Protecting Your Premise from Flood Damages

An Easy Guide – for reference of property managers and owners

This Advisory Note (AN) provides general information on good practices in maintaining the stormwater drainage system and simple methods to minimize flood damages. The drawings provided are also illustrative only. Users of the AN shall satisfy themselves that the suggested measures are applicable to their cases taking into account the actual site conditions. In case of doubt, professionals should be consulted.

1 Why it is Important to You

— It is the property owners' and managers' responsibility to maintain their own drains.

— Improper maintenance may cause flooding and subsequent damages.

— This Advisory Note provides information on good practices in maintaining the drainage system and introduces simple ways to minimize flood damages.

2 Know Your Own Drainage System

— It is important for you to familiarize yourselves with the drainage system under your maintenance responsibility and keep records of your drainage system. This information can normally be obtained from building plans or lease conditions.

— In general, the drainage system comprises of the followings (See Figure 1):

- drainage inlets, u-channels, peripheral drains, catchpits, terminal manholes, manholes, underground pipes/culverts, etc; and
- special drainage facilities such as pumps, pump pits, storage or retention facilities, if any.

— Consult qualified professionals if necessary.

3 How to Inspect and Maintain Your Drains

A. For surface drains above ground (e.g. drainage inlets, u-channels, peripheral drains, catchpits)

— Check visually that they are free from silt/vegetation/rubbish/debris.

— Clear silt/vegetation/rubbish/debris, if any.

— Can normally be carried out by experienced property maintenance staff.

B. For underground drains (e.g. manholes, underground pipes/culverts)

— Clearance of manholes may normally be carried out by spooning and rodding.

— Clearance of underground pipes normally requires special equipment like rodding, winching or water jetting.

— Closed-circuit television technique may be required for inspection of internal condition of underground drains.

— All the above operations should be carried out by competent drainage maintenance agents or contractors.

— Hazardous gases may be encountered during inspection or maintenance of underground drainage system. These gases may be colourless and odorless and may cause explosion or suffocation. Normally, manholes, terminal manholes and underground pipes/culverts are classified as "confined space" under the Factories and Industrial Undertakings (Confined Spaces) Regulation. **For safety reason, any person without proper training and safety equipment and implementing necessary safety precautionary measures should NEVER enter into such confined space as manholes, terminal manholes and underground pipes/culverts.** A brief guide to the Factories and Industrial Undertakings (Confined Spaces) Regulation is available free of charge from the Labour Department. It can also be downloaded from the Labour Department's web site : http://www.info.gov.hk/labour/eng/public/index.htm.

C. For drains in the vicinity of slope (e.g. U-channels, catchpits)

— Refer to "Layman's Guide to Slope Maintenance" issued by Geotechnical Engineering Office. The publication can be obtained from District Offices. Alternatively, request can be made by writing to Geotechnical Engineering Office.

4 Frequency of Inspection/Cleansing

— At least once a year before onset of rainy season and every time after severe rainfall events.

— In particular for surface drains above ground including inlets, u-channels and catchpits, they are more susceptible to blockage by silt/vegetation/rubbish/debris. More regular inspection and cleansing should be carried out, preferably before and after every rainstorm event.

5 Drainage Problems Outside Your Premises

Drainage problems in the vicinity of your premises may affect your drainage system. You are encouraged to report such problems as follows :

— Blockage of roadside gullies – Food and Environmental Hygiene Department Complaint Hotline (tel. 2868 0000).

— Public drains or sewers – Drainage Services Department Complaint Hotline (tel. 2300 1110).

6 Protecting Your Properties

— In general, the followings are high risk areas susceptible to flooding :

- basement (e.g. car park, control room) (See Figure 2)
- downstream side of steep road or sloping area (See Figure 3)
- area close to natural watercourses (See Figure 4)

— In general, the followings are important facilities, of which damages by flooding may be serious :

- transformer room
- switching room
- lift
- fresh/salt water pump
- car park

— Identify high risk areas and important facilities in your premises and take appropriate precautionary measures. The followings are suggested ways to reduce damage in case of a flooding. Most of them are simple to implement but can reduce flood damage significantly.

  - dry flood proofing (e.g. Steps / ramp at entrance) (See Figure 5)
  - temporary dry flood proofing (e.g. stop-board) (See Figure 6)
  - wet flood proofing (e.g. Raise the level of electrical appliances/sockets)
  - portable flood pump for emergency use (e.g. submersible pump)

7 Prepare for the Wet Season

— Ensure that management staff and maintenance staff are familiar with the drainage system.

— Check that all drains are cleared from blockage and functioning properly.

— Check that flood proofing and pumping equipments are ready for use.

— Prepare Emergency Plan in case of severe rainstorm.

— Prepare Contingency Plan in case of flooding of important facilities.

— Conduct briefing or flooding drills to ensure that management staff and maintenance staff are familiar with the Emergency Plan and Contingency Plan.

— Consult qualified professionals if necessary.

— **Dial 999 for emergency cases involving risk to life and limbs.**

8 Maintenance Manual

It is the responsibility of the property managers and the owners to maintain their drainage system. Many property managers have their own manual for management and maintenance of the property. It is advisable to include the drainage aspect into the existing manual or prepare a separate one. The following information should be included in the manual :

— record plans of the drainage system;

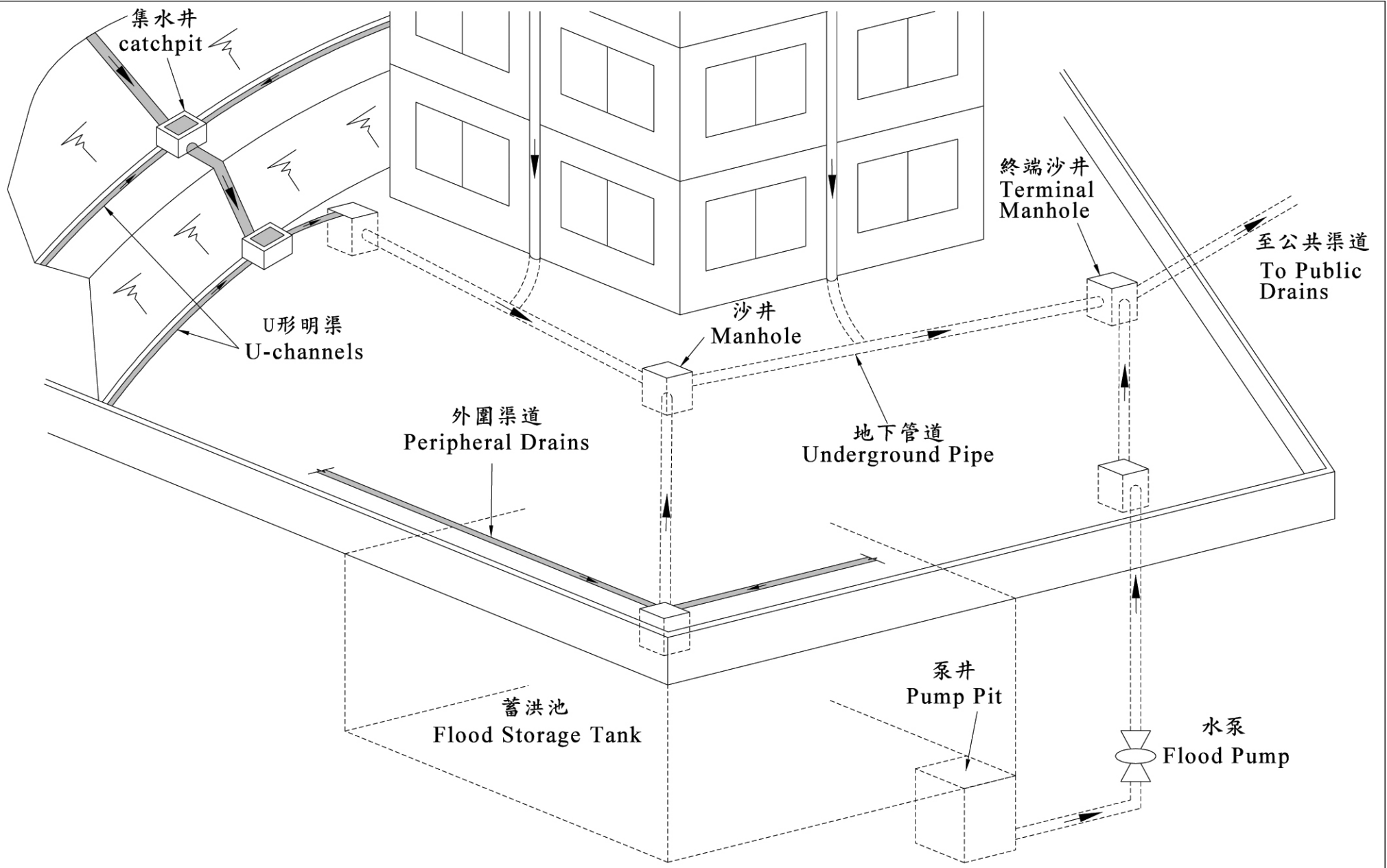
— list of high flood risk areas and important facilities;

— recommendations on the method and frequency of maintenance of drainage system;

— requirement to keep maintenance record of drainage system;

— emergency plan for severe rainstorm situation; and

— contingency plan for flooding of important facilities.



drawing title 圖則名稱

排水系統的常見部份
Common Components of a Drainage System

drawing no. 圖則編號	scale 比例	date 日期
圖一 Figure 1	不依比例 N.T.S.	二００三年四月 Apr 03

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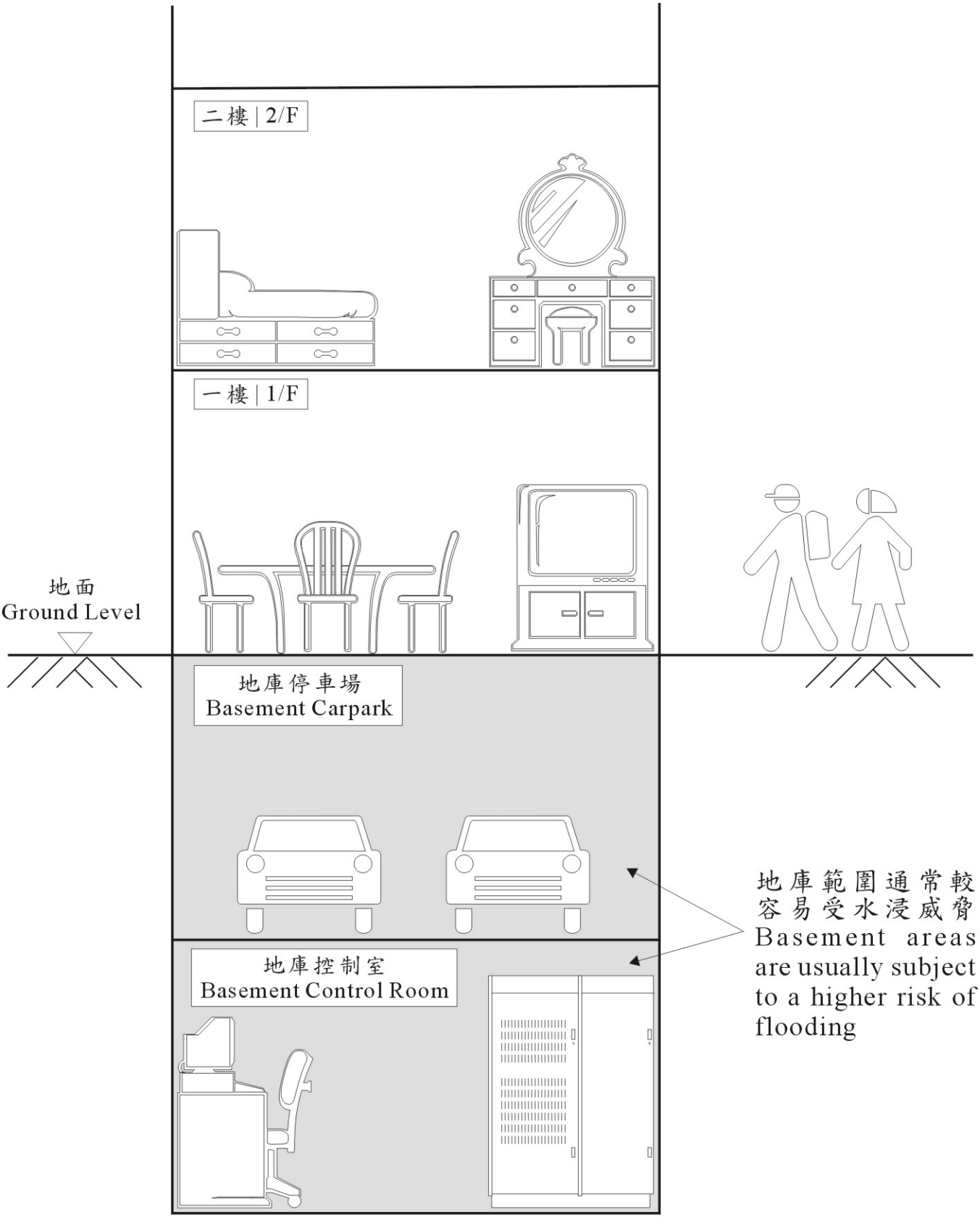
土地排水部
LAND DRAINAGE DIVISION

DRAINAGE SERVICES DEPARTMENT
渠務署



drawing title 圖則名稱

水浸高危地點的例子
Example of High-risk Area

drawing no. 圖則編號	scale 比例	date 日期
圖二 Figure 2	不依比例 N.T.S.	二００三年四月 Apr 03

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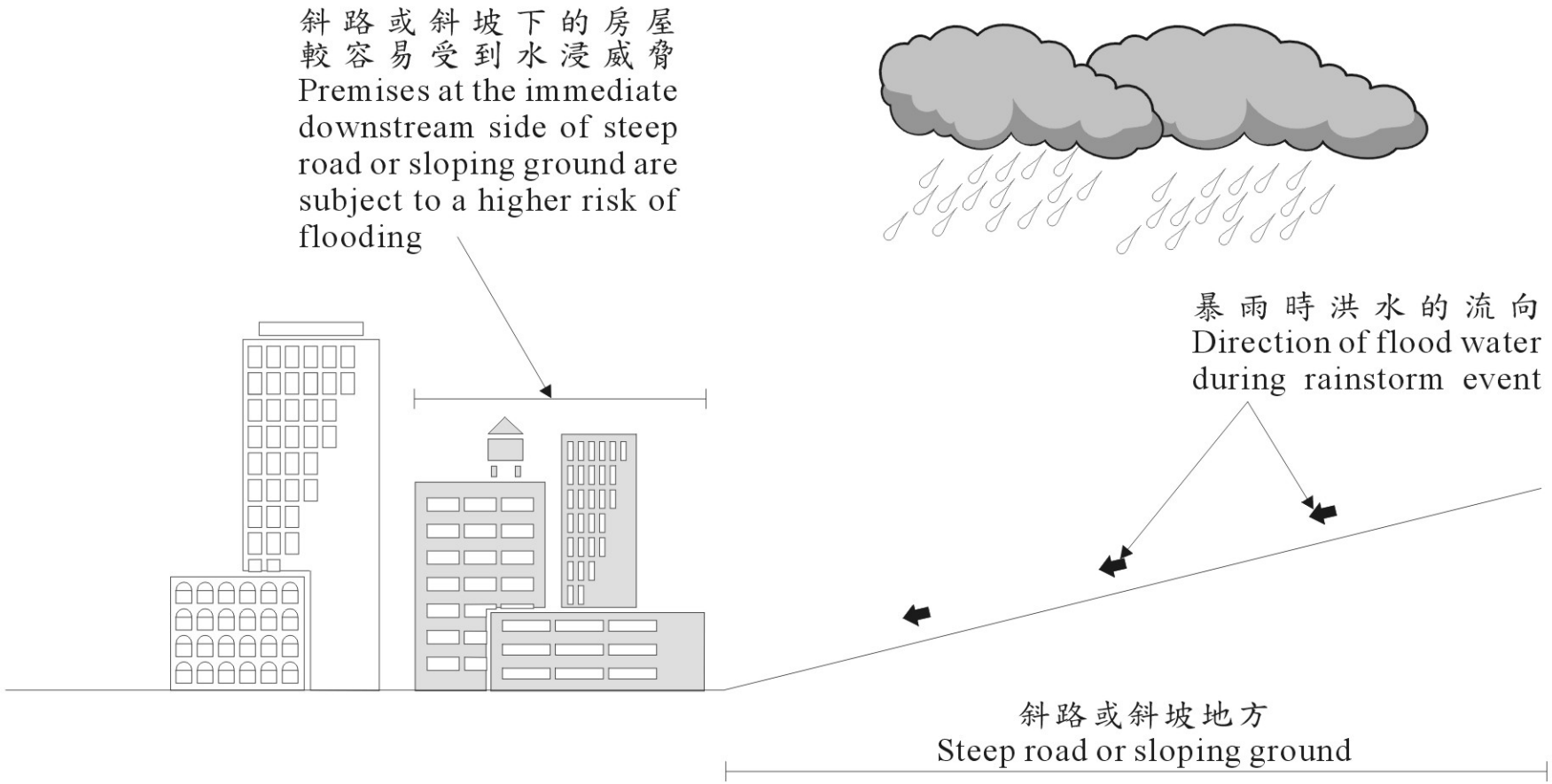

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水浸高危地點的例子
Example of High-risk Area

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圖三 Figure 3	不依比例 N.T.S.	二００三年四月 Apr 03

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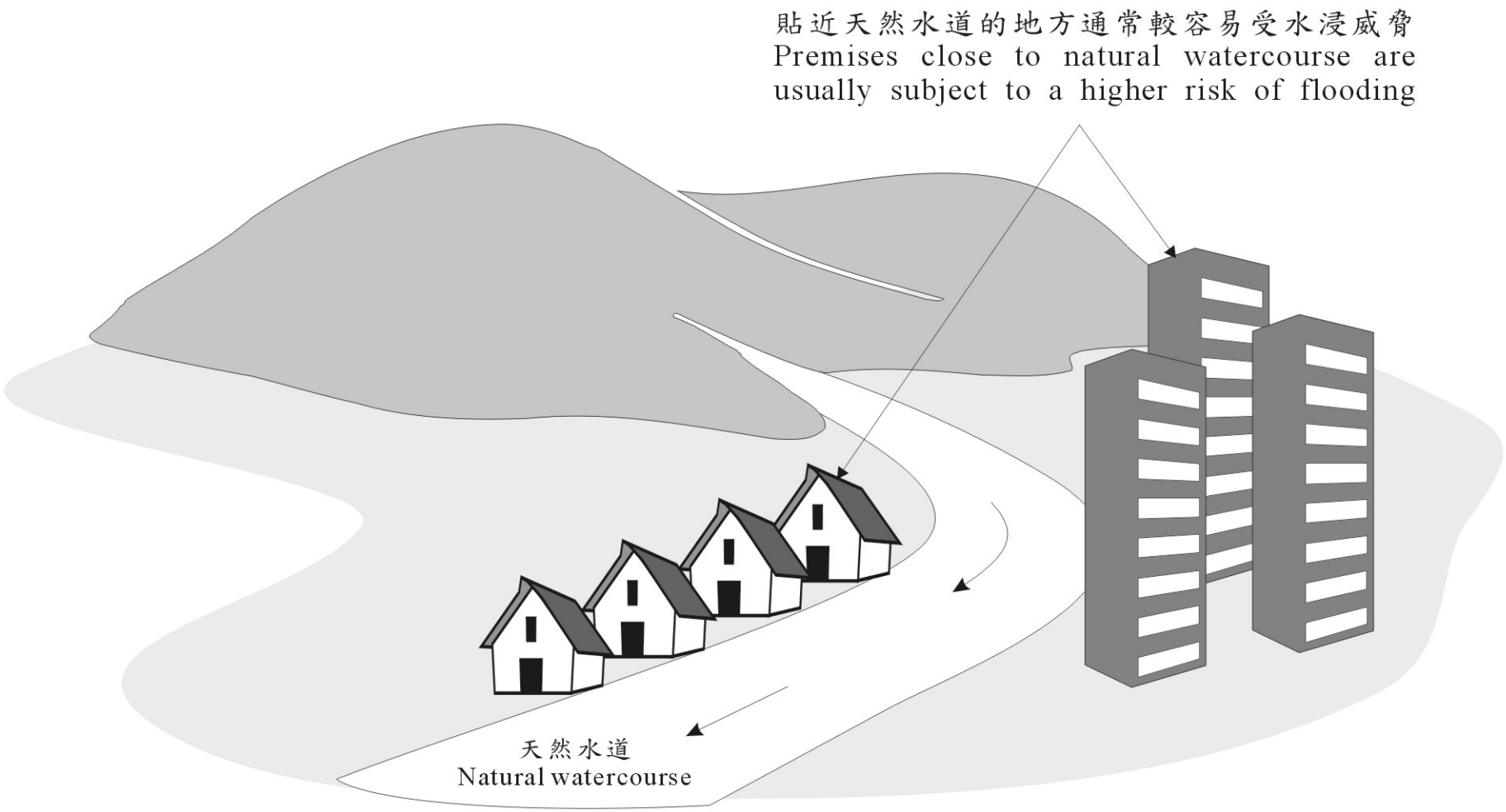

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水浸高危地點的例子
Example of High-risk Area

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圖四 Figure 4	不依比例 N.T.S.	二００三年四月 Apr 03

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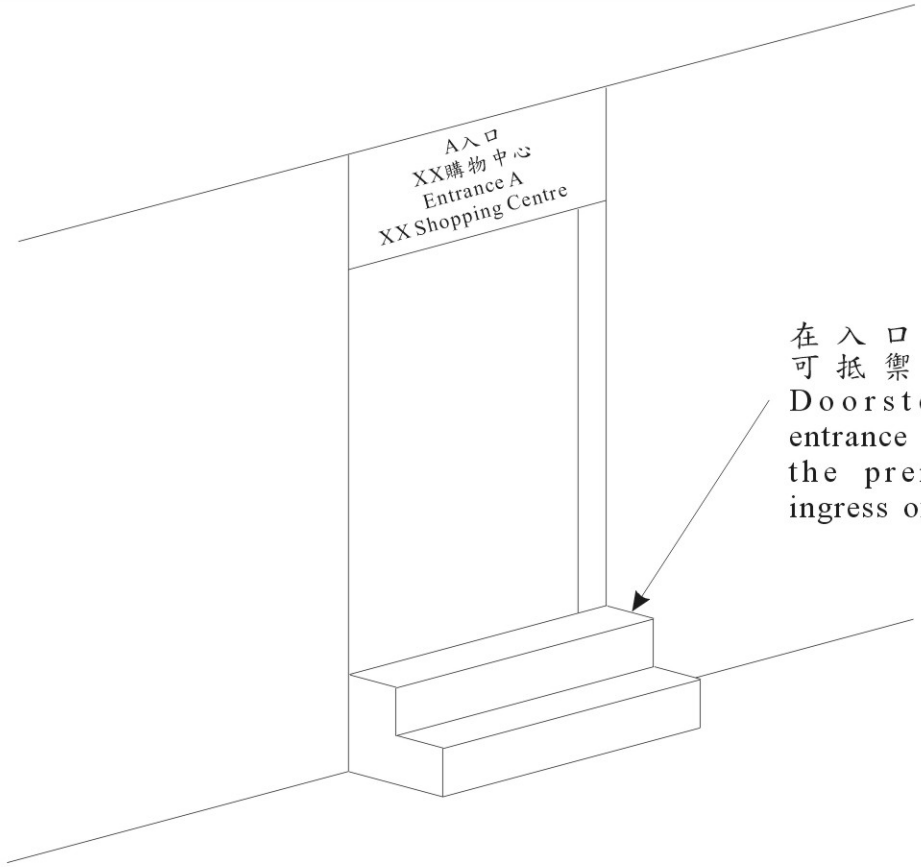

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建築物入口抵禦水浸措施的例子
Example of Dry Flood Proofing at the entrance of premise

drawing no. 圖則編號	scale 比例	date 日期
圖五(甲) Figure 5a	不依比例 N.T.S.	二00三年四月 Apr 03

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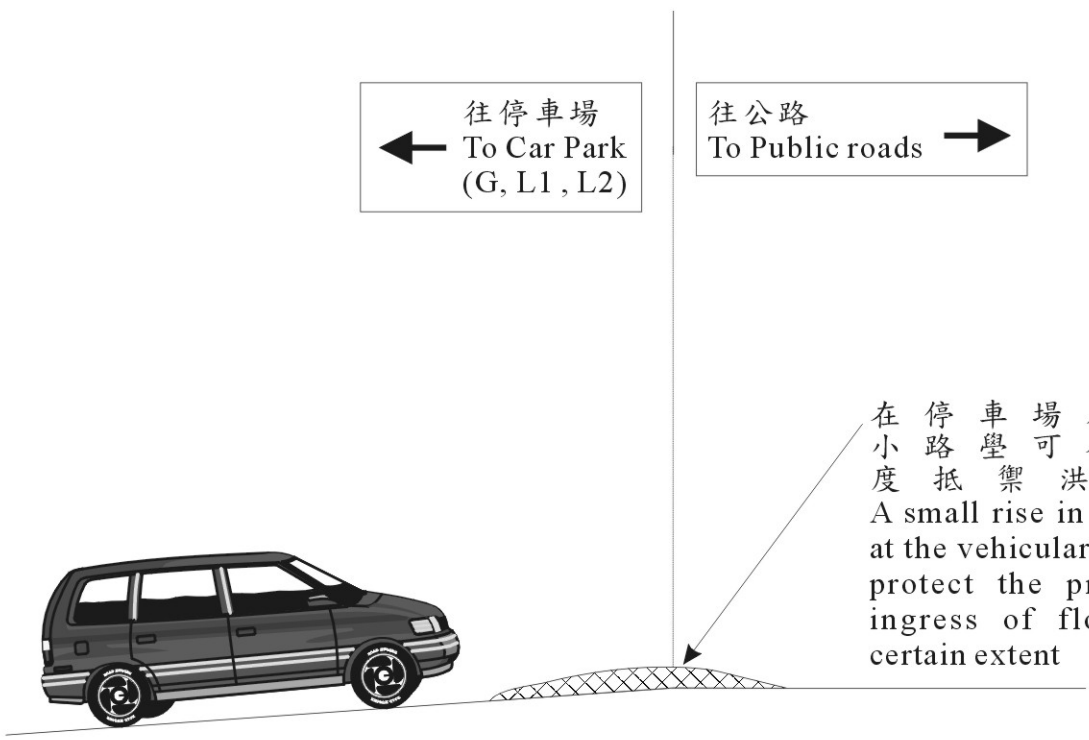

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停車場入口抵禦水浸措施的例子
Example of Dry Flood Proofing at the vehicular entrance of premise

drawing no. 圖則編號	scale 比例	date 日期
圖五(乙) Figure 5b	不依比例 N.T.S.	二00三年四月 Apr 03

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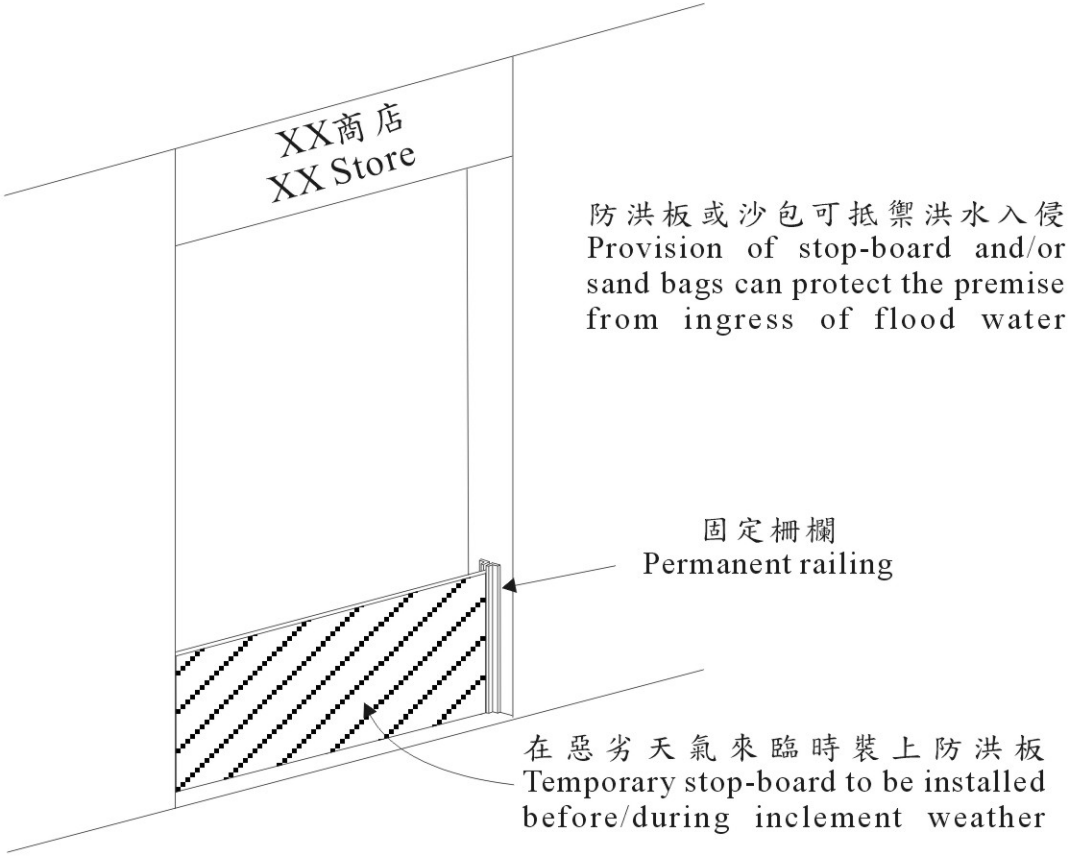

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臨時抵禦水浸措施的例子
Example of Temporary Dry Flood Proofing

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圖六 Figure 6	不依比例 N.T.S.	二００三年四月 Apr 03

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