

# COVID-19 Symposium: From Prevention to Control

## Role of healthy drains in the prevention of spread of COVID-19

Speaker:

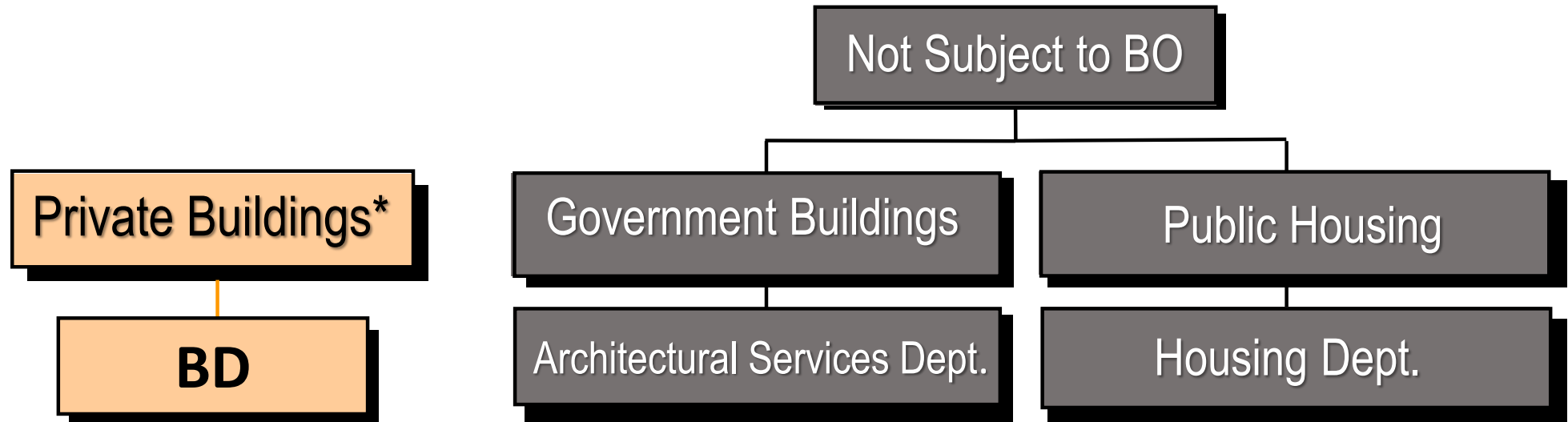
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- B. Design of Drainage System
- C. Lesson Learnt (The SARS in 2003, Amoy Gardens)
- D. Special Inspection Scheme of Drainage Pipes

# A. Control under the Buildings Ordinance (BO)



\* Independent Checking Unit under the Office of Permanent Secretary for Transport and Housing (Housing) has been delegated to exercise control to properties developed by the Hong Kong Housing Authority that have been sold or divested.

- Public Library
- Markets
- Stadium
- Government offices
- Military Building

- Public Rental – fully exempted

# A. Control under the Buildings Ordinance (BO)

## Section 28(1) of Buildings Ordinance (Cap. 123)

*“All drainage works for any building shall, save as provided by regulations, be carried out by the owner of such building to the **satisfaction of the Building Authority** and in compliance with regulations.”*

## Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap. 123I)

- Technical requirements

### Main Objectives:

- Health and hygiene
- Rain water / waste water / soil water discharged into government sewage system or treated properly and efficiently
- Prevent contamination / spread of smell

# Major design considerations



External wall of the building



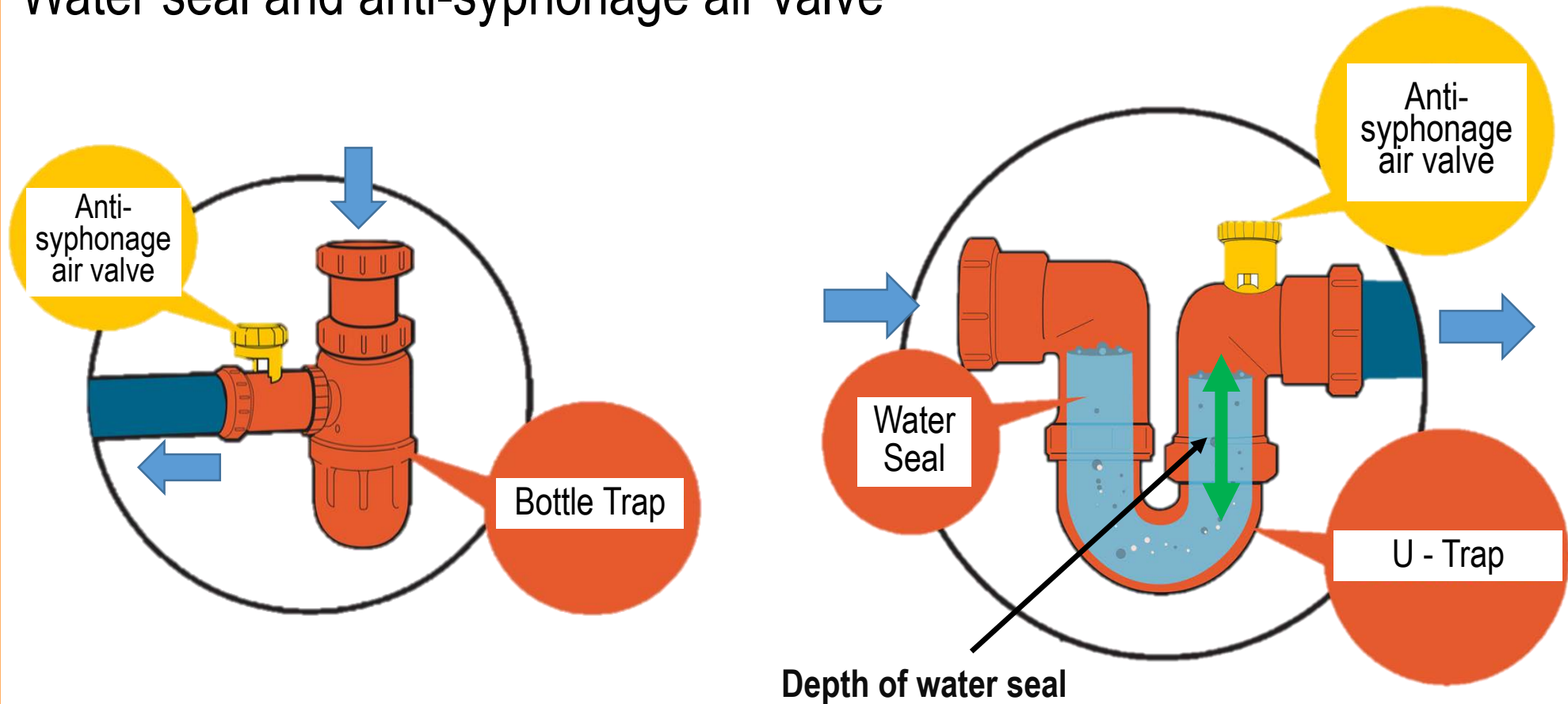
Internal pipe duct accessible from common parts

- Effective from 1.2.2021, new 'Building (Construction) Regulation' - **access for external maintenance**
- **Code of Practice on Design for Safety – External Maintenance**
- Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (**PNAP**) **APP-93** for further details

**Importance of access for inspection, maintenance and repair**

# Requirements for traps

Water seal and anti-syphonage air valve



# Water seal (min. depth and internal diameter)

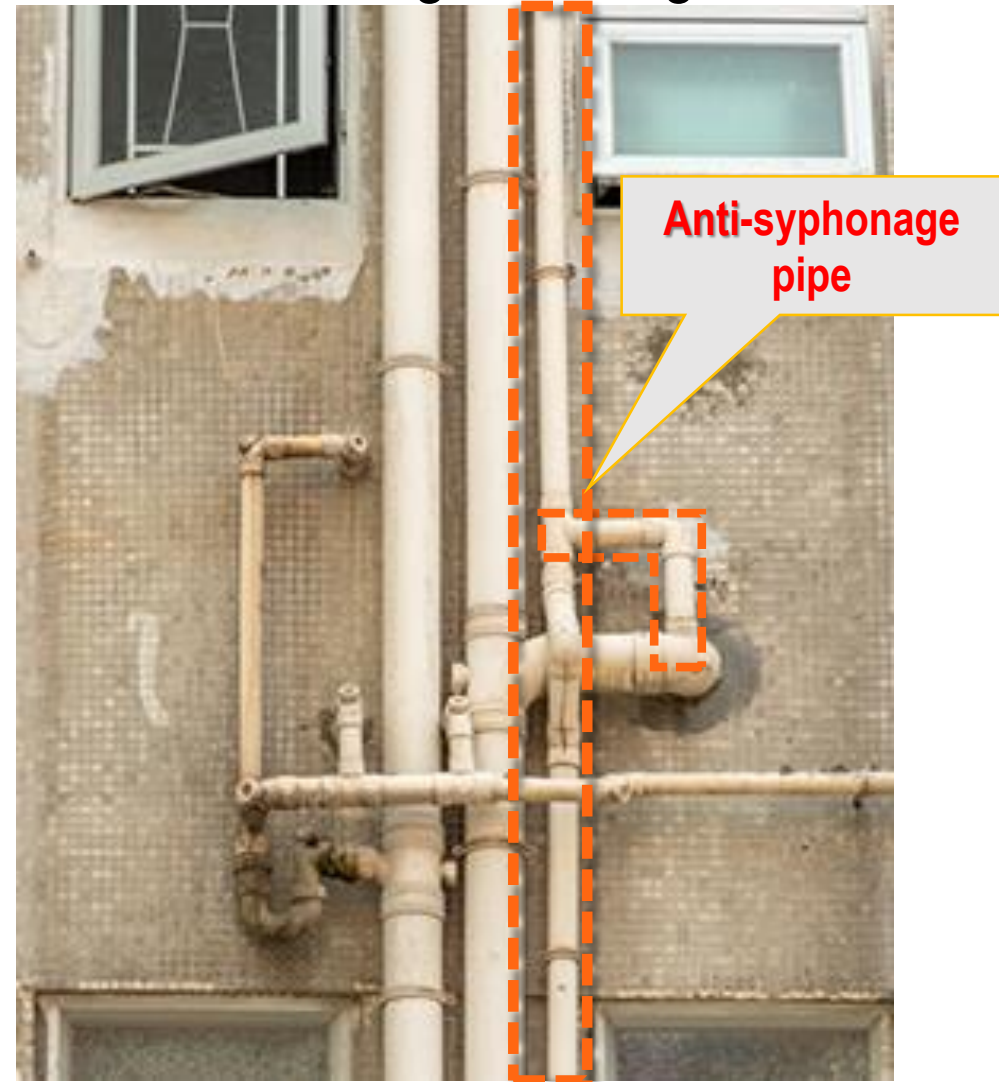
Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations 24 and 25

Fitments	Depth of Water Seal	Internal Diameter
Soil fitments (W.C. / Urinal)	Not less than <b>50mm</b>	Not less than <b>80mm</b>
Waste fitments (Basin / Bath / Floor Drain)	Not less than <b>40mm / 80mm*</b>	Not less than <b>32mm</b>

\* For the waste fitment with the waste pipe connected to a soil pipe

# Provision of anti-syphonage pipes

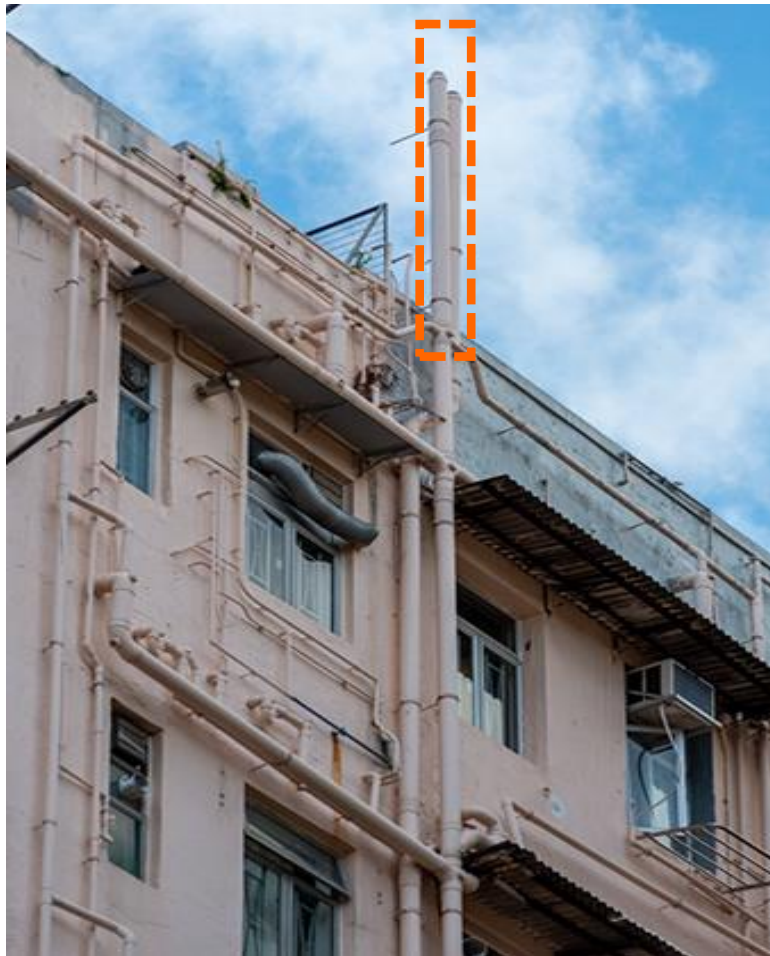
Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulation 30



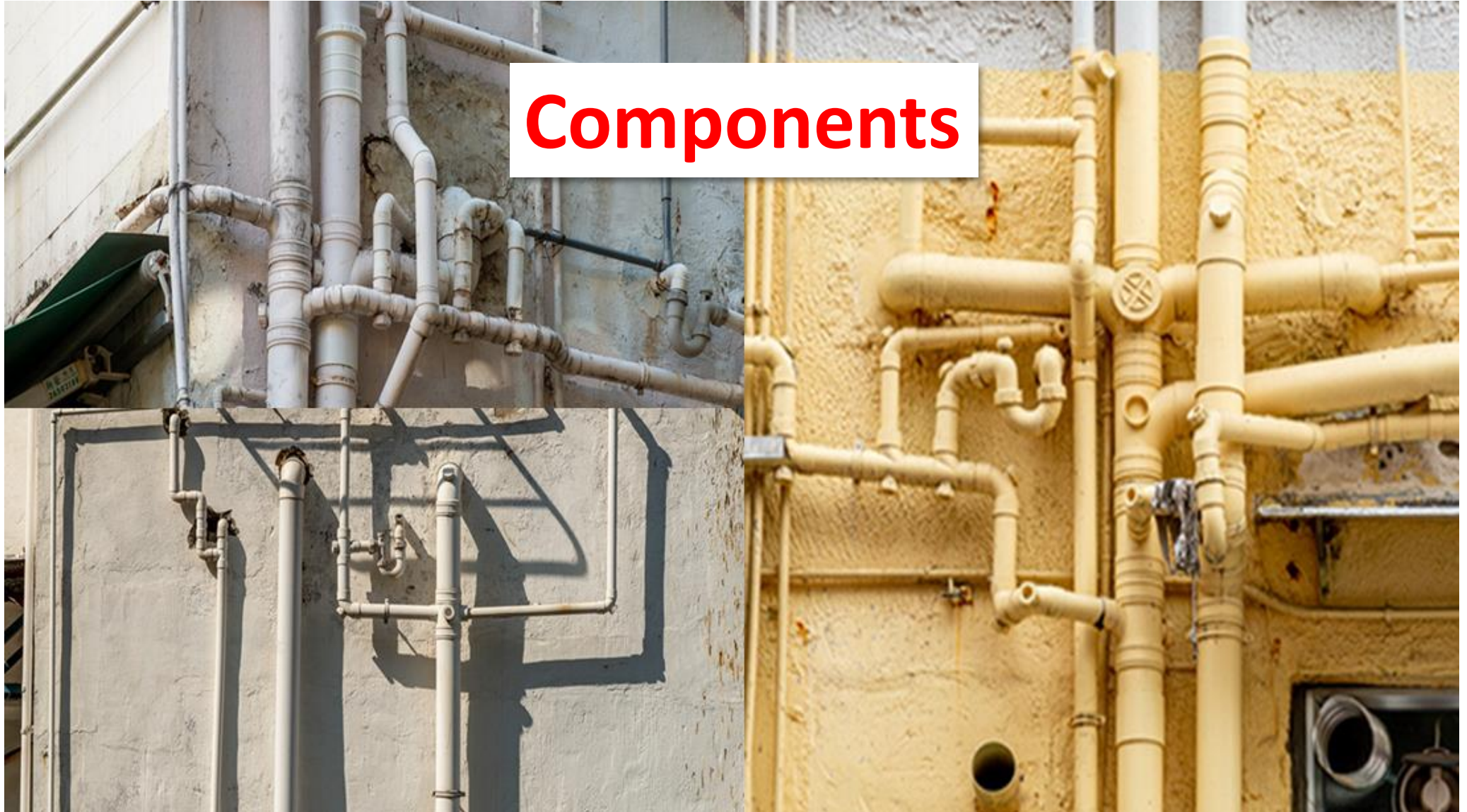


# Provision of ventilating pipes

Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulation – carried up to a height not less than **1m above** the roof



## B. Design of Drainage System



# 1. Rain water pipes

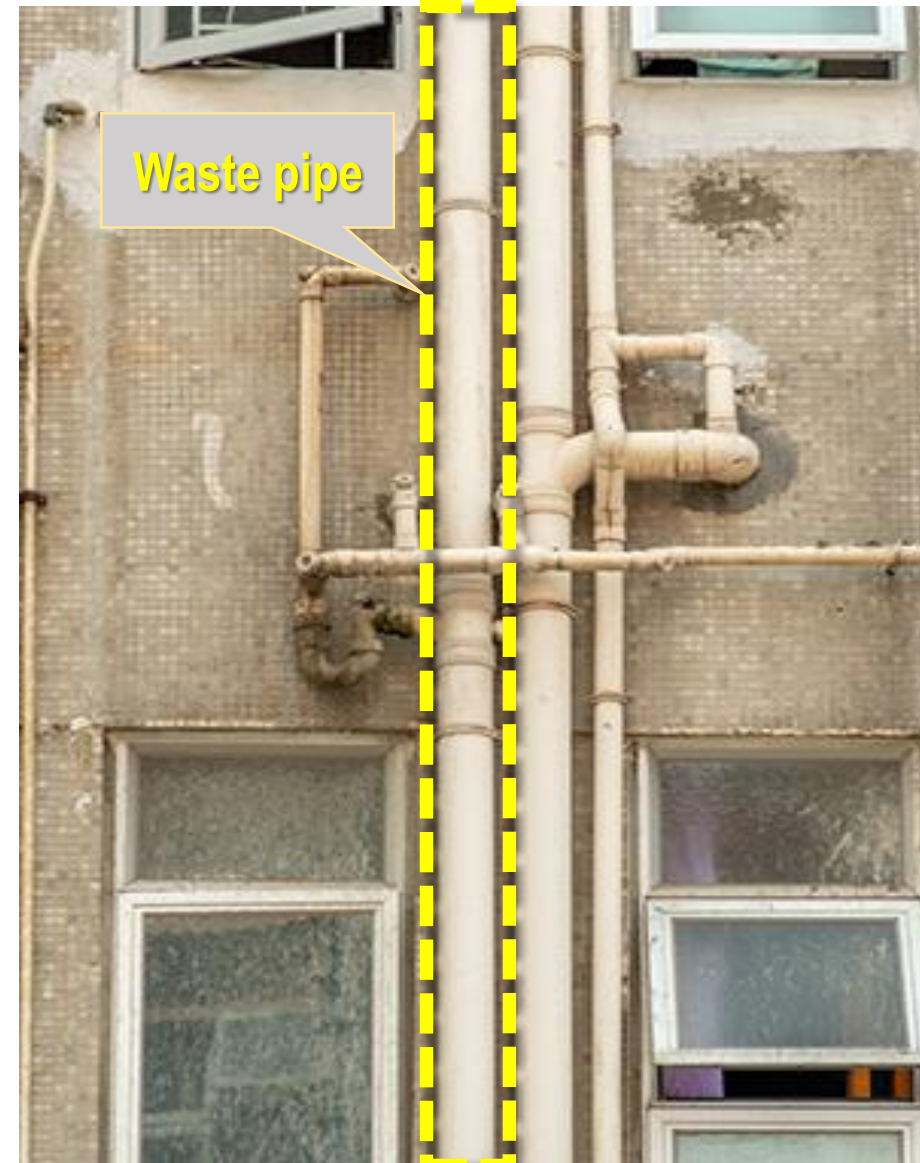
To discharge rain water from main roofs, flat roofs, balconies, etc.

- collect and carry **rain water only**
- should not be connected with other pipes carrying soil and/or waste water



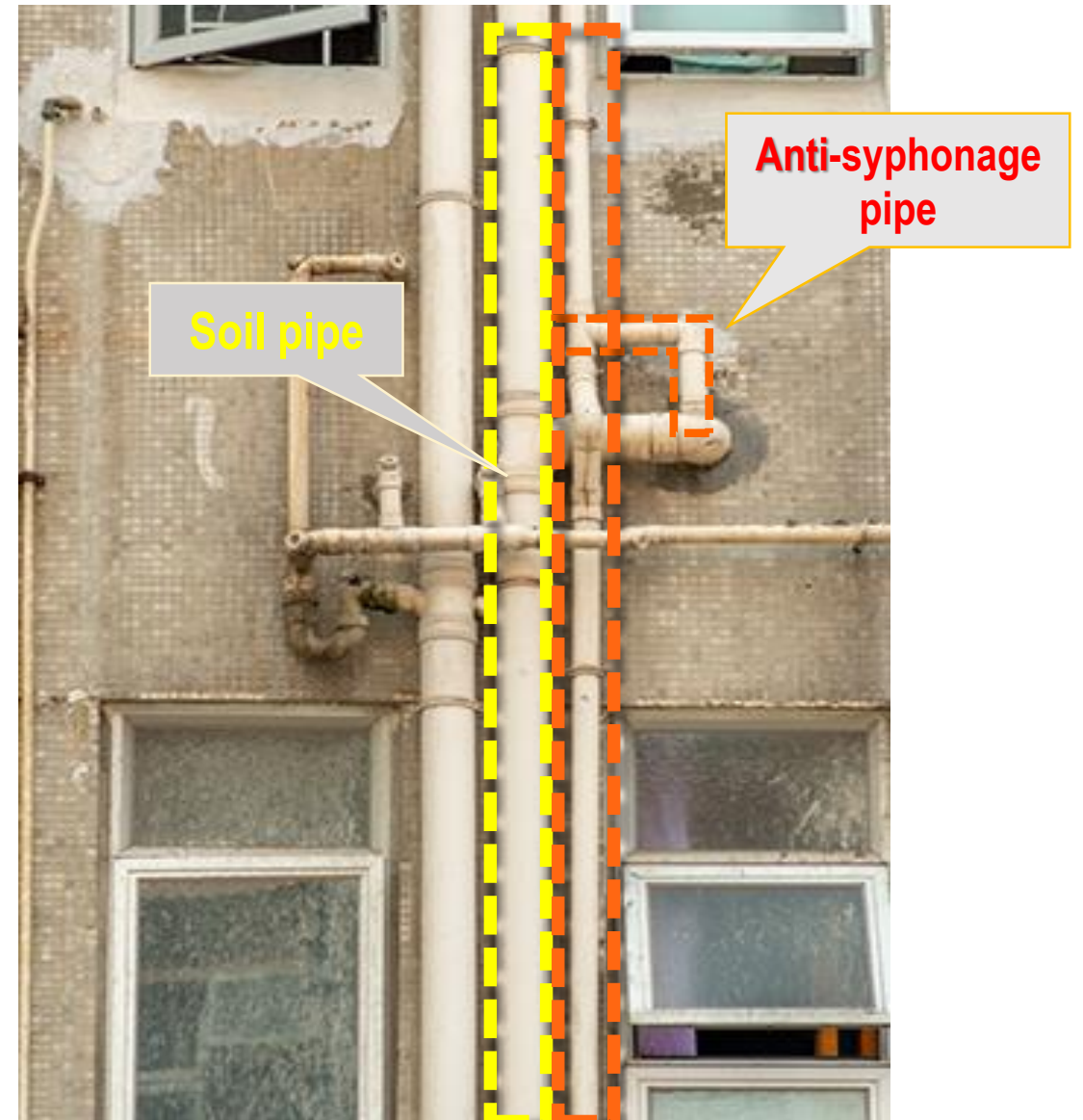
## 2. Waste pipes

To discharge waste water from lavatory basin, bath, shower tray, floor drain, etc.



### 3. Soil pipe and anti-syphonage pipe

To discharge soil water from water closet, urinal, etc.



## 4. Traps

By keeping a water seal inside a trap to prevent smells, insects and bacteria from the drainage system into the premises.

The trap will only work as long as the water seal is maintained.



# Types of traps

U-trap



Bottle trap



## C. Lesson learnt (The SARS in 2003)

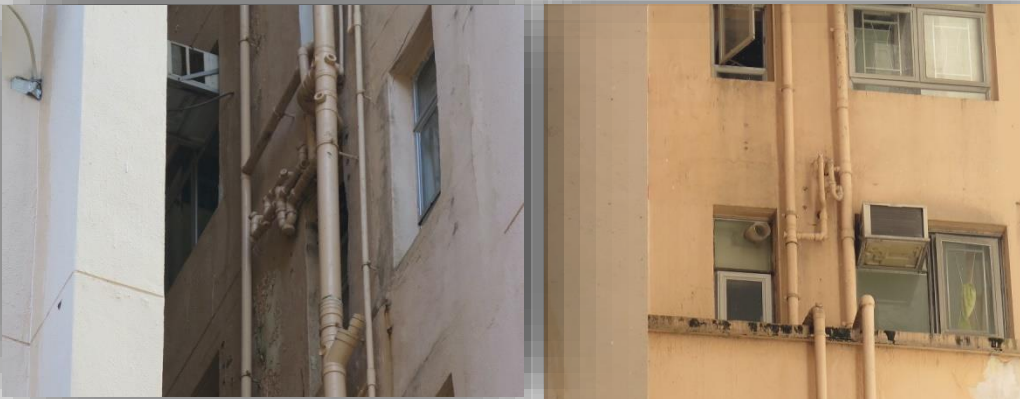


### 淘大花園 AMOY GARDENS

#### Probable explanations:

- Person-to-person contact
- Use of shared communal facilities
- **Defective anti-syphonage pipe at 4/F of Block E**
- Sewage system – dried up U-traps (**loss of water seal**)

(For more details, please see Main Findings of the Investigation published by the Department of Health in April 2003)





# Reasons for loss of water seal

## Evaporation

No usage for a long time without feed-in water to the trap

## Self-syphonage

Partial vacuum formed when large amount of water discharge (e.g. bath tub) flowing in full-bore in branch pipe when there is no anti-syphonage device

## Leakage

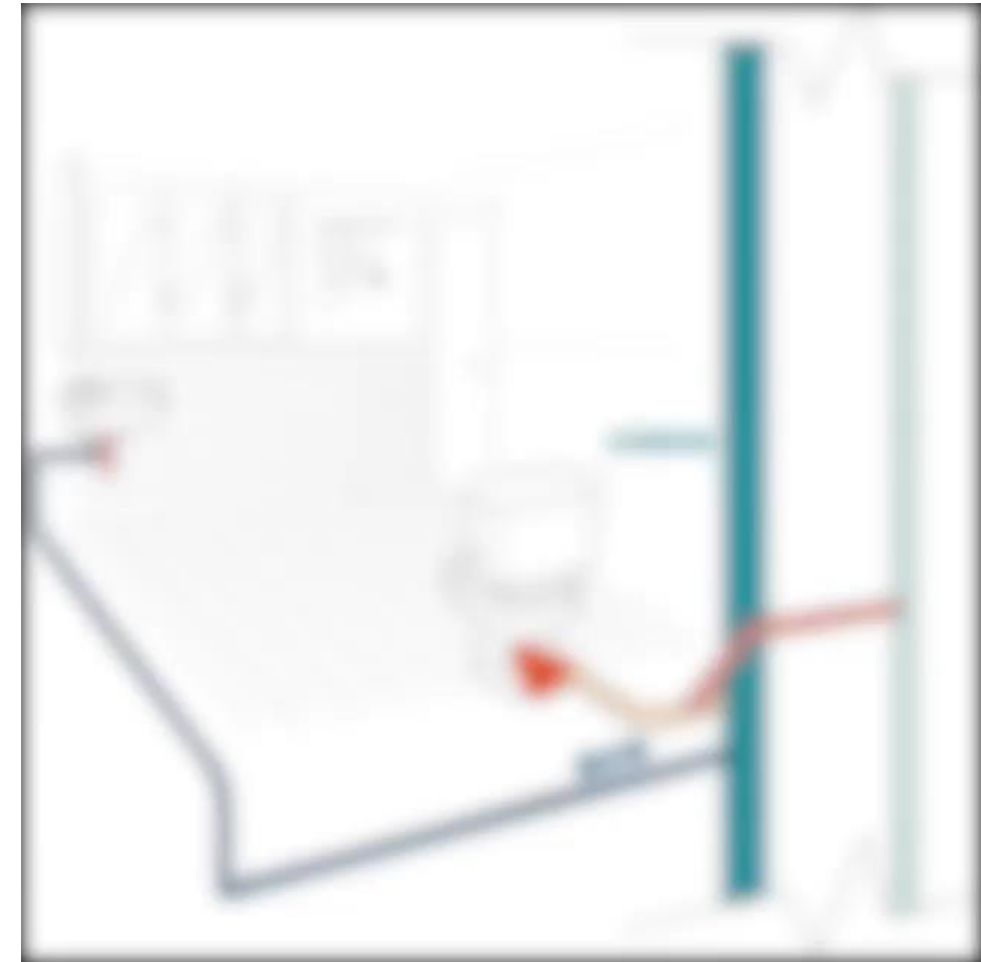
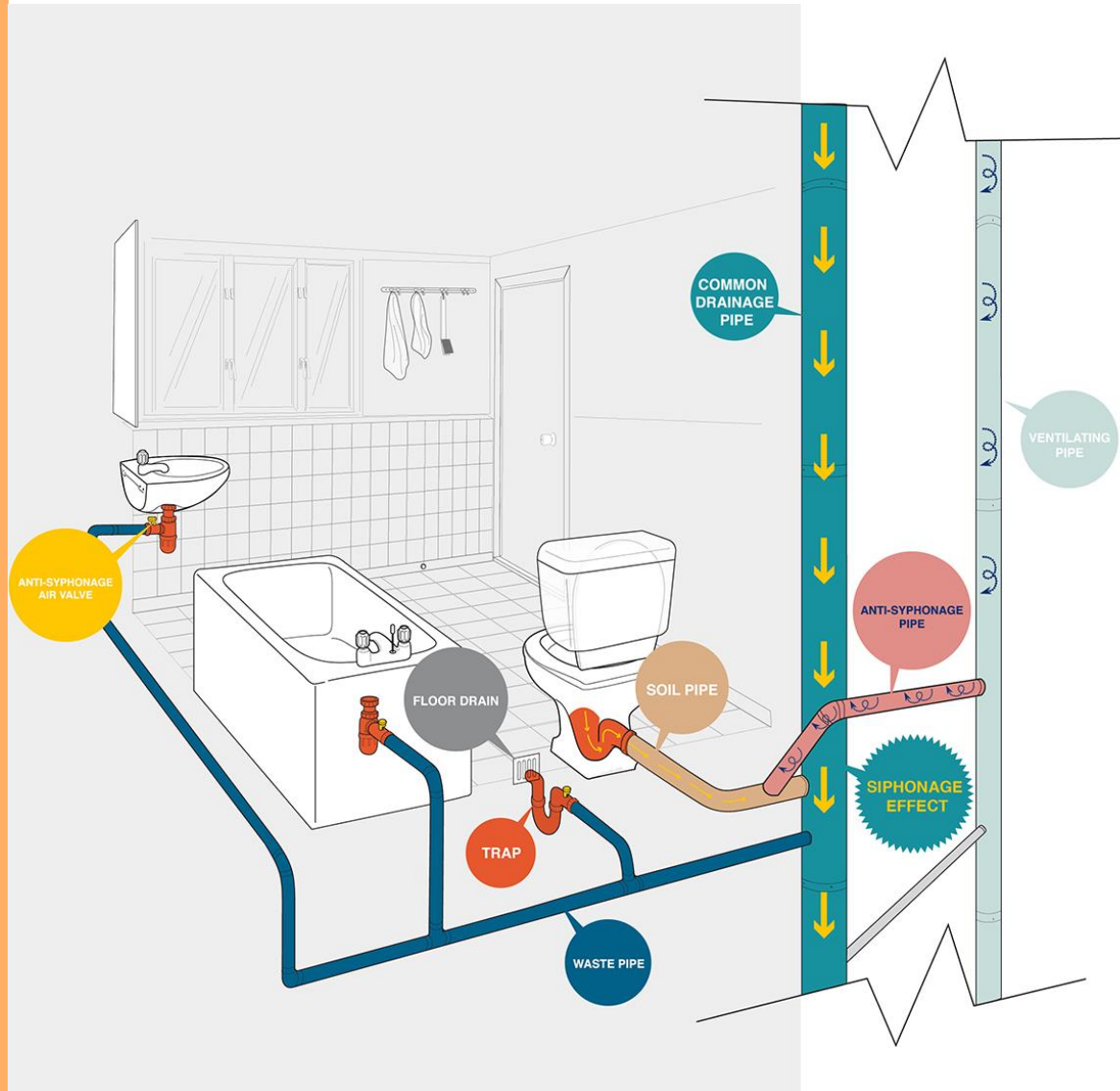
Broken / Defective trap

## Syphonage

The suction effect caused by the negative pressure induced by fast moving water flow in the main down pipe when there is no anti-syphonage device

# Syphonage

[COVID-19 Sym - Role of healthy drains \(vid-1\).mp4](#)  
(video-1)



# What if the water seal is lost ?



[COVID-19 Sym - Role of healthy drains  
\(vid-2\).mp4](#)  
(video-2)

# **New / Revised Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) issued after 2003**

- **APP-13** – Submission of Certificate of Completion of Building Works, Application for Occupation Permit and Submission of Record Plans and Information
- **APP-93** – Planning and Design of Drainage Works
- **APP-133** – Cast Iron Pipes for Drainage Works
- **ADV-14** – Facilities for External Inspection and Maintenance of Buildings
- **ADV-24** – Floor Drains in Kitchens and Bathrooms

## **Minor Works Control System**

- To facilitate building owners and occupants to carry out aboveground drainage works.

## D. Special Inspection Scheme of Drainage Pipes

- Prevention is better than cure
- Under Anti-epidemic Fund
- To proactively inspect the external drainage pipes (from June 2020)
- Aims:
  - To promote environmental hygiene
  - To create job opportunities
- Scope of inspection:
  - 20,000 private domestic and composite buildings (except 3-storey or less)
  - External drainage pipes

# Common problems



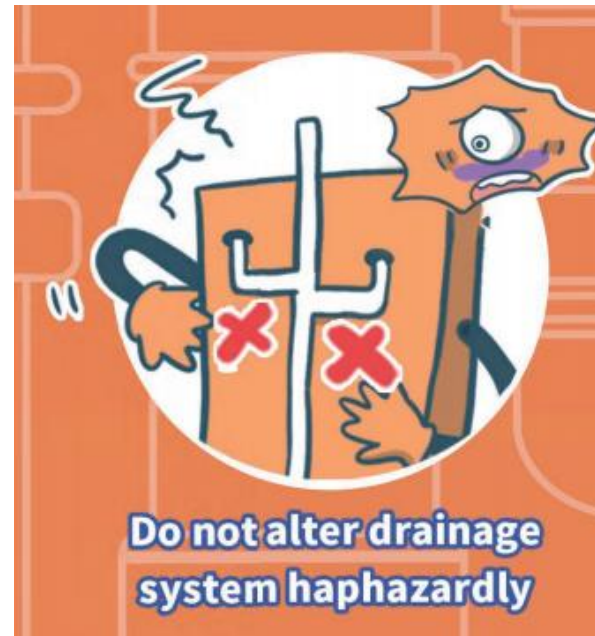
- Lack of **maintenance** and repair
- Improper (unauthorised) **alteration** of drainage system
- **Misconnection** of drainage pipes

# Drainage Repair Order under Section 28 of Buildings Ordinance



# Owner's responsibility

## HEALTHY DRAINS



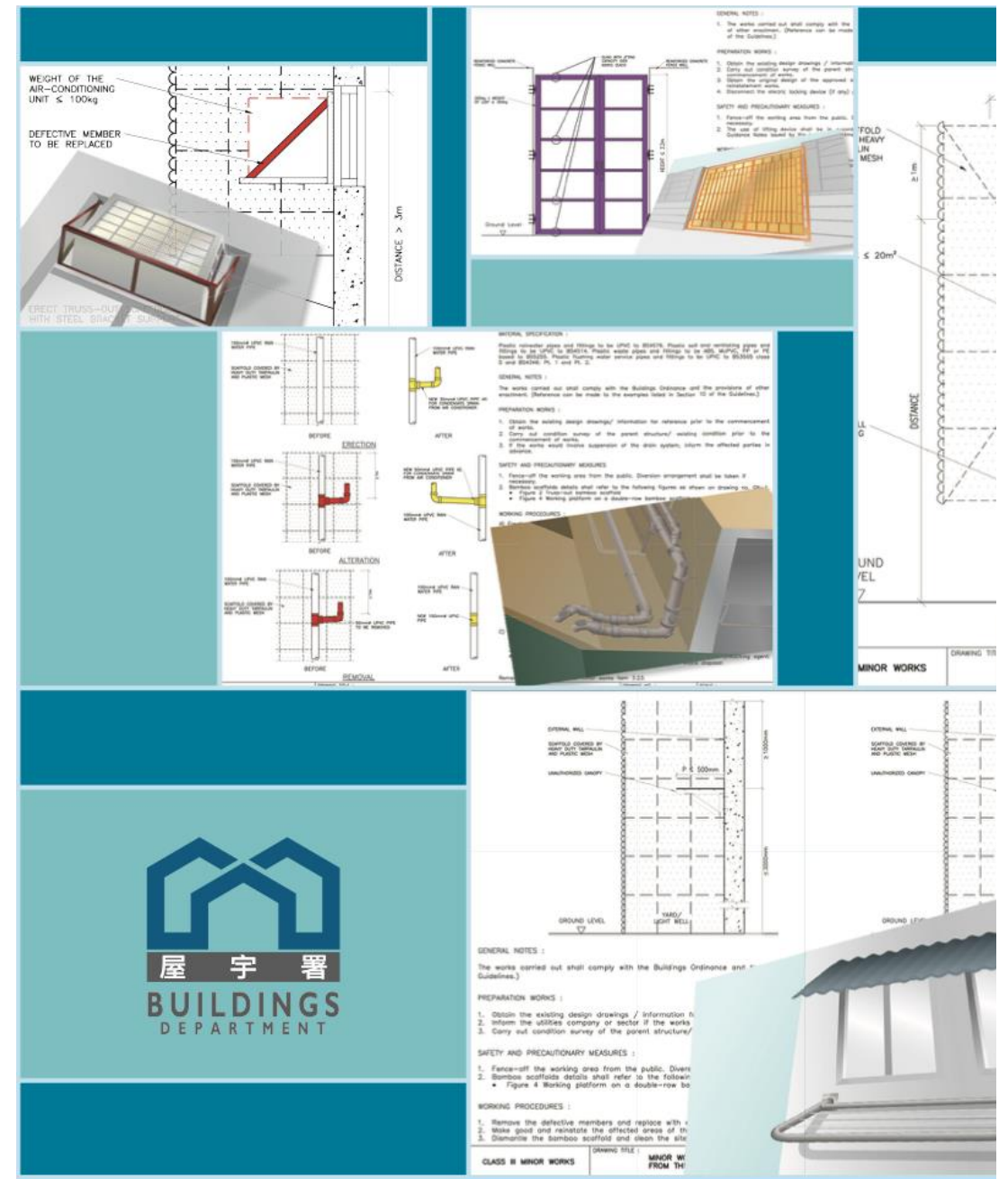


# 小型工程監管制度

## Minor Works

### Control System

- Commenced on **31.12.2010**
- To facilitate building owners and occupants to carry out **small-scale** building works safely and lawfully through **simplified requirements**
- BD's site **audit** checks



# Minor works items - aboveground drainage system

Class II

2.30

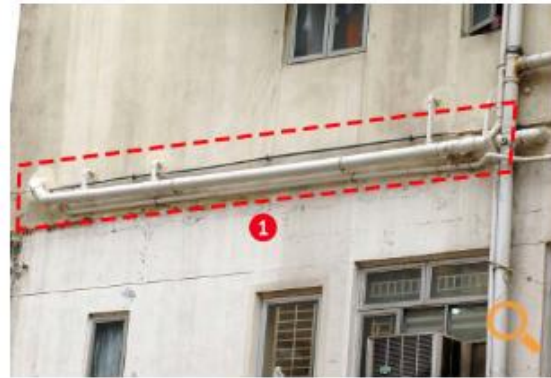


Erection/Repair/Alteration/  
Removal

**Stepped-up** audit checks of **completed** minor works for aboveground drainage system

Class III

3.23



Erection/Repair/Alteration/  
Removal

- Not involving **main pipes**, other than the replacement of components at existing junctions
- Not involving **embedded pipes**, other than through a wall or slab

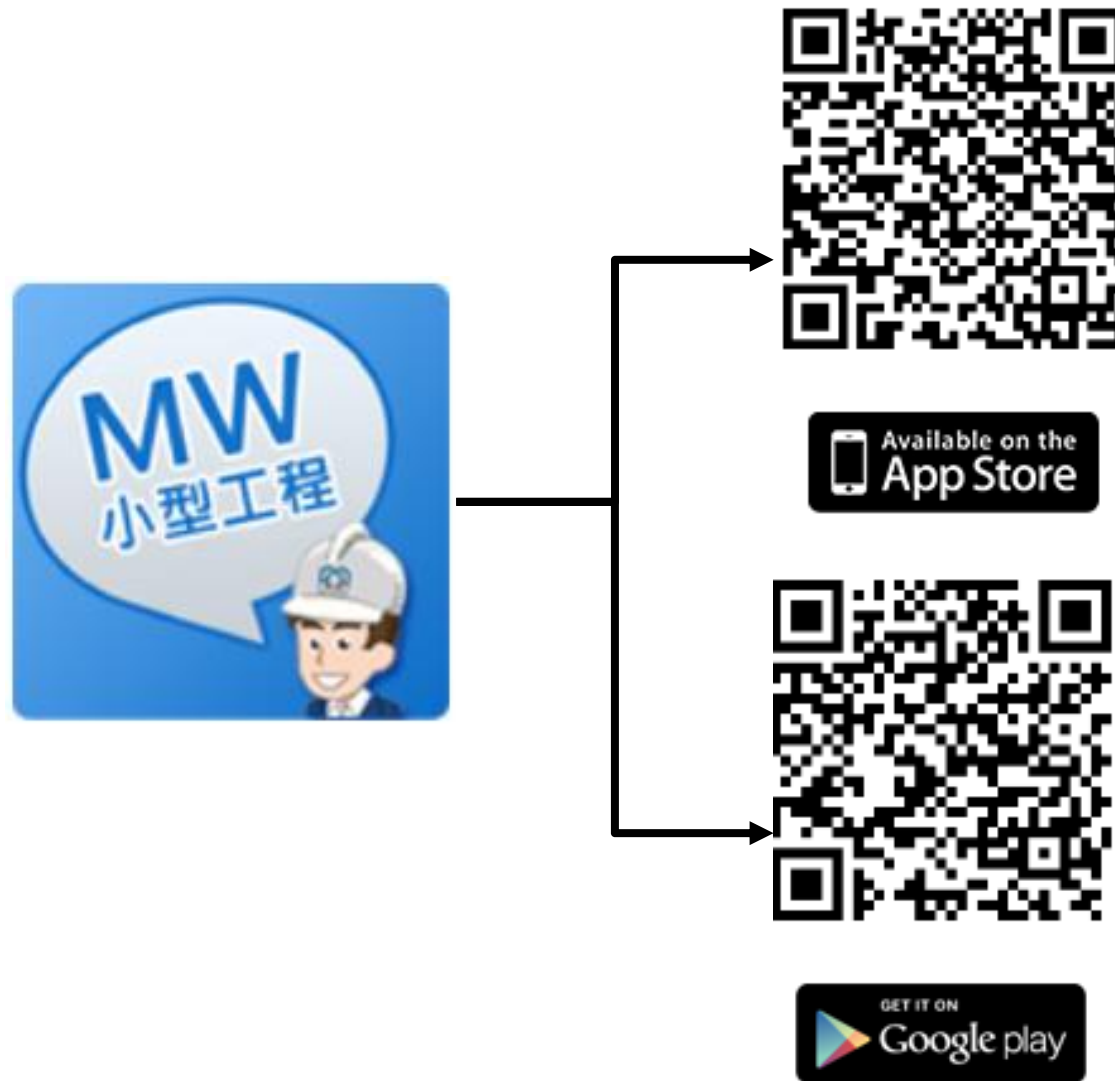
Class III

3.24



Removal of unauthorised  
aboveground drain

# Mobile App





<https://bit.ly/2PXanVM>

搜尋註冊專業人士或承建商  
Registered Professionals or  
Contractors



# 財政資助 Financial Assistance



<https://bit.ly/2DSQ3IL>



# Public Education and Publicity



[COVID-19 Sym - Role of healthy drains \(vid-3\).mp4](#)  
(video-3)



<https://bit.ly/320Uh2F>





# 預防 勝於治療

PREVENTION IS  
BETTER THAN CURE

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定期檢驗 防患未然

REGULAR INSPECTION AND PREVENTIVE  
MAINTENANCE FOR YOUR SAFETY

聯絡我們  
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謝謝  
Thank you

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