

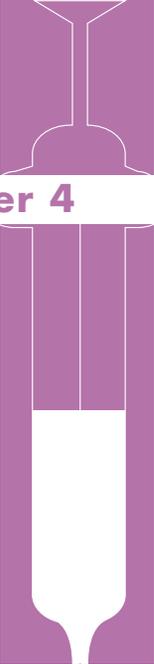


Chapter 4

Chapter 4

SELECTING THE APPROPRIATE

SOLUTIONS



Chapter 4

SELECTING THE APPROPRIATE SOLUTIONS

After understanding the size and nature of problems in building maintenance and management from Chapter 3, readers can find from this chapter principles and guidelines in selecting the appropriate solutions. While Section 4.1 to 4.4 of this Chapter concentrate on the maintenance aspects, Section 4.5 mainly covers more on management related issues such as the formation and operation of Owners' Corporation (OC).

4.1 Dealing With Building Defects & Nuisance

Methods and knowledge on the repair of common defects and removal of nuisance are provided in this Chapter for general reference. The repair or rectification process as described are technical in nature and in most cases require professional input. **Under no circumstances should this Guidebook be referred as a workman's manual or a "do it yourself" guide.** Building owners, Owners' Corporation (OC) or Owners' Committee should always engage the services of qualified building professionals as Project Consultants or Project Managers to advise, supervise and handle all the technical, contractual and legal matters in relation to the works and the required contracts. This Chapter is a very useful tool for their communication with the building professionals and contractors.

To exhaust all the available methods on every possible building defect or nuisance is not the intention of preparing this Guidebook. Readers should refer to other relevant sources if an in-depth knowledge in a particular area is considered necessary.

Precautionary measures for the safety of the public should be completed before the commencement of the repair works. Double scaffolding, protective screens, catch fans are usually required for repair of the external finishes/tiles of the buildings. Tight budget should never become an excuse to compromise public safety during the repair works.

4.1 Dealing With Building Defects & Nuisance

4.1.1 Building Defects

Section 3.2 of Chapter 3 gives a general picture of the common defects found in buildings. The following are some common methods in dealing with such defects. The methods listed below are not exhaustive. New materials and technology emerge in the market from time to time. Owners should seek advice from building professionals on the method, cost, durability and compatibility in selecting suitable materials for the repairs. In carrying out the repair works mentioned in paragraph (a) and (b) below, supervision of works by a qualified building professional is necessary.

(a) Structure

(i) Defective concrete/ concrete spalling

Patch repair

It is the most common repair method for minor concrete defects such as surface spalling. Damaged or defective concrete is to be hacked off down to sound substrate and patched up with appropriate repair mortars to protect the steel reinforcement from rusting. Two types of materials are commonly used for patching up by hand:

Cementitious mortars such as cement mortar and polyester-modified cementitious mortar or

Resin-based mortars such as epoxy resin mortar and polyester resin mortar

After all defective concrete has been hacked off, rusty reinforcement bars should be properly cleaned, and primed with suitable cement/epoxy based primer matching the mortar used for patching if the environment is particularly aggressive, before patching up. Only primers specially manufactured for the purpose can be used, otherwise, the bonding strength between concrete and steel bars will be impeded, totally nullifying the repair efforts. Furthermore, before patching up, the exposed concrete surfaces and the steel bars must be dust free to allow effective bonding with the new mortars.

Replacement of reinforcement bars

Should circumstances arise that the diameters of the reinforcement bars are found substantially less than their original sizes after the "rust shells" have been removed, addition or replacement of steel bars is required. The process involves identification of the type of existing steel bars, assessment on the required replacement/supplement of reinforcement bars and the required lapping of the new and old bars. Structural calculations may also be required.

4.1 Dealing With Building Defects & Nuisance

Partial/ complete demolition and replacement

When the defective concrete is extensive and penetrates beyond the steel bars, partial or complete demolition and re-casting of the affected members may be required. Under such circumstances, a building professional such as a Registered Structural Engineer is required to give advice on the details of the materials and construction methods, and supervise the works. Precautionary measures such as installation of temporary propping may be required.

(ii) Structural cracks

As mentioned in Chapter 3, structural cracks deserve immediate attention. Detailed investigation should be carried out first to identify the underlying cause of the cracks. The cause of the problem must be properly addressed before sealing up the structural cracks. Otherwise, the danger of sudden collapse will persist.

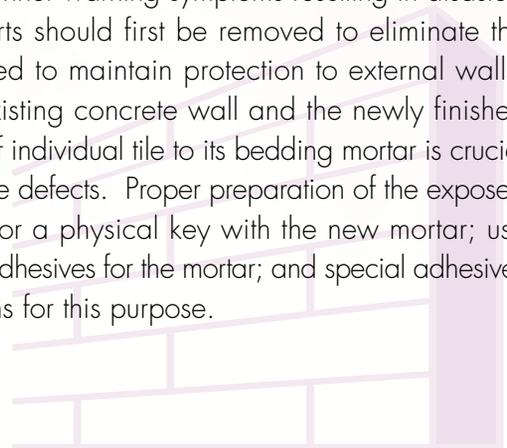
Identifying the cause of structural cracks should best be carried out by a structural engineer who should also advise on courses of action to remove the problem and the subsequent repair method. Such repair works should also be carried out by contractors registered under the Buildings Ordinance.

After identifying and addressing the problem causing the cracks, the repair of the cracks is usually done by pressure injection of non-shrinkage grout or epoxy resin or by open-up and refill/recast with concrete.

(b) External Walls

(i) Wall tiles/finishes

External wall tiles or panels of wall finishes insecurely fixed to external walls will likely fall off without any further warning symptoms resulting in disasters to pedestrians. All loose parts should first be removed to eliminate the imminent danger and replaced to maintain protection to external walls. A proper **key** between the existing concrete wall and the newly finished layer as well as the bonding of individual tile to its bedding mortar is crucial to avoid recurrence of the same defects. Proper preparation of the exposed surfaces of the existing wall for a physical key with the new mortar; use of suitable bonding agents or adhesives for the mortar; and special adhesives for the tiles are essential means for this purpose.



4.1 Dealing With Building Defects & Nuisance

4.1.1(b) External Walls (continues)

(ii) Cracks

Cracks should be repaired by injection of specially designed chemicals or through open-up and repair by mortar with the required key mentioned in Section 4.1.1(b)(i) above.

(iii) Loose concrete

After the external wall tiles or finishes have come off, loose concrete, honeycombing, spalling may be revealed. Loose parts should be thoroughly removed down to the sound concrete substrate. Then, suitable repair mortar should be applied in accordance with description in Section 4.1.1(a)(i) of this Chapter. Should the defects be found so extensive that replacement/addition of steel reinforcement bars, partial or demolition and re-casting of certain parts of concrete elements is considered necessary, readers should also refer to Section 4.1.1(a)(i) of this Chapter for details.

(iv) Claddings

Stone claddings used in the external walls, like other forms of cladding such as aluminium, are usually mounted on a system of hooks or angles anchored onto the external walls, commonly known as dry fixing. The components of such system are designed to resist weather attacks. However, pollution such as acid rain or other unexpected chemical attacks may shorten their life span, leading to failure. The whole system should be regularly inspected. Care should also be given in examining the requisite expansion/movement joints and sealant to ensure their proper functions.



Cracked or bulging panels should be removed immediately to avoid accident. Before replacement, the cause of the defect should be identified and eliminated to avoid recurrence of the same defect. Should the existing cladding system be identified to be not suitable for the building, it must be totally replaced. Although such decision may be difficult to make, it is the only effective means to extirpate chronic and recurrent defects. Examples of such drastic replacement in Hong Kong are not rare.

In any repair process for external stone cladding, dry fixing type stone cladding system should never be replaced by the traditional mortar wet fixing method which leads to disastrous results.

4.1 Dealing With Building Defects & Nuisance

(c) Windows

(i) Repair

Glass panes

Any broken or cracked glass panes should be replaced at once with the same type and thickness of glass.

Steel windows

Steel windows are subject to rusting and should be regularly re-painted with primers and re-finished. Putty for holding glass panes should be maintained. Hinges should be regularly lubricated and replaced if necessary to avoid dislodgment of sashes.



Aluminium windows

Bar hinges in aluminium window system is one of the most common sources of problem that leads to dislodgment of sashes. They should be regularly checked for any loose fixings, deformation, cleared of dust and dirt and lightly lubricated to avoid friction causing undue load on the fixing. Should any of the aluminium angle for securing the glass panes be found missing, replacement must be done at once to avoid falling of glass panes.

In the processing of replacing fixing components such as screws and rivets, measures against bi-metallic action leading to corrosion must be taken to avoid direct contact between two incompatible materials. A common example of bi-metallic action is between aluminium and stainless steel.

Locking devices

Locking devices of window sashes should be replaced if they cannot function properly. Otherwise, damage may result in typhoon.

(ii) Replacing major components

Deformed window sashes or frames, usually revealed after typhoon, are unstable and have to be replaced at once.

4.1 Dealing With Building Defects & Nuisance

4.1.1(c) Windows (continues)

Replacement of window frames is inevitable if:

- 1 the frames have deformed, become insecure, deteriorated to a considerable extent; and
- 1 the quality of the frame or its waterproofing materials filling the gap between the frame and the parent structure is in doubt, leading to constant leakage beyond repair.

In the process of installing the new window frames, readers may wish to note the following points:

- 1 window frames should be securely and rigidly fixed in place to window opening in walls by fixing lugs;
- 1 suitable waterproofing grouting should be properly applied between the window frame and the opening with an additional coat of waterproofing material around the frame;
- 1 for aluminium windows, joints in window frames and sections should be properly sealed with suitable sealant. The window frames should be suitably equipped with water bars at its sill to prevent entry of water. A continuous gasket of suitable materials should also be properly applied along the whole perimeter between the window frame and openable sashes; and
- 1 glass panels installed to protect against the danger of falling should be designed by an Authorised Person (AP) or Registered Structural Engineer (RSE) and the installation works carried out by a Registered General Building Contractor under the supervision of such AP or RSE.

4.1.2 Building Services Installation

(a) Electrical Installation

(i) Registered Electrical Contractors/workers

The repair and maintenance of electricity supply system should be undertaken by registered electrical contractors/workers. Name lists of registered electrical contractors/workers are available for reference at the Electrical and Mechanical Services Department's (EMSD) Customer Services Office and web site, as well as all District Offices.



4.1 Dealing With Building Defects & Nuisance

(ii) New installations, additions or alterations

New installations, additions or alterations of electrical installations should comply with the safety requirements of the Electricity Ordinance.

Before carrying out any addition or alteration:

- feasibility studies should be carried out by qualified building services engineer or registered electrical contractor, depending on the scale of the job;
- future electricity consumption requirements should be considered; and
- consent by the electricity supplier and the Owners' Corporation of the building must be obtained.

When the electrical work (including new installation, addition, alteration and repair) is completed, the qualified building services engineer and registered electrical contractor should inspect and test the electrical installations and certify that the installations are safe and comply with the safety requirements of the Electrical Ordinance in the Work Completion Certificate (Form WR1).

(iii) Periodic inspection

Owners should ensure that the power loading generated by the appliances and installations do not exceed the maximum loading approved by the electricity supply company. Qualified building services engineer or registered electrical contractor should be consulted if in doubt.

Electrical installations with an approved loading exceeding 100 amperes (A) in residential apartments, shops, offices and communal areas of the building should be inspected, tested and certified (Form VWR2) at least once every 5 years to ensure safety.

(iv) Other guidelines

- All electricity installations should be properly earthed.
- Concealed electrical wiring of new installations should have mechanical protection.
- Distribution boards should have identification labels to indicate the purpose of individual electrical circuits.
- Sufficient socket outlets should be installed for individual heavy-current electrical appliances.

4.1 Dealing With Building Defects & Nuisance

4.1.2(a) Electrical Installation (continues)

- Earth leakage circuit breakers must be installed for socket outlets.
- Socket outlets should be installed as far away as practicable from water taps, gas taps and cooking appliances to avoid danger of short circuits or fire risks.
- No socket outlet should be installed in a bathroom except for electric shavers.
- If an electric water heater is installed in a bathroom, the on/off switch should be installed outside the bathroom.
- Outdoor socket outlets or electric switches should be of weatherproof types.
- Use electrical appliances with safe 3-pin plugs.

If in doubt, consult the electricity supplier, qualified building services engineer or registered electrical contractor as appropriate.

(b) Fire Service Installations

Basic fire service installations in the building generally include hose reels, fire extinguishers, fire alarm systems or automatic sprinkler systems. These installations and equipment are for preventing spread of fire, giving alarms or extinguishing fire.

To ensure that these installations work efficiently at all times, a registered fire service installation contractor should be employed by the OC to maintain, inspect and certify the installations at least once every year. When the fire service installation is found not working properly or damaged, immediate repair should be carried out.



4.1 Dealing With Building Defects & Nuisance

(c) Lift and Escalator Installation

Reliable lift service not only enhance convenience to residents but can also save lives. A registered lift (and escalator) contractor should be appointed to carry out the following tasks:

- inspect, clean, lubricate and adjust the lift at least once a month;
- test and examine the safety equipment annually; and
- test the full load, overload device and the brake once every 5 years.



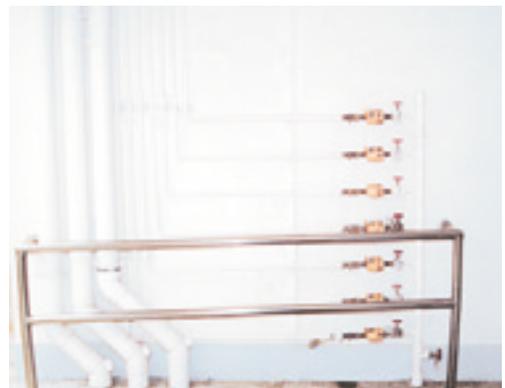
Apart from ensuring that the lift or escalator meets with the necessary safety standards, building owners should also monitor the following aspects, including:

- annual renewal of the permit to use and operate the lift;
- keeping and updating of records of work for EMSD inspection;
- inspecting to ensure that no dangerous gaps exist in escalators; and
- upkeeping the lift machine room and the lift pits in clean and tidy conditions.

(d) Water Supply System

(i) Components

The water supply system usually consists of incoming pipes and gate valves, upfeeding pumps, water tanks at various locations, downfeeding pipes, water meters, special valves and accessories.



4.1 Dealing With Building Defects & Nuisance

4.1.2(d) Water Supply System (continues)

(ii) Fresh water supply systems

Many old buildings still use galvanized iron (G.I.) pipes for the fresh water supply. As G.I. pipes are prone to corrosion over time, they are currently prohibited by the Water Authority. Maintenance works in these buildings should include the total replacement of the G.I. pipes by suitable approved materials such as copper pipes or PVC lined G.I. pipes.

(iii) Seawater flushing systems

Many places in Hong Kong are supplied with sea-water for flushing purposes. Therefore, the Water Authority requires that all flushing systems should be able to withstand the attack of sea water even in areas where fresh water is supplied for flushing. PVC pipes are commonly used for this purpose.

(iv) Licenced plumber

Readers are always encouraged to employ licenced plumbers in carrying out works related to the water supply system.

4.1.3 Water Leakage and Drainage Nuisance

(a) Roof

(i) Dealing with roof leakage problem

Total replacement of aged waterproofing construction is the most reliable method in dealing with roof leakage problems. Partial patch repair has some limitations, and will be discussed in detail at paragraph (vii) under this heading.



(ii) Types of waterproofing materials

The common waterproofing materials used in Hong Kong can be classified based on their application methods, namely, liquid-applied and membrane-applied. Some materials can be exposed to weather and sunlight but others require protection such as cement sand screeding or tile finishes. Some materials are more elastic and suitable for anticipated movements in the roof structure. Life spans of such materials range from 5 years to more than 20 years.

4.1 Dealing With Building Defects & Nuisance

(iii) Workmanship

Good workmanship is vital in waterproofing works. Areas of concern include:

- gradient of roof surfaces which should be laid to provide an adequate fall to avoid ponding;
- the thickness of the waterproofing materials applied;
- overlapping of the material at junctions ;
- upturns of the material at parapets and walls, protruding pipes and ducts, sharp corners are potential areas of problems;
- downturns of the material into drain holes; and
- prevention of excessive movement caused by equipment installed on top.

Effective waterproofing work also depends largely on whether their integrity will be damaged by pumps/condensers of air conditioning systems causing excessive movements, unauthorized building works (UBW), pipe supports, etc.

(iv) Testing

Nowadays, flooding/ponding tests and thermal scanning can be carried out after the laying of the materials to verify its waterproofing performance.

(v) Warranty

After completion of works, the contractor should give warranty in written forms for both materials and workmanship over an agreed period. The warranty should explicitly lay down the obligation of the contractor in respect of any leakage and to rectify consequential damage to finishes/fixtures occurred within the warranty period caused by the leakage.

(vi) Selecting contractors

Owners should be vigilant in choosing waterproofing contractors. Reputation and long experience in the field are important factors for consideration.

4.1 Dealing With Building Defects & Nuisance

4.1.3(a) Roof (continues)

(vii) Partial repair

Partial application of waterproofing materials may be effective provided that the source of leakage such as punctures can be accurately pin-pointed, and the repair material used is compatible with the existing one. The main concerns are the adequacy of overlapping and bonding between the new and old waterproofing materials. Sufficient fall of finished floor to prevent ponding should also be provided as far as possible. Inevitably, patch repair usually has a higher failure rate than total replacement of waterproofing construction.

(viii) Other repair methods

There are other repair methods available in the market e.g. the use of chemical additives to existing concrete surfaces or chemical injection into the cracks and voids. Since they can be applied from the floor below to stop the leakage, they are recommended as a temporary measure when the upper floor or the roof owner is not co-operative in the repair work. However, the result may not sustain as water will still find its way down via other weak points.

(b) Buried Pipes

(i) Repair

In order to locate source of the leakage, the pipe works may need to be exposed for visual inspection. Alternatively, advanced instrument may be introduced to scan and identify the source. The whole component bearing the defect should be replaced as far as practicable for more durable results. In principle, repair works should not create further weak points for leakage. Pressure test should be carried out before covering up.



4.1 Dealing With Building Defects & Nuisance

(ii) Water supply pipes

Water pipes are often subject to high pressure and vibration. They therefore tend to be more problematic over time. Hot water pipes will be even more vulnerable due to thermal movements resulting from constant hot and cold cycles. If an overhaul of such system is considered, readers should consider relocating and exposing the pipes above ground as far as possible. Alternatively, the pipes can be installed in trenches or pipe ducts and made accessible by panels for inspection and repair. Readers may refer to the guidelines published by the Civil Engineering Department and the Works Bureau on the investigation and repair of buried water-carrying services as mentioned in Appendix 7.

(iii) Pipes sleeves

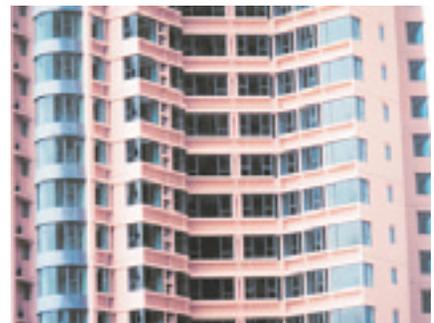
Pipes passing through walls or floors should be protected by sleeves. They would become weak points in resisting the invasion of water if the gap around the sleeve and the pipe has not been filled to their entire depth with suitable waterproofing materials. Depending on the nature of the pipes and the compartment they pass through, such filling materials should also be elastic or with fireproofing properties.

(c) External Walls

(i) Common sources of leakage

Apart from sleeves, common sources of leakage in external walls are:

- deep cracks/crevices penetrating the finishes and the body of the wall.
- defective concrete found in the wall.
- defective or loss of external finishes to protect the wall from direct attack of rain.



(ii) Common repair methods

- Cracks/crevices on external walls can either be repaired by chemical injection or opening up followed by repair with waterproofing mortar.
- Weak points in the wall such as holes, honeycombs, dirt and foreign matters should be removed and patched up by suitable waterproofing mortar.

4.1 Dealing With Building Defects & Nuisance

4.1.3(c) External Walls (continues)

The repair can be done internally or externally, depending on the location of the weak spot. Upon application of the repair mortar or chemical injection, the surface can be smoothed and plastered. The external wall should then be covered with finishes to match with existing ones. If considered necessary, special additives to the mortar or rendering on the external wall can be applied to improve its waterproofing abilities.

(d) Windows

If deformed windows or frames are causes of the water leakage, they should be replaced.

All sashes should be tightly fitted. If leakage occurs at the junction between the sash and the frame, the gasket around the sash should be checked and if necessary, replaced.

If leakage occurs at junction between members of the frame assembled together by rivets, the sealant for the junction gap should be checked and re-applied if necessary.

If leakage occurs at the filling materials between the frame and the wall, the following remedial measures can be used concurrently to ensure performance:

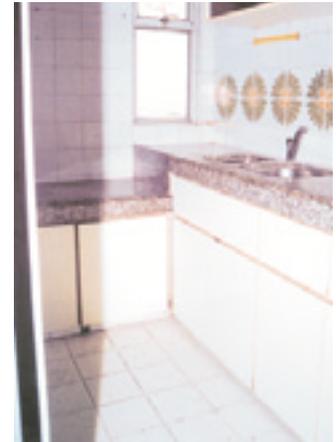
- The defective packing should be replaced with compacted waterproof cement sand grouting.
- External junction between the frame and the packing should be further protected by applying suitable mastic or silicon sealant along the perimeter of the frame.
- The window sill in the external wall should be graded to fall away from the window to avoid ponding. A groove in the external wall finishes at the top of the window opening should also be formed to drip-off the water carried from the external wall above.
- Internally, the cracks on the packing around the frame can be sealed by injection of suitable materials.

4.1 Dealing With Building Defects & Nuisance

(e) Bathrooms, Kitchens or Balcony Floors

(i) Sources of leakage

In bathrooms or kitchens, the source of the leakage must be identified before any repair works can be considered. If it is the loosening of components in the drainage system such as bottle traps under the sink, basin or bathtub, simple fixing can stop the leak. However, if defective water supply pipes are identified as the culprit, licensed plumbers should be engaged to replace the defective parts or overhaul the entire system.



A common cause is defective sealant around the bathtubs, basins, sinks or defective waterproofing system at the floor. This problem can be easily dealt with by replacement of sealant. However, if there is a "wet floor"



habit, the waterproofing system of the floor is put to test. Should the cause be identified as water spilled on to the floor, it is always advisable to reconstruct the entire waterproofing layer instead of patch repair.

In balconies where ponding may be frequent due to heavy rain or blockage of drain outlets by rubbish, the waterproofing system has to be sound in order not to create nuisance to the floor below.

(ii) Repair

Before reconstructing the waterproofing layer of a floor, all the sanitary fitments and finishes should be removed to allow the formation of a continuous waterproofing construction.

Waterproof cement sand screeding or other similar materials is commonly used. The screeding should be applied to have sufficient upturns at the base of the walls, and have an adequate fall to the floor drain to prevent water ponding.

Sanitary fitments are to be installed on top of the waterproofing layer without penetrating it. The floor surface under the bath tub or shower tray should be formed with a fall to avoid trapping water at their bases if water leakage ever occurs.

4.1 Dealing With Building Defects & Nuisance

4.1.3(e) Bathrooms, Kitchens or Balcony Floors (continues)

After applying the floor finishes, the joints between tiles should be grouted properly with waterproof cement mortar.

Junctions of wall finishes and bathtub or shower trays should be sealed with suitable silicon sealant. Wall tiles should be fully bedded with cement sand mortar and joints fully grouted with waterproofing cement. Gaps between marble tiles should be fixed with flexible waterproofing joint sealant to prevent long term minor movement giving rise to cracks for water penetration.

Should the source of leakage be identified from drains embedded in walls and floors, repair methods are similar as described in Section 4.1.3(b) of this Chapter. Readers should always consider changing an embedded drain to an exposed one to avoid future difficulty in maintenance.

(f) Common Drains

The defective section(s) should be replaced and securely fixed onto the external walls or floors. For old buildings, building professional should be appointed to assess whether it would be more economical to replace all the common drains in the long run.

The subdivision of a dwelling unit into smaller self-contained independent units usually includes the additional partitions, toilets and pipes embedded in a raised floor slab. Due to site constraints, such works usually result in contravention with provisions under the Buildings Ordinance and allied regulations. Furthermore, the embedded drains or supply pipes are hardly accessible for maintenance and repair. Should water leakage occur causing nuisance to the floor below and cannot be resolved with the owners/occupants above, readers may direct their complaints to the Food and Environmental Hygiene Department (FEHD).



(g) Underground Drains

(i) Manholes

Manholes should be readily accessible for regular maintenance. Access to them should not be obstructed by floor finishes, planters or furniture items.



4.1 Dealing With Building Defects & Nuisance

Foul air leaking from manholes could be stopped by repairing the edges of the manhole opening, cracks in the manhole and manhole cover or using a double-sealed type manhole cover.

Manholes and their covers may subside or may be damaged due to unforeseeable heavy traffic loads. Under such circumstances, the existing manhole should be replaced by a more heavy duty manhole with suitable designs.

(ii) Drains

Conditions of underground drains with diameter 100mm or more can be checked by close-circuit television (CCTV) camera. The scanning can reveal cracks, leakage or other defects along the full length of the drain. Replacement work can then be implemented accordingly.

(iii) Blockage

Minor blockage of drain can usually be cleared either by high-pressure water jet or rodding. In case of serious blockage by materials such as cement, the defective portion might have to be exposed and replaced.

4.1.4 Slopes and Retaining Walls

Typical Routine Maintenance Works for Slopes and Retaining Walls are as follows:

Features	Typical Maintenance Works Required
<p>(a) Surface Drainage System (e.g. drainage channels, catchpits and sand traps)</p> 	<ul style="list-style-type: none"> • Clear debris, undesirable vegetation and other obstructions. • Repair minor cracks with cement mortar or flexible sealing compound. • Rebuild severely cracked channels.
<p>(b) Weepholes and Surface Drainage Pipes</p> 	<ul style="list-style-type: none"> • Clear obstructions (e.g. weeds and debris) in weepholes and pipe ends. • Probe with rods for deeper obstructions.

4.1 Dealing With Building Defects & Nuisance

4.1.4 Slopes and Retaining Walls (continues)

Features	Typical Maintenance Works Required
<p>(c) 'Rigid' Surface Cover (e.g. chunam and shotcrete)</p> 	<ul style="list-style-type: none"> • Remove undesirable vegetation growth. • Repair cracks or spalling. • Regrade and repair eroded areas. • Replace surface cover which has separated from underlying soil.
<p>(d) Vegetated Surface Cover</p> 	<ul style="list-style-type: none"> • Regrade eroded areas with compacted soil followed by re-planting. • Replant vegetation in areas where the vegetated surfacing has died.
<p>(e) Rock Slopes and Boulders</p> 	<ul style="list-style-type: none"> • Seal up open joints or provide local surfacing to prevent ingress of water. • Remove loose rock debris. • Remove undesirable vegetation growth.
<p>(f) Structural Facings</p> 	<ul style="list-style-type: none"> • Re-point deteriorated mortar joints on masonry face. • Repair cracking or spalling of concrete surface and replace missing or deteriorated joint fillers and sealants.

Note : Safe and easy access should be designed and maintained for carrying out the maintenance works.

4.1 Dealing With Building Defects & Nuisance

4.1.5 Asbestos-containing Materials

(a) Statutory Control

Sections 69 to 79 of the Air Pollution Control Ordinance (Chapter 311) provides for the control of work involving asbestos in buildings. Only qualified asbestos consultants, contractors, supervisors and laboratories registered with the Environmental Protection Department (EPD) can undertake asbestos related activities.

(b) Appointment of Specialist

Building owners and occupiers should be cautious about the presence of asbestos materials in their living environment. If there are such materials, alterations and additions to their existing premises or demolition of UBW may release harmful fibre to the air, causing health hazard. In case of doubt, they should appoint a registered



asbestos consultant to carry out an investigation, suggest asbestos abatement plan and / or asbestos management plan if asbestos is found, and supervise the abatement work. All the removal work of asbestos containing materials should be done by a qualified contractor.

(c) Alternatives in Dealing with Asbestos-containing Materials



The common remedial method is either to completely remove such components or to encapsulate them properly by non-asbestos containing materials to prevent the release of such fibre.

4.1 Dealing With Building Defects & Nuisance

4.1.5 Asbestos-containing Materials (continues)

(d) Handling Asbestos-containing Materials

Extreme care must be exercised in removing asbestos-containing components to prevent the asbestos fibres from releasing into open air. The workers have to wear protective clothing and special masks with filters. The works area has to be contained with the quality of air carefully monitored.

(e) Disposal



Asbestos-containing components cannot be disposed like ordinary building debris. They should be isolated and contained in a controlled environment, collected and placed in approved containers for burial in a designated Government land fill.

4.1.6 Advertisement Signboards

Advertisement signboards on external walls should be inspected and maintained regularly to ensure their structural stability and integrity for the safety of the public. These signboards together with their supporting structures should be removed immediately if they:



- are abandoned or no longer in use;
- have adverse structural implications on the parent building structure;
- cause nuisance or create obstructions to the public or occupiers of the building; or
- become dangerous or is liable to become dangerous to the public.

4.1 Dealing With Building Defects & Nuisance

4.1.7 Dealing with Unauthorized Building Works (UBW)

Owners have the legal responsibility to voluntarily remove the UBW in their properties and reinstate the properties in accordance with the approved plans. Individual owners with financial difficulties in carrying out the rectification works may apply for the Building Safety Loan Scheme from the Buildings Department (BD).



OC can also institute civil proceedings against any individual owner under the DMC to stop or remove UBW in the common area. The BD takes priority action against UBW which are under construction to prevent their proliferation.



Section 4.2.2 (a) of this Chapter, provides some guidelines on how to comply with an UBW Removal Order issued by the BD.

4.1.8 Defects Caused by Third Parties

(a) Discovering Building Defects

When the owners or the management discover serious building defects in their buildings that are caused by third parties, activities at adjoining work site or an accident, they should report to the Buildings Department immediately.

In case of emergency, they should report to the Police who might have to arrange for temporary evacuation of parts or whole of the building. In addition, they may also engage a building professional to investigate the cause and extent of the damage and the condition of the building to ascertain whether it is still safe for occupation.

4.1 Dealing With Building Defects & Nuisance

4.1.8 Defects Caused by Third Parties (continues)

(b) Interim Remedial Works



After the investigation by the BD and/or the engaged building professional, they may specify temporary measures to be implemented for eliminating the immediate hazard before the long term remedial actions. Such measures may include temporary shoring or support to certain parts of the building, the removal of the dangerous part, and the closure of part or whole of the building. In case of emergency, the temporary safety measures may be carried out by the contractor of the BD instead of that from the adjoining works site or the affected owners to assure safety of the public.

(c) Liabilities

Liability should be identified with the help of building professionals and legal advisers. Insurers should be notified immediately of the incident because they may wish to be involved in the investigation process. If the liable party is identified and a prompt agreement on the repair works and compensation can be reached, the liable party should take immediate action to remove any hazard posed or rectify the defects caused.

In the event that the liable party cannot be identified or not willing to take up the responsibility of rectifying the defects, owners will have to take actions accordingly for their own sake. Should the repair works be considered urgent and taken up by the BD, owners shall be required to pay the costs incurred. The owners may recover such costs from the liable party, if necessary, through legal action.

(d) Relevant Sections

Section 4.3 of this Chapter provides more details on the implementation of the remedial works.