comparatively higher concrete balustrade along the Maritime Square portion, which was built earlier in 1998 than other parts of Tsing Yi Promenade, stands out differently.

#### Tsim Sha Tsui Waterfront

8. Tsim Sha Tsui waterfront stretches from the Star Ferry Pier at the west to Tsim Sha Tsui East leading towards Hung Hom, totalling 1.6 km in length. The subject waterfront promenade was opened for public enjoyment in 1980s along with its adjacent Hong Kong Cultural Centre. Enhancement works for the promenade were conducted in the interlude but the original railing is continued for use at present. Images of the railing can be found at **Annex C** for reference. Built with granite, the railing slates gently inwards to the land with a steel ledge added over. Although not its initial design intention, the railing design has permitted it to serve another

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<sup>3</sup> As illustrated at **Annex B**, Tsing Yi Promenade refers to the waterfront area at the northeastern side of Tsing Yi facing Rambler Channel. It comprises five sections built at various stages and is currently under the management of LCSD. From north to west, the five sections include Villa Esplanada Portion (completed in 2002); Piazza Portion (completed in 2004); Maritime Square Portion (Tierra Verde) (completed in 1998); Tsing Yi Sports Ground Portion (completed in 2004) and Grand Horizon Portion (completed in 2001).

function as seating for the public and tourists.

### Central & Western District Promenade (Central Section)

9. Constructed as an advance promenade, the Central & Western District Promenade (Central Section) was completed in Q3 2011. It was approximately 600m long, extending from Central Pier No. 10 in the west to merge with the open space area fronting Tamar Park in the east. The railing of the promenade was constructed during Central Reclamation Phase III. As shown at **Annex D**, the balustrade sits at the very edge of the waterfront directly on top the vertical seawall concrete coping. Despite its different structural shape and appearance, it was built with a stainless steel posts with a tube handrail connected at the top similar to that at Tsim Sha Tsui waterfront.

### Quarry Bay Promenade

10. Quarry Bay Promenade along Hoi Yu Street was built and completed in 2012 to link with the waterfront edge of Quarry Bay Park (Phase 1). A simple railing design with GMS wire mesh with a hardwood handrail was adopted along the 500m-long promenade. With its provision of a pet garden and growing popularity among pet owners, an additional row of white barriers was subsequently attached to the bottom part of the railing to avoid small pets from slipping into the water. As illustrated at **Annex E**, such barriers were not added for parts of the promenade where pets are not allowed in.

### Hoi Fai Road Promenade

11. The subject promenade in Tai Kok Tsui is a relatively short section of waterfront (200m long) near Hoi Fai Road Garden and the promenades adjoining residential sites in the further south. It was opened for public enjoyment more recently in late 2014. Similar with other promenades in its vicinity and also sections of Tsing Yi Promenade completed in 2000s, the waterfront railing at Hoi Fai Road Promenade is constructed with stainless steel, comprising of posts with thin rods at 100mm horizontal interval and a handrail connected at the top. Such design increases permeability with the

sea. Images are at **Annex F** for reference.

### Kwun Tong Promenade

12. Kwun Tong Promenade, being the most recently completed waterfront promenade, is the first to have a tempered glass balustrade installed. The design concept of the promenade emphasised openness, transparency, green and urban connectivity. The glass balustrade, made possible by the calm waterbody of the adjoining typhoon shelter, maximises visual permeability and creates a neat and tidy appearance for the promenade (**Annex G**).

### Other Waterfront Areas

13. Although not developed as a promenade, the existing three berths at the Western District Public Cargo Working Area (PCWA) has been one of the popular harbourfront locations frequented by local residents and no railing is provided thereat. Some Members also raised at the Harbourfront Commission meeting in April 2016 that this area could be a case study for further assessing management models of waterfront open space and water-land interface in the future. The existing site condition of the subject PCWA under a no-railing setting is shown at **Annex H**.

### ***Interface with Marine-related Facilities***

14. Apart from height and building materials of waterfront railings, their interface with existing marine-related facilities at the sea edge, such as public landing steps, piers and bollards, are also important from the perspective of water-land interface enhancement.

15. In this connection, Tsing Yi Promenade is highlighted as a case for reference. There are at present five sets of public landing steps and piers along the subject waterfront. Where these public landing facilities and bollards are present, the railing was erected at a slightly set-back position, creating a semi-platform atop the sloping seawall which in turn becomes a space for seating and angling by some patrons. Likewise, the railing at Tai Kok Tsui waterfront was set back to enable berthing of vessels with bollards and embarkation with landing steps. These facilities are currently used by the Marine Department for vessel inspection. For

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Members' reference, images of the existing arrangements at these two promenades are at **Annex I**.

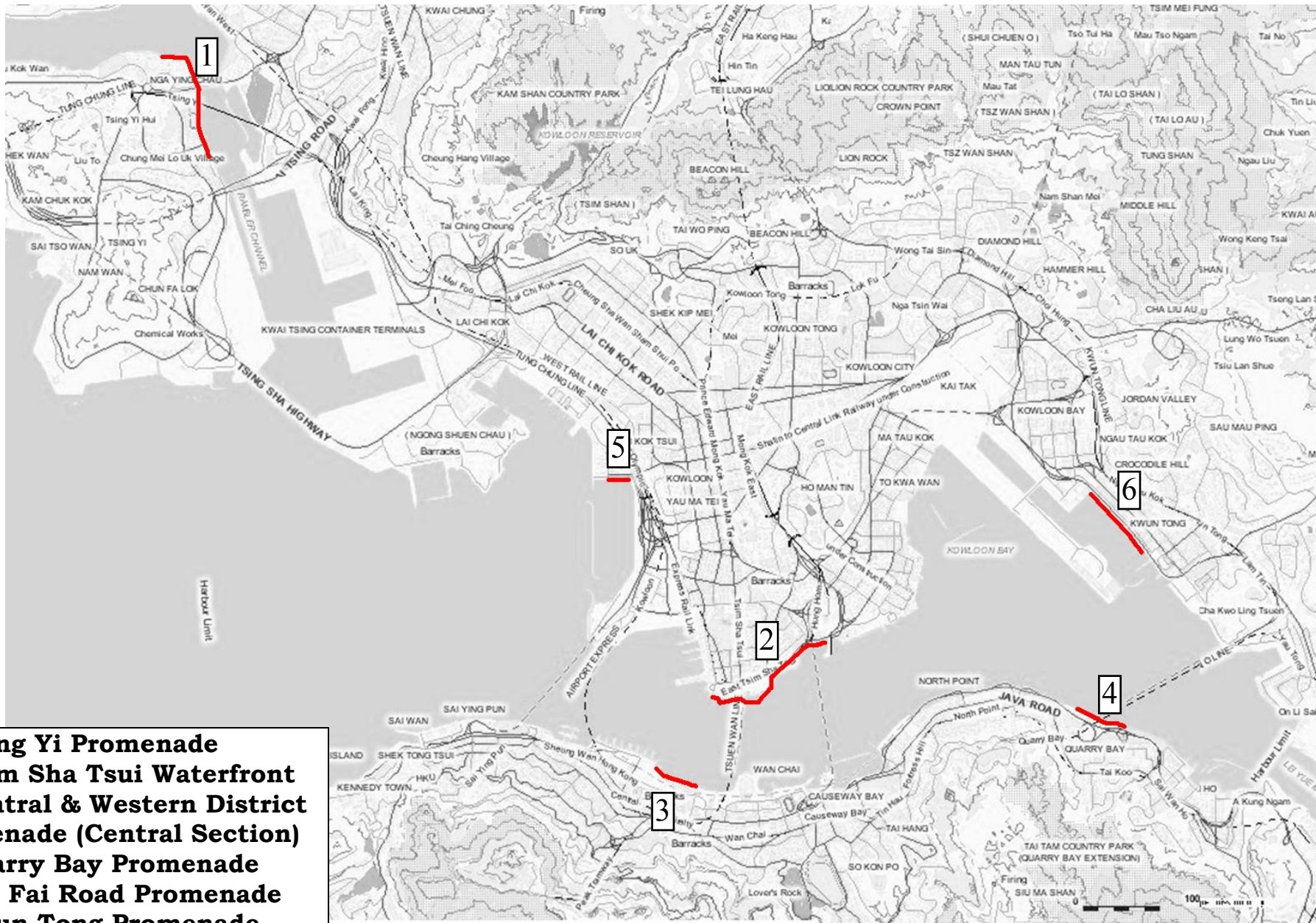
### **ADVICE SOUGHT**

16. Waterfront railing and balustrade defines the relationship between the land and the water and has visible influence on the overall ambience of a promenade. The structural design of railings as protective barriers involves technical considerations pertinent to the surrounding environment of individual promenades. While detailed design of waterfront railing would be tailored to match with the theme of specific promenade, we witness how with time, considerations have started to be given equally to practicality and design perspectives. With around 15km of harbourfront area planned to be developed as promenade in the years to come, there is scope to think about how design of waterfront railing could be further enhanced, for example in relation to existing marine facilities, seawall, sea condition, possible pet access and cycle track, with a view to improving water-land interface around the Harbour.

17. Members are advised to note the current situation of waterfront railing around Victoria Harbour and to give views on possible enhancement for the design of railing at future harbourfront promenade.

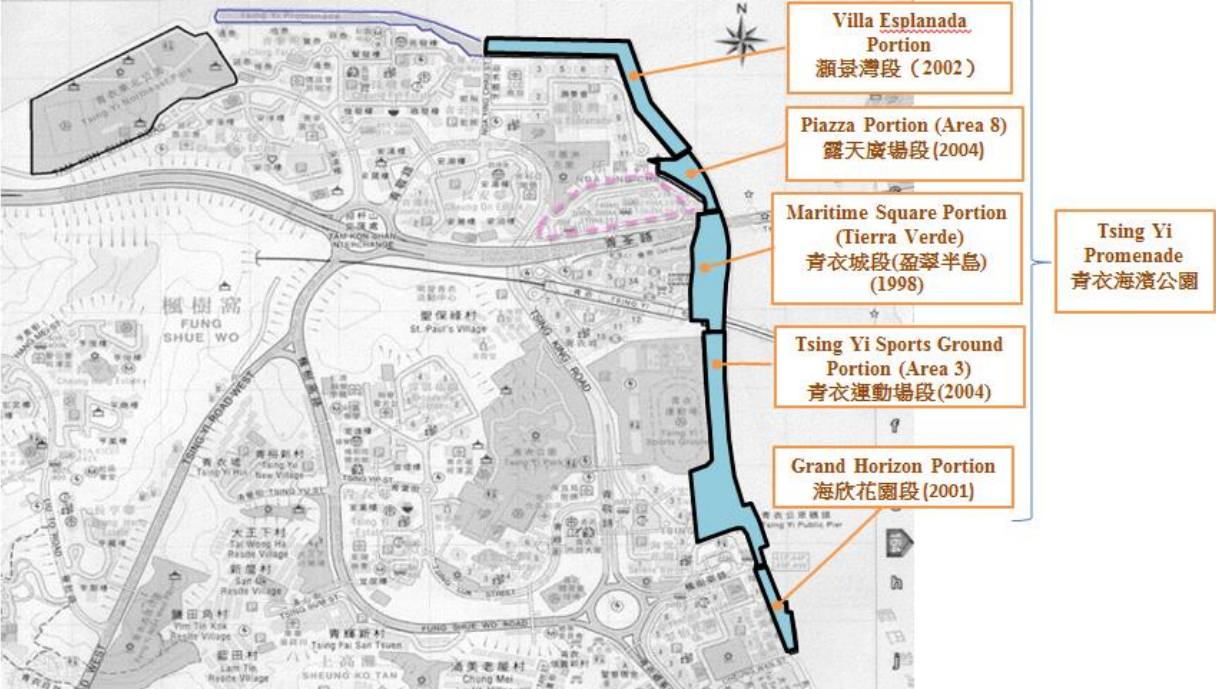
**Development Bureau  
June 2016**

**Locations of Selected Promenades with Distinctive Railing Designs**

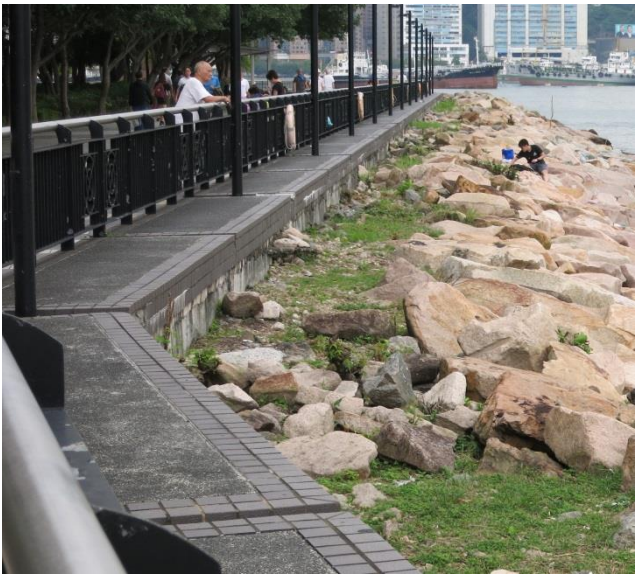


- 1. Tsing Yi Promenade**
- 2. Tsim Sha Tsui Waterfront**
- 3. Central & Western District Promenade (Central Section)**
- 4. Quarry Bay Promenade**
- 5. Hoi Fai Road Promenade**
- 6. Kwun Tong Promenade**

**Railing at Tsing Yi Promenade**



**Villa Esplanada Portion**





## Piazza Portion



## Maritime Square Portion (Tierra Verde)



## **Tsing Yi Sports Ground Portion**



## **Grand Horizon Portion**



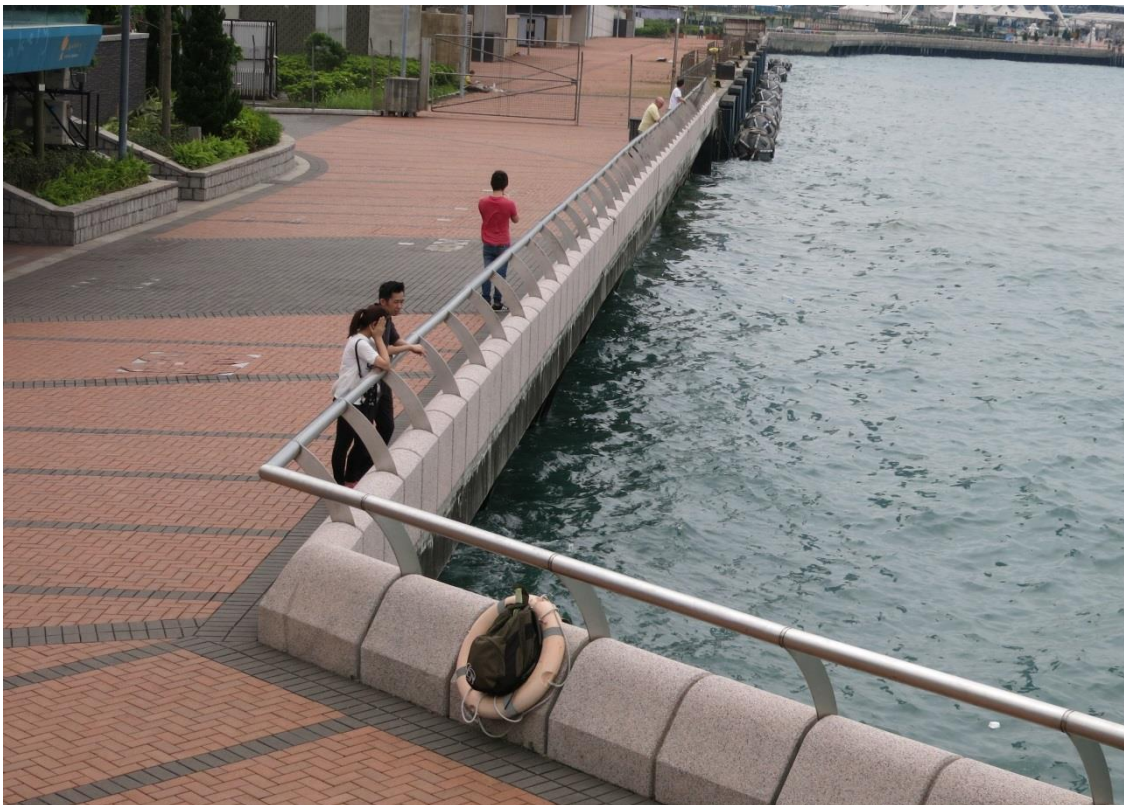
**Annex C**

**Railing at Tsim Sha Tsui Waterfront**



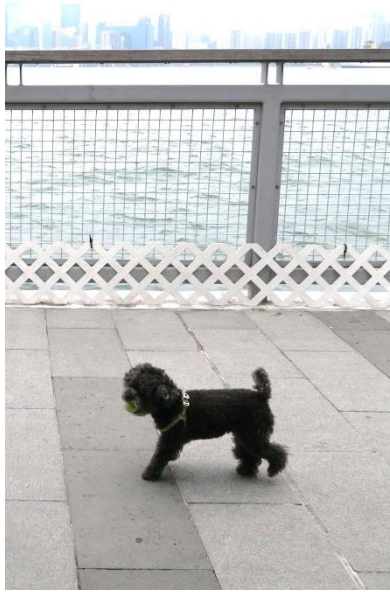
**Annex D**

**Railing at Central & Western District  
Promenade (Central Section)**



**Annex E**

**Railing at Quarry Bay Promenade**



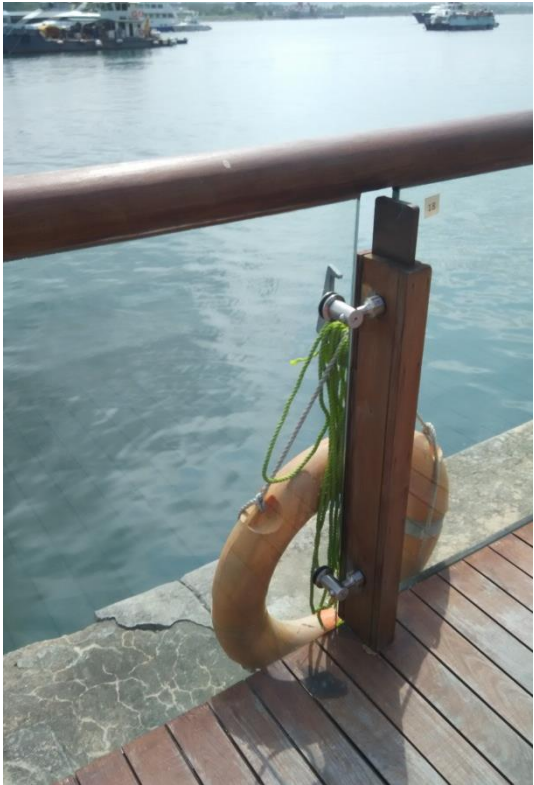
**Railing at Hoi Fai Road Promenade**



**Waterfront Railings at Neighbouring Private Residential Sites –**

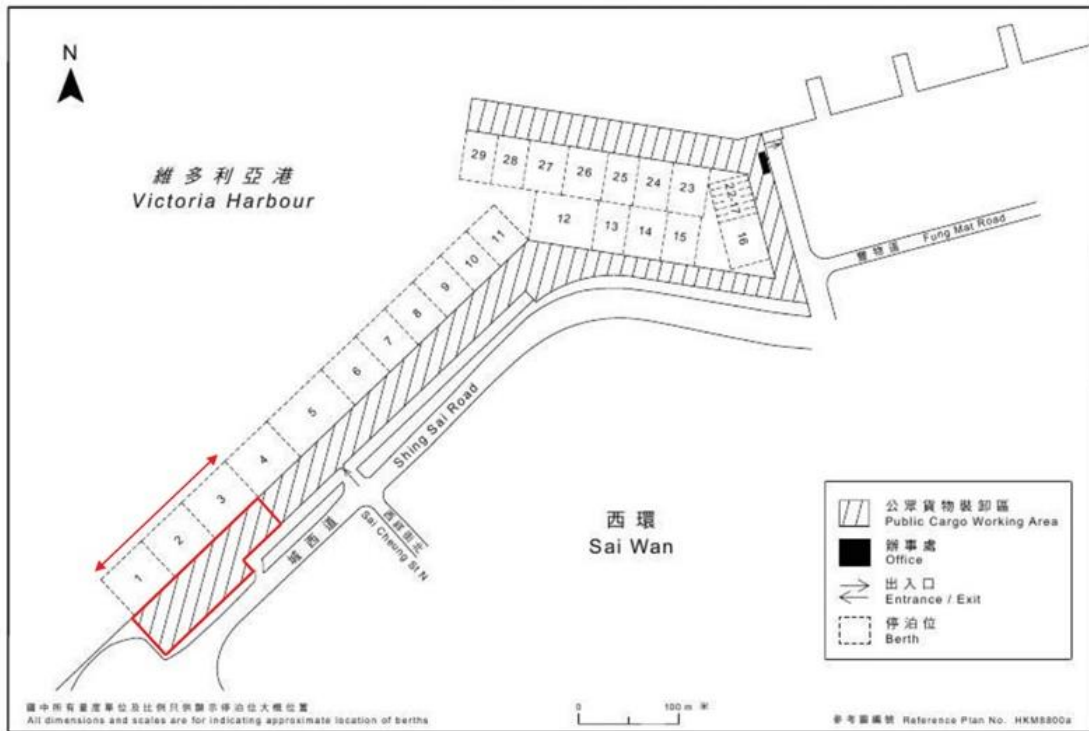


**Railing at Kwun Tong Promenade**



## Annex H

### Western District Public Cargo Working Area





## Annex I

### Interface with Marine-related Facilities

#### Tsing Yi Promenade –



#### Hoi Fai Road Promenade –

