**For discussion**
**on 19 June 2012**

**Legislative Council Panel on Transport**

# Retrofitting of Tactile Guide Paths, Dropped Kerbs and Tactile Warning Strips to Public Transport Facilities

## Purpose

This paper briefs Members on the latest progress of the retrofitting works undertaken by the Highways Department (HyD) in providing "tactile guide paths", "dropped kerbs" and "tactile warning strips" in public transport facilities to assist people with disabilities (PWDs) to take public transport and make use of such facilities.

## Background

2. The Government strives to build a barrier-free environment and make improvement so as to enable PWDs to access to premises and transportation in a barrier-free manner. Regarding public transport facilities, the measures undertaken by HyD mainly include the retrofitting of "tactile guide paths", "dropped kerbs" and "tactile warning strips". The characteristics and background information concerning the three types of features mentioned above are set out below.

## Tactile Guide Paths, Dropped Kerbs and Tactile Warning Strips

"Tactile Guide Paths"

3. The Government has been maintaining close communications with the disabled groups and has been installing "tactile guide paths" on footpaths in accordance with the practical needs, leading persons with visual impairment to many public facilities, such as hospitals, libraries, etc.

4. By making use of the tactile sense, "tactile guide paths" provide persons with visual impairment with a safe path and lead them to the final destination. "Tactile guide paths" are formed by three types of specially made "tactile tiles", namely "directional tiles", "hazard warning tiles" and "positional tiles". Layouts of these "tactile tiles" and the "tactile guide paths" are shown in Figures 1 and 2 of **Annex 1**. The characteristics of these tactile tiles are as follows:

(a) "Directional tiles" are the main components of "tactile guide

paths". The tiles, with its parallel raised bars, guide the users along an intended safe route. In general, standard "directional tiles" are squares of 300mm by 300mm with 4 raised bars of 5mm in height. A path of 300mm wide can be formed by lining up the "directional tiles" along the orientation of the raised bars.

(b) "Hazard warning tiles" have raised big dots arranged in square grid parallel to the sides of the slab for indication of the position and direction of potential hazards ahead. Standard "hazard warning tiles" are squares of 300mm by 300mm in general. Each tile carries 36 raised big dots (35mm in diameter and 5mm in height) in a 6 by 6 matrix. "Hazard warning tiles" can be used alone to form "tactile warning strips" at the top and bottom of staircases or ramps, and at "dropped kerbs".

(c) "Positional tiles" have raised small dots placed in staggered positions. "Positional tiles", connecting the "directional tiles", are normally arranged in square grid and are provided at both ends and all turning points of the "tactile guide paths" for indication of possible change in walking directions ahead. Standard "positional tiles" are squares of 300mm by 300mm in general. Each "positional tile" carries 41 small dots (23mm in diameter and 5mm in height). The size, number and array of the dots are different in "positional tiles" and "hazard warning tiles", enabling visually impaired persons to identify the types of tiles easily.

5. The "tactile tiles" adopted by HyD are mainly precast concrete type and ceramic type. Precast concrete type tactile blocks are about 60mm thick, and are used for concrete or paved footways in general. Ceramic type tactile tiles which are about 8mm thick are commonly used at highway structures such as footbridges and subways, and any other locations where the use of precast concrete type tactile blocks is not practicable. The tactile warning tiles are made of non-slippery materials in visual contrast with the adjoining surfaces to provide a clear indication to persons with visual impairment.

<u>"Dropped Kerbs"</u>

6. "Dropped kerbs" are provided at the edges of footways to overcome the inconvenience and potential hazard arising from difference in height of footways and carriageways for wheelchair users, allowing them to cross the roads conveniently and safely. "Tactile warning strips" are provided on the dropped kerbs to notify the presence of carriageways. In fact, "dropped kerbs" are not only used by wheelchair users, others in need such as pedestrians with baby prams or shopping carts are also benefited. Standard "dropped kerbs" are not less than 1.2m in length and 1.2m in width with ramps at a gradient not steeper than 1 in 10. A clearance of 0.8m long at the back of the dropped kerb is provided. Layout of "dropped kerbs" and related 'tactile

warning strips" are shown in Figure 3 of **Annex 1**.

"Tactile Warning Strips"

7. "Tactile warning strips" are formed by one line or two lines of "hazard warning tiles". "Tactile warning strips" are often found at the top and bottom of staircases or ramps, and at "dropped kerbs". By touching the "tactile warning strips", the persons with visual impairment are directed to the crossing facilities or are alerted of the change in height and potential hazard (e.g. carriageway) ahead. "Tactile warning strips" are installed such that the "hazard warning tiles" are positioned parallel to the edge of footpaths, along the orientation of the pedestrian crossings or other locations of potential hazard such as carriageway, pedestrian crossings or other potential hazard as appropriate.

8. Photographs of various types of "tactile tiles", "tactile guide paths", "dropped kerbs" and "tactile warning strips" are shown in **Annex 2**.

## Retrofitting Works at Public Transport Facilities

9. The Government has been retrofitting barrier-free access facilities at footpaths and crossings with practical needs, as well as some existing and newly constructed public transport facilities including public transport interchanges, public bus / light bus termini, footbridges and subways for PWDs. The Government will continue to adopt the related policy in full steam, and extend the scope of enhancement of barrier-free access facilities to other public transport facilities including public transport interchanges, public bus / light bus termini, footbridges and subways, so as to further facilitate PWDs to utilize such facilities and reach their destinations in a barrier-free manner. The Government has been maintaining close communication with the disabled groups on the implementation of the above retrofitting works.

10. As there are more public vehicles parking at and maneuvering within public transport interchanges and public bus / light bus termini, traffic conditions are more complicated than that in common road surfaces. This poses danger to PWDs, especially wheelchair users and persons with visual impairment. HyD is now retrofitting "tactile guide paths", "dropped kerbs" and "tactile warning strips" at those public transport facilities to provide appropriate instructions to the users concerned. We believe that a safer and more convenient access to the premises mentioned above can be provided to PWDs upon completion of the above improvement works. Without the need for assistance, they will be able to reach the waiting areas easily and to take various kinds of public transports, thereby being able to travel to destinations further away.

11. In addition, HyD is currently retrofitting "tactile warning strips" at the top and bottom of the staircases or ramps of existing footbridges and subways,

warning persons with visual impairment of the change in level ahead. Upon completion of the improvement works mentioned above, it will be easier for persons with visual impairment to utilize the road crossing facilities to commute further, thus lifting the limitations in their daily life activities.

## Progress of Current Retrofitting Programme

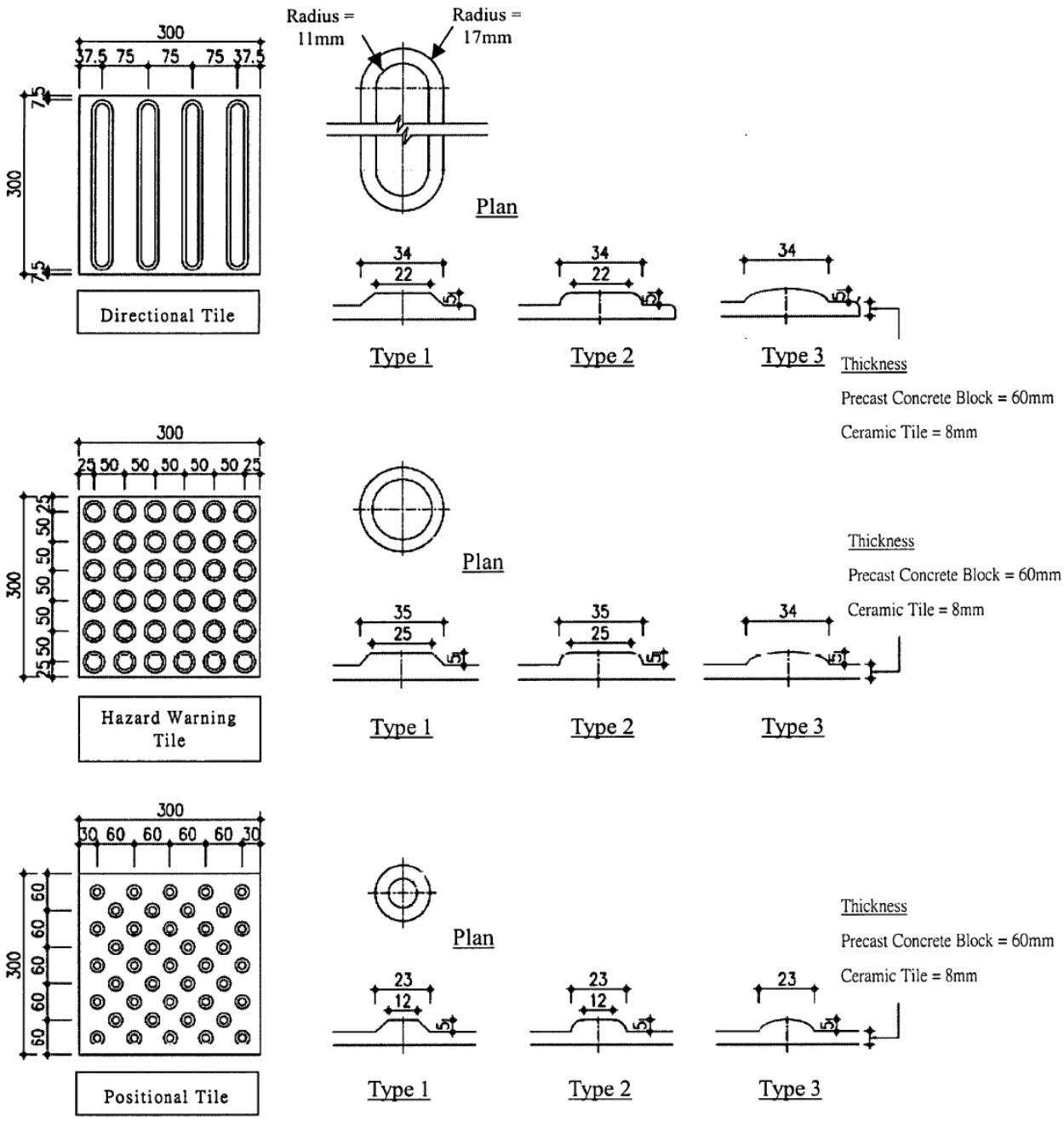
12. At present, site inspections and feasibility studies for most of the existing public transport facilities have been conducted, and a retrofitting programme has been worked out. Arrangements have been made to retrofit "tactile guide paths", "dropped kerbs" and "tactile warning strips" at 148 public transport interchanges and public bus / light bus termini and 601 footbridges and subways as soon as possible, so as to facilitate PWDs to utilize such access / facilities.

13. According to the scheduled implementation programme, HyD will complete the retrofitting works at 111 public transport interchanges and public bus / light bus termini and 461 footbridges and subways by mid-2012.

14. On account of factors such as utilization rate, scale of retrofitting works, planned large scale renovation programme, operational need and technical constraints of some public transport facilities, HyD anticipated that the rest of the retrofitting works at 37 public transport interchanges and public bus / light bus termini and 140 footbridges and subways can be completed by mid-2014. The Government will continue to closely monitor the progress of such works.

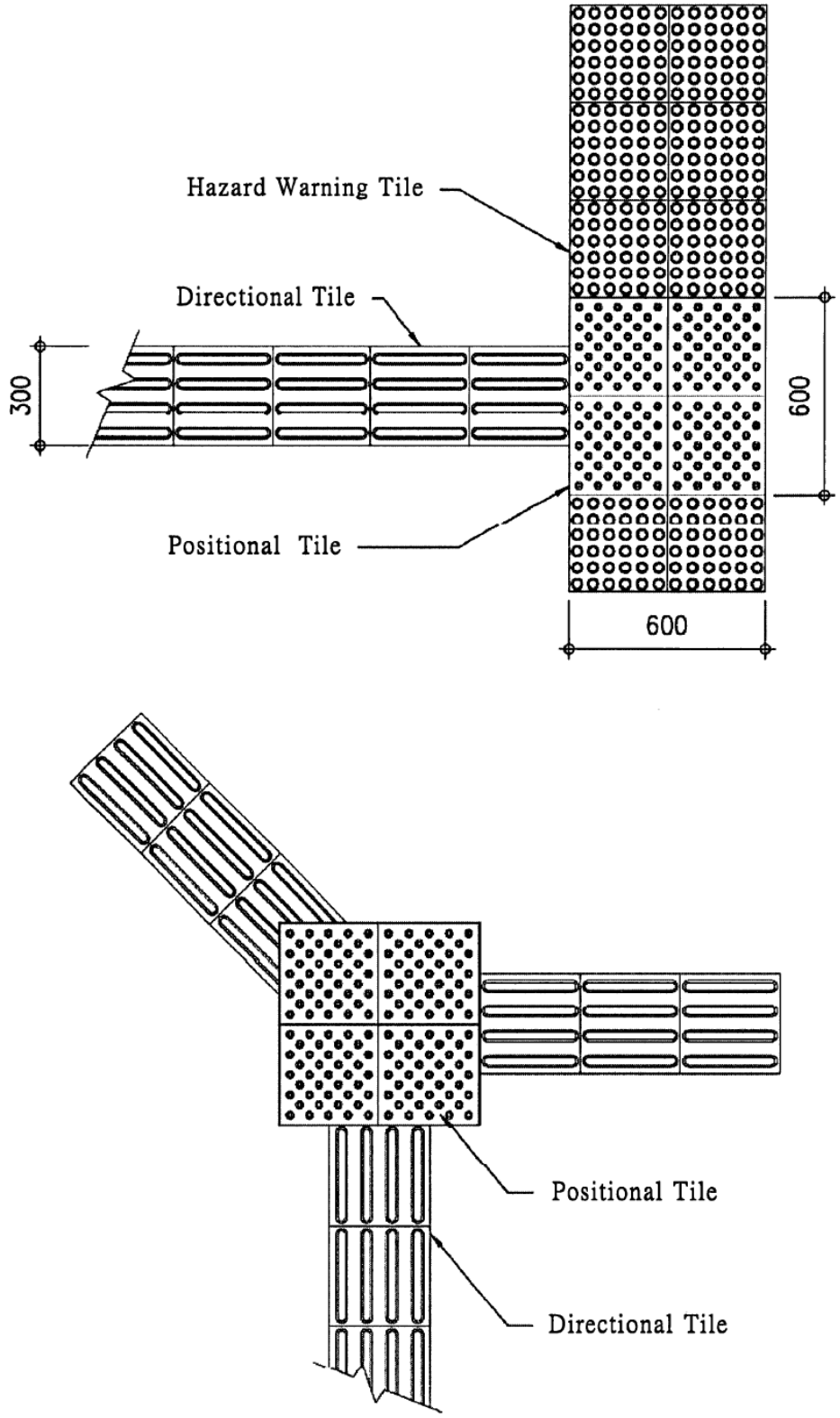
**Highways Department**
**June 2012**

## Annex 1



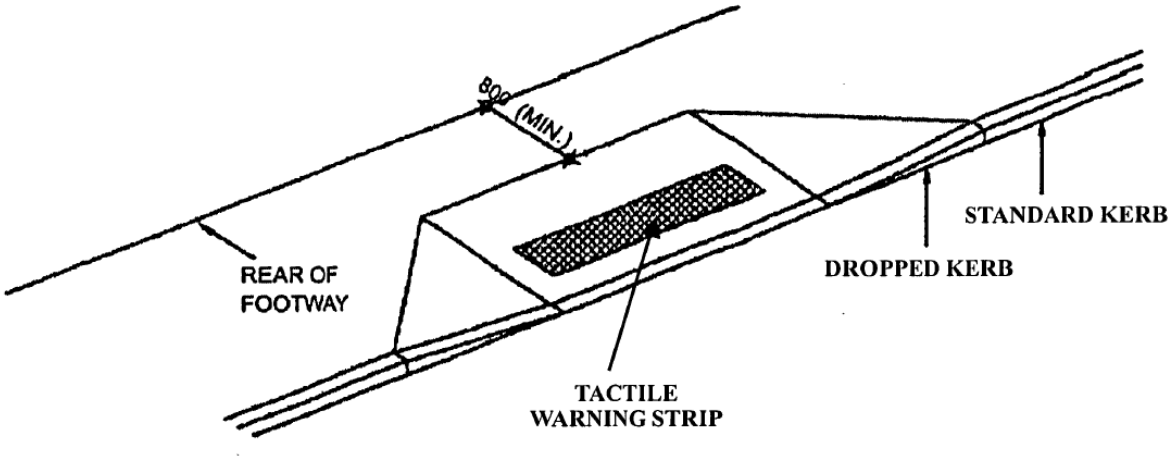

*** All dimensions are in millimetres**

**Figure 1 – Layouts of Various Tactile Warning Tiles**




*** All dimensions are in millimetres**

**Figure 2 – Composite Layouts of Tactile Guide Paths**




*** All dimensions are in millimetres**

**Figure 3 - Composite Layout of Dropped Kerb and Tactile Warning Strip**

**Annex 2**

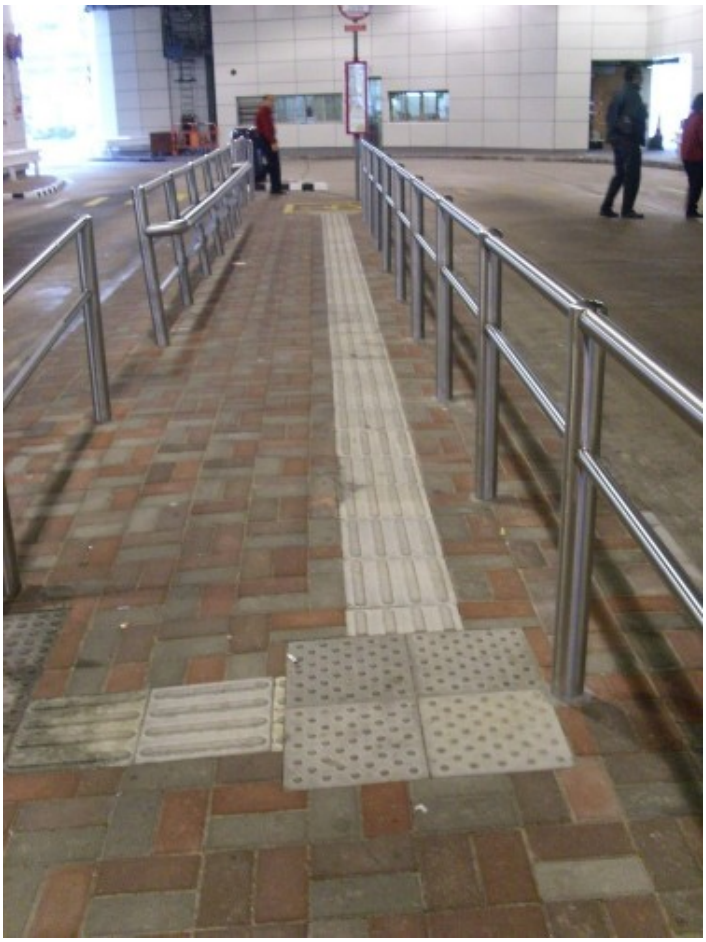



**Figure 1 – Photos of Tactile Guide Paths**

**Figure 2 – Photos of Dropped Kerbs and Tactile Warning Strips**

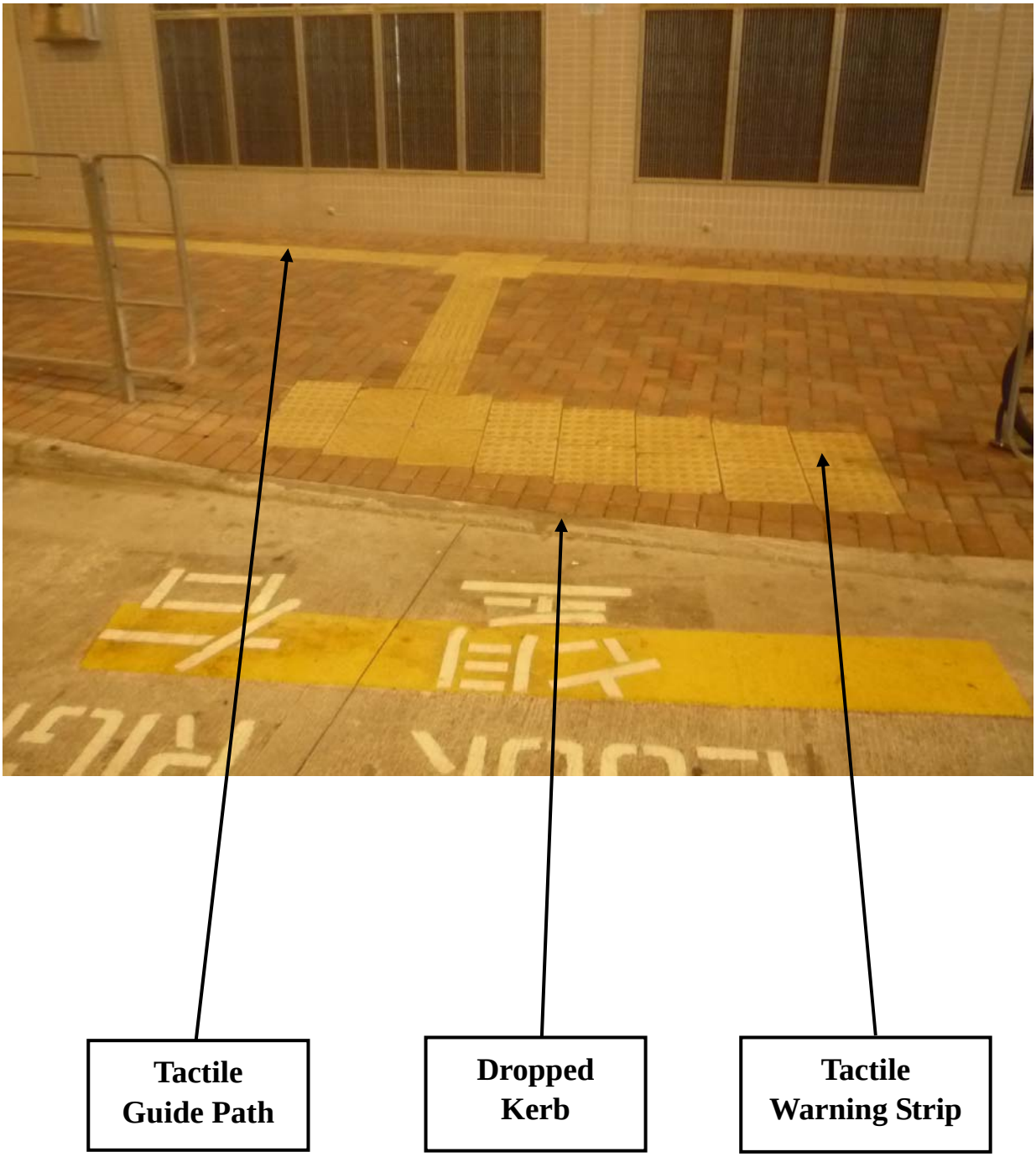



**Figure 3 – Retrofitting of Tactile Guide Paths, Dropped Kerbs and Tactile Warning Strips at Public Transport Interchange and Public Bus / Light Bus Termini**

**Figure 4 – Retrofitting of Tactile Warning Strips at Footbridges and Subways**