



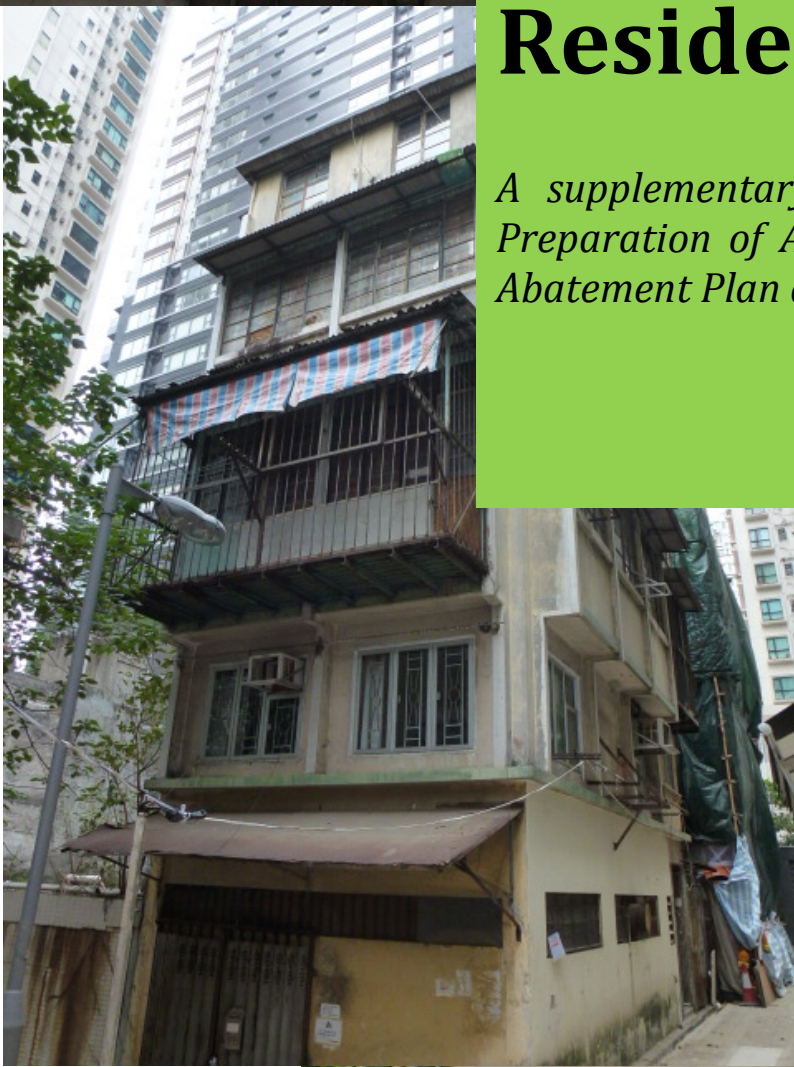
# Asbestos: Investigation, Abatement & Management

## Reporting Guidelines Module No. 2: Residential Blocks

*A supplementary guide to the Code of Practice on Preparation of Asbestos Investigation Report, Asbestos Abatement Plan and Asbestos Management Plan*

Asbestos Management and Control Section  
Environmental Protection Department

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# Contents

## Part 1 - Preparation of Asbestos Investigation Report

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		<b>Page</b>
	Introduction	1
Section 1	Asbestos Investigation Planning	1
Section 2	Site Investigation	2
Section 3	ACM Identification	5
Section 4	Bulk Sampling	6
Section 5	Material and Hazard Assessment	6
Section 6	Format of Asbestos Investigation Report	7
Section 7	Meeting Environmental Requirements and the respective Codes of Practice	7

## Part 2 - Preparation of Asbestos Abatement Plan

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		<b>Page</b>
Section 8	General specification requirements	7
Section 9	Method statements for asbestos removal	8
Section 10	Asbestos Work Zone Plans	9

## Part 3 - Preparation of Asbestos Management Plan

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		<b>Page</b>
Section 11	Preparation of Operation and Maintenance Plan	9

## Appendices

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		<b>Page</b>
Appendix A	Photographs of common ACMs	12
Appendix B	Illustration of typical ACMs occurrences	15
Appendix C	Checklist for site investigation	16



## Introduction

Asbestos containing materials (ACMs) in residential blocks are very common throughout Hong Kong and the type and quantity of ACMs present often depends on the manner of construction of the residential block. System-built residential blocks were previously common – particularly for Government-owned premises and ACMs type and location can be similar from block to block and from housing estate to housing estate. The use of corrugated asbestos cement sheet is particularly common in Hong Kong residential premises due to the weather, the common practice of building extensions, and the requirement for an economic building material for use in village/rural areas.

Following the total ban on the import and use of asbestos in Hong Kong in April 2014, exposure of the population to potential asbestos hazards is likely to be concentrated in the building trades associated with maintenance, renovation and demolition. Since the majority of buildings in Hong Kong are residential, the comprehensive identification and management of ACMs in residential blocks is very important to prevent people in building trades from exposure to asbestos.

Whilst the procedures and advice detailed in the EPD's Code of Practice on Asbestos Control "Asbestos Work Using Full Containment or Mini Containment Method" and the General Guidelines should be followed, these additional guidelines have been produced for Registered Asbestos Consultants (RAC) to prepare the asbestos investigation reports (AIR) and asbestos abatement plans (AAP) which are suitable for residential premises. Implementation of asbestos management plans (AMP) are considered good practice for these premises - due to the potential exposure of building tradesmen and the large quantity of ACMs, both high and low risk, that can be present - and specific guidelines for AMP are included.

## PART ONE: PREPARATION OF ASBESTOS INVESTIGATION REPORT

### Section 1 – Asbestos Investigation Planning

1.1 Planning for the asbestos investigation of residential premises should follow the procedures described in the General Guidelines with the following additional measures specific to residential premises:

- The use of ACMs on external elevations and roofs is very common in residential premises. Access to and inspection from adjacent blocks that offer a good vantage point is often important for comprehensive investigation. Inspection from scaffold may have to be arranged.
- Larger premises may have their own electrical sub-stations, switch rooms and emergency generator rooms. Modules 4 & 6 should be consulted for investigation planning in these areas.
- Asbestos cement underground water mains are common in Hong Kong. Excavation and investigation for these is a requirement when building demolition and subsequent site formation works are planned. Establish with the Employer whether this investigation is required and who is responsible for excavation works.

## Section 2 – Site Investigation

### 2.1 Preliminary site walkthrough and assessment

The initial phase of investigation of residential premises is often restricted to a brief walkthrough/assessment of external and common areas due to limiting disturbance to residents. On site checks should follow the procedures described in the General Guidelines with the following site specific procedures:

- Check any available as-built drawings against current site situation. Identify if original pipework and flues/chimneys have been removed or relocated and identify locations for investigation to check for buried remnants in walls, service voids etc.
- Inspect the external elevations and assess how access is going to be safely made, and whether adjacent buildings need to be accessed for further vantage points.
- Identify all plant rooms within the premises and assess constraints for comprehensive investigation.
- Dogs in village areas or left on rooftops can present an access problem. In rural areas, investigation may require assessment of protection of the investigation team from snake/insect nuisance, heat stroke during hot weather etc.

2.2 At the end of the investigation planning stage, and with results obtained from the preliminary walkthrough, the RAC should be in a position to produce a risk assessment of the planned investigation for submission to the Employer.

### 2.3 Site Investigation

The RAC shall enter the premises using whatever access arrangements have been decided upon during the pre-planning and site assessment stage. The asbestos investigation should be carried out as described in the General Guidelines with the following site specific procedures:

- Access to all areas is important or ACMs may be missed. Investigation of service ducts inside residential tower blocks must take place, ceiling voids or roof spaces in houses entered and inspected.
- Different types of residential premises may require different emphasis on investigation as follows:

#### **Residential Tower Blocks**

- i. Because of the common occurrence of corrugated asbestos cement sheet (CACS) on external building elevations and roofs, all external surfaces of the building must be inspected. This can be difficult in congested areas with many buildings adjoining the target premises. Inspection from other buildings should take place. Refer to the ACM Identification & Abatement Library sheet for CACS – it can be concealed beneath other materials. Inspections from above and below sheeting should take place to establish if different roof/canopy layers are present. If multiple roofing layers are present and it is suspected that not all layers are visible, then the area concerned must be entered for further investigation or listed as non-accessible and concealed CACS assumed to be present. Flat profile asbestos cement sheet can be used as sight screens to building services and clothes drying areas.

- ii. The electricity supply in residential tower blocks is one of the most common areas to find ACMs, in the form of asbestos-containing fuse boxes and fire protection boarding or packing in and around electrical supply risers. Switch or meter rooms on each floor can have insulation/cement board lining to doors, walls and as backing to fuse boxes / meters. Main switch rooms can have ACMs – such as arc chute boxes – inside main control panels. Premises with electrical generator plant can have ACMs associated with the generator such as exhaust insulation and flexible joints to air intakes. Asbestos containing fuse boxes can occur in common area meter rooms, corridors, staircases, plant rooms and in each residential unit. The RAC should ensure that all fuse boxes are inspected and opened up if necessary. Cable and electric cable/ducting should be opened for investigation. This may require attendance of registered electrical workers and/or re-investigation at a time when they can be thoroughly inspected, eg. during the 5 yearly electrical inspection.
- iii. Lift machine rooms commonly contain ACMs in the form of CACS canopies to entrances/roofs, ACM fuse boxes, ACM coatings to electrical wiring in control panels and as friction gaskets to lift brakes. Refer to module no. 4 for Factories and Plant Rooms for further advice on inspecting all plant room areas.
- iv. Vinyl floor tiles/sheeting and their underlying adhesive are common ACM occurrences and investigation of residential units can be complicated by the large number of different floor coverings present of widely differing age of installation. The ACM Identification & Abatement Library sheet for these materials should be consulted for advice on investigation and the problems of remnant asbestos adhesive and concealment beneath furniture.
- v. Asbestos insulation is common to buried hot water pipework in Hong Kong, including asbestos rope/cloth and plaster. Residential blocks can have both current and redundant hot water pipes supplies inside kitchens and bathroom/toilets. The most common provision of hot water is from wall mounted gas or electric water heaters, although floor or ceiling mounted water boilers also occur. If the existing hot water supply is visible, the RAC must carry out checks to ensure that a redundant buried supply is not missed during the investigation. Buried pipes can be identified from a desk study of as-built drawings, from discussion with any maintenance staff employed by the premises management, and from evidence of water valves visible in walls, cut-off pipe ends etc. Metal detectors are recommended for use during checking for buried pipes and for identifying areas to break open for investigation. The investigation of pipework must trace both current and any redundant pipes from their source to their outlets. The AIR should confirm that this investigation has taken place or indicate – using drawings - any areas of uncertainty. Duct panels and bathtub panels and access hatches should all be checked. Asbestos cement sheet can have been used in all these areas.
- vi. Air conditioning – although commonly wall or window mounted to each residential unit - can be centrally provided from air handling units (AHU) sited in a central plant room or in each unit. Checks for flexible joints, flange gaskets and heater boxes should be made. A/C ducting should be checked for internal/external linings and traced from source to outlet checking flange gaskets. Each different size ducting should be checked – ACM flange gaskets can occur in larger size ducting but not in smaller or vice versa.

- vii. Roof tiles to flat roofs can occur, but are usually concrete or terracotta. They must always be checked. Asbestos roof tiles typically have a manufacturers chop mark embedded in the top surface.
- viii. Where building demolition is to occur followed by site formation works for new construction, the RAC should recommend to the Employer that the investigation includes for underground water mains. This may have to be carried out on a return visit after building demolition but before commencement of site formation.

### Houses

- ix. Luxury detached houses – particularly older colonial-type – can contain similar common ACM occurrences to tower blocks, such as pipe insulation, air conditioning related, CACS, fuse boxes and vinyl floor coverings.
- x. Asbestos ceiling and wall partitions are more likely to occur in these premises and the RAC should inspect all these fixtures – gentle knocking on walls and ceilings with a metallic item such as key/coin and listening for the sound produced can be a good initial indicator that these materials are present. A comprehensive check in all rooms/areas must be carried out. Random checks are not sufficient as different materials may have been used in different areas. All ceiling and roof voids must be entered and checks made for multiple layers of ceiling sheeting. Roof tiles can have multiple layers or underlying asbestos cement sheeting. Asbestos tiles to pitched roofs are not common in Hong Kong but should always be checked.
- xi. Fireplaces and associated flues and chimneys should be checked for internal linings. Flexible metal cable conduit to electric heaters and other plant can have internal asbestos string.
- xii. Central A/C plant rooms can be present. Swimming pools will have associated plant rooms. Refer to module no. 4 for Factories and Plant Rooms for further advice on inspecting these areas.
- xiii. Asbestos roof tiles to flat roofs are not common, usually being concrete or terracotta, but they must always be checked.

### Village Housing and Squatters

- xiv. These premises can contain similar common ACM occurrences to tower blocks, such as pipe insulation, air conditioning related, CACS, fuse boxes and vinyl floor coverings, although buried redundant pipe work is much less common.
- xv. CACS sheeting is very common, particularly to squatter structures or extensions to village housing. Multiple layers of roof and wall sheeting occur as residents have added additional layers to prevent water leaks. As a result, CACS can be totally concealed within other layers. Prior to building demolition, the RAC must break through wall and roof layers at regular intervals to check for concealed CACS. A photographic record of this investigation should be included in the AIR.
- xvi. CACS has been put to many uses in village and squatter areas. It is used as fencing to properties, lining to access paths and water channels, dog kennels, store rooms and external toilets. Prior to building demolition and adjacent land clearance checks should be made for these occurrences.
- xvii. Asbestos cement/insulation board can have been added as fire protection to cooking areas.

- xviii. Asbestos roof tiles to flat roofs are not common, usually being concrete or terracotta, but they must always be checked.

## Section 3 - ACM Identification

- 3.1 The ACMs that may be present in residential blocks depends on the construction of the building, the age of the plant and associated equipment, and whether previous renovations have taken place. The ACM Identification and Abatement Library should be referenced for details of associated ACMs that may occur. The RAC should bear in mind that this is not a definitive list of ACMs in Hong Kong and they must use their knowledge, experience and a thorough investigation to identify all ACMs on site.

### Associated ACMs

- 3.2 The following external ACMs can occur:
- asbestos concrete roof tiles to main roofs and podium levels
  - bituminous roof coverings
  - asbestos cement vent pipes to rubbish chutes
  - corrugated asbestos cement canopies and roof/wall sheeting, fences and linings to paths and water channels
  - asbestos concrete wall grille, louvre panels and balcony grille panels
  - asbestos cement wall sheeting, cladding and sight screens
  - asbestos cement drainage gutters, drain pipes and soil pipes
  - asbestos cement underground water mains
  - asbestos insulation to external hot water pipework
  - asbestos insulation/flues to chimneys
  - asbestos gaskets or flexible joints to external air conditioning/extract systems
  - linings to condenser pipe support brackets
  - packing materials to cable/pipe exit points
  - coatings to cables exiting/entering building
  - asbestos containing fuse boxes to external plant
  - asbestos packing inside building expansion joints.
- 3.3 Common internal occurrences can include the following ACMs:
- sprayed coatings – both to ceilings, walls and support beams – particularly to common areas, fire escape areas and plant rooms
  - asbestos cement partition wall sheeting and cladding
  - asbestos cement bathtub and duct panels
  - asbestos ceiling tiles and sheeting
  - asbestos cement drain pipes
  - asbestos cement soil pipes to toilet pans
  - asbestos concrete refuse chutes (and ACM gaskets to access hatches)
  - asbestos insulation to hot water system – pipework (buried and surface-run), and boilers
  - asbestos insulation and flexible joints to emergency electric generators
  - asbestos sheet linings to cooking benches as base boards, work surfaces and as wall backing boards

- asbestos cloth flexible joints and flange gaskets to ventilation extract systems and air conditioning systems
- linings to air conditioning condenser pipe support brackets
- asbestos sheet lining to fire doors
- packing materials (cloth, rope, plaster, mastic) to cable/pipe exit/entry points
- coatings (cloth, plaster and paint) to cables in building
- asbestos packing or sheeting to bus bar, cables and cable trays through floor and wall slabs
- asbestos insulation board boxing to electrical bus bars and cable trays
- asbestos containing fuse boxes
- asbestos vinyl floor tiles/sheet and adhesive
- Hard non-woven asbestos gaskets to pipe flange gaskets and plant room equipment
- asbestos friction gaskets to lift motors – passenger and cargo lifts

- 3.4 The above lists are not a fully comprehensive list of possible ACMs, just the most likely. It is emphasized that it is the duty of the RAC to inspect all areas for both commonly and rarely occurring ACMs. The illustrations attached as appendix B summarises typical ACMs and their locations.
- 3.5 Since residential blocks can have their own plant rooms and electrical substations, the modules for these type of rooms should also be consulted for details of ACMs present.
- 3.6 The ACM Identification and Abatement Library should be consulted for all the associated ACMs listed since they provide recommended best practice for ACM identification.

## Section 4 - Bulk sampling

- 4.1 Bulk sampling should be carried out as detailed in the General Guidelines with the following site specific procedures:
- Best practice advice for bulk sampling is included where necessary in individual ACM Identification and Abatement Library sheets for the associated ACMs.
  - Any sampling of elements of plant that is to be returned to working order shall require the prior permission of the owner. The RAC should use visual identification, where possible, to avoid damage.
  - Where building demolition is to occur, all wall and roof materials where multiple layers are suspected to be present, must be broken open to check for concealed ACMs.

## Section 5 – Material and Hazard Assessment

- 5.1 The general guidelines for production of material and hazard assessments should be followed. Residential premises can contain a wide variety of ACMs, both low and high risk. Throughout the investigation the RAC should record all details necessary for a proper hazard assessment. Residential tower blocks can contain many different room types with differing occupation rates and activities making hazard assessments complicated. Differing assessments for differing areas may be necessary. It may therefore be helpful for material



and hazard assessments for residential blocks to detail assumptions made and opinions held so that the assessment is more understandable and any disputes over the assessment can be more easily discussed.

- 5.2 Should any ACMs be identified which are in a poor condition, then the RAC should immediately report these to the Employer and recommend remedial measures.

## **Section 6 – Format of Asbestos Investigation Report**

- 6.1 The requirements of the Code of Practice and general guidelines for the expected format and contents of the AIR should be followed.
- 6.2 The AIR should include the following information specific to residential premises:
- Details of the risk assessment made prior to investigating the site and the precautions taken to access the site/plant for investigation.
  - Investigation of buried services in residential buildings can be difficult or unwanted by residents due to damage, and areas may not be fully accessed and inspected. The AIR section and drawings detailing inaccessible areas should be comprehensive. The default assumption for inaccessible areas is that ACMs exist unless as-built drawings can prove otherwise. Assumptions made should be consistent with ACM identification elsewhere as well as predicted on the type of use of the room/area.
  - If buried or concealed services are present and inspected, the AIR should include full details of the extent of breaking out including locations plans and photographs detailing the extent of investigation. Confirm that pipes have been traced from source to outlets.
  - Detail APCO requirements on asbestos reporting and removal from residential – refer to section 7 of the general guidelines for further details.

## **Section 7 Meeting Environmental Requirements and the respective Codes of Practice**

- 7.1 The general guidelines for preparation of AIR & AAP should be studied for further advice and recommendations for preparing the report. Lastly, the specific guidance in this AIR/AAP module should be studied to produce a specific AIR / AMP / AAP for EPD's vetting and comment. Because larger residential blocks can contain numerous plant rooms and even their own electrical substations, the modules for these areas should also be consulted.
- 7.2 The RAC and owner of premises are encouraged to submit AIR to EPD even if the report indicates that the premises has no ACM/exempted ACM found.
- 7.3 The RAC shall ensure that the AAW are carried out in compliance with other environmental / health and safety regulation, and shall include such measures in the submitted AAP / AMP.

## **PART TWO: PREPARATION OF ASBESTOS ABATEMENT PLAN**

### **Section 8 – General Specification Requirements**

8.1 The general guidelines for the preparation of Asbestos Abatement Plan all apply for the preparation of an AAP for residential blocks. However, some of the general requirements may need further consideration and adjustment to make them relevant and applicable to residential blocks. Occupied premises can be a problem to access and work in, and unwanted damage to fittings can be a constraint. The common occurrence of high risk ACMs, often in difficult access locations with problems for erection of full containment work zones, can require the general specification to be expanded to include additional specifications – such as scaffolding design and erection. Asbestos abatement should be carried out only when surrounding areas can be shut down and vacated. The RAC should consider the requested scope of asbestos abatement and liaise with the Employer to discuss options for abatement. Review the following requirements to ensure the removal contractors can meet the general specification for the abatement works:

- Responsibility to isolate both electric and gas supplied plant.
- Site access requirements and impact of abatement work – any particular access restrictions for vehicles, security arrangements? Any particular resident demands for access, notification etc. ACMs are common found in electric risers. Any work will impact electrical supply. Similarly abatement of ACMs to hot water systems will impact water supply. Are arrangements for temporary supply necessary?
- Residential tower blocks, particularly common areas, can have high ceilings. Are temporary work platforms required? Which type is suitable and what protection measures are necessary to avoid contamination during abatement?
- Storage of equipment
- Review the specification for waste handling and disposal.

### **Section 9 – Method statements for asbestos removal**

9.1 The method statements for asbestos removal should follow the format detailed in the General Guidelines as follows:

- Introduction and description of work
- Work zone setup
- Inspection of work zone setup
- Asbestos removal and inspection
- Air monitoring
- Waste management

9.2 **Asbestos abatement:** The standard general guidelines for specifying asbestos removal inside work zones should be followed – dependent on the ACMs being removed. Procedures specific to residential blocks should also include:

- Details on measures for minimizing fibre release. Asbestos abatement in work zones adjacent to occupied areas of premises must fully consider the protection of other building users. Applicable to both segregated and full containment work zones, details must be provided on how the removal contractor will sufficiently wet friable ACMs to reduce the release of fibres during waste collection, disposal and cleaning of the site.
- Detail the sequence of removal work. High level elements should usually be removed first.
- When ACMs are contained within electrical plant, detail removal measures and cleaning of adjacent surfaces. Detail how any plant to be left in-situ can be satisfactorily cleaned and inspected. The RAC should specify the disposal or retention of all materials in the work zone - once again considering economic cost if various remedial options are available.
- Work in tower blocks on electric risers is best carried out at the same time on all floors to ensure the entire riser is contained within the work zone. This enables easier cleaning and decontamination. However, the removal contractor may not have enough plant – such as air movers – for all work zones. A buffer system should therefore be implemented whereby the lowest work zone in a sequence is not worked in and is used to separate the abatement work from non-work areas until erection of further work zones down the building.
- If the AIR has reported any uncertainty about tracing of pipes from source to outlets, the AAP should detail any measures for further tracing and breaking out of pipes in work zones.
- Flues and chimneys are difficult to remove. Access is usually a problem and work zones can impact on adjacent residents. The ACM Identification and Abatement Library sheet for these items should be studied for advisable abatement measures. Work procedures that need careful consideration are scaffold erection, work zone erection on the scaffold, protective measures for window openings adjacent to the work zone, whether power tools have to be used during any non-asbestos works. If asbestos flange gaskets are present and the flue needs to be dismantled, consider loading on work platforms as they are dismantled and require regular transfer out of work zone .

9.3 Reference should be made to the ACM Identification and Abatement Library for the ACMs associated with residential blocks. These reference sheets provide specific advice for the preparation of AAP and inspection of abatement works that should be included in the AAP prepared.

## Section 10 – Asbestos Work Zone Plans

10.1 The work zone plans should follow the format detailed in the General Guidelines and any specific advice for ACMs associated with residential premises detailed in the ACM Identification and Abatement Library.

## Part 3: PREPARATION OF ASBESTOS MANAGEMENT PLAN

### Section 11 – Preparation of Operation and Maintenance Plan

- 11.1 Following an asbestos investigation, if ACMs are to remain in-situ in a residential block, the RAC should recommend to the Employer that an operation and maintenance plan (O&MP) is prepared and implemented for the identified ACMs.
- 11.2 Section 9 and 10 of the EPD's Code of Practice on Asbestos Control "Preparation of Asbestos Investigation Report, Asbestos Management Plan and Asbestos Abatement Plan" provides details on the requirements for the production of an O&MP, and the document that the RAC prepares should comply with these requirements.
- 11.3 In addition to guidelines detailed in the Code of Practice, the RAC is advised to consider the following further measures specific to preparation and implementation of O&MP for residential blocks:
- Organization chart for implementation of the O&MP should include details of the building management for the premises. It is possible that contractors employed to renovate building exteriors or interiors could disturb ACMs. This is particularly likely during scaffold erection to blocks with corrugated cement sheet canopies and roofs. Any group of people who commission such works should be included in the implementation of the O&MP. Where ACMs occur in individual residential units, a comprehensive organization structure and record keeping system will be vital to encourage proper ACM abatement works and record works carried out, particularly on change of residents in a unit.
  - The condition of ACMs, or assumed ACMs, concealed in electrical supply systems and other plant will be difficult to record and monitor unless investigations are synchronized with regular maintenance inspections of plant. If ACMs have only been assumed to be present – pending confirmation on future investigation – then the condition, type, quantity of ACMs will have to be amended in both the AIR and O&MP as opening-up and inspections allow. The O&MP should detail this requirement.
  - Hazard labelling of ACMs – whilst it can be done on accessible items can be difficult for external items such as canopies and roofs and internal buried services. The type of labeling and the likely most effective for the situation concerned should be carefully considered. Room-type labels – fixed to notice boards, on doors, next to light switches etc., - may be a more effective notification in some circumstances.
  - The RAC should discuss building management staff turnover rates with the Employer. If they are high, the implementation of staff asbestos awareness training will need careful consideration.
  - The EPD CoP recommends a surveillance scheme of re-inspection once every two years. However, the RAC should assess the amount of ACMs in the premises, the quantity of high risk ACMs, their location and the likelihood of damage. It may be advisable to have shorter re-inspection periods.
  - Introduction of any materials containing asbestos into premises is now totally banned in Hong Kong. Management of residential blocks are at risk of not meeting this requirement if a monitoring and checking scheme is not implemented as part of the O&MP. This specifically applies to introduction of plant from countries that may

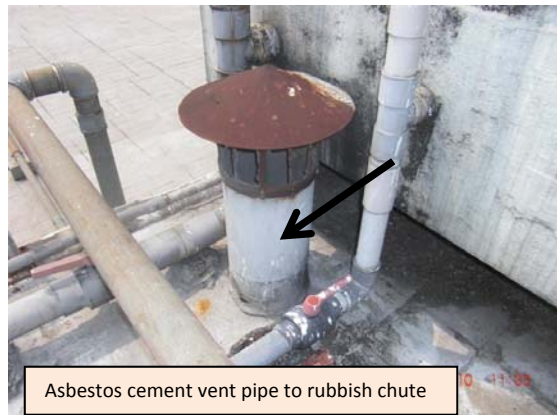
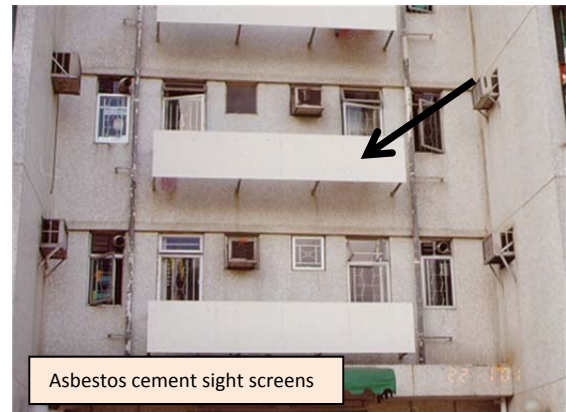


still be using asbestos in the manufacture of their products. Also the provenance of sheeting used to produce hard non-woven plant gaskets should be checked. Electrical and engineering contractors may have stocks of asbestos-containing gasket material that could be used without the Employers knowledge. All works specifications should specify the use of non-ACM gaskets and the RAC should check the material before use. Certificates confirming no asbestos materials may not be reliable – depending on the country of manufacture – and bulk sampling and analysis is recommended in case of doubt. The O&MP should contain a section detailing the procedures for vetting new plant installation and maintenance materials.

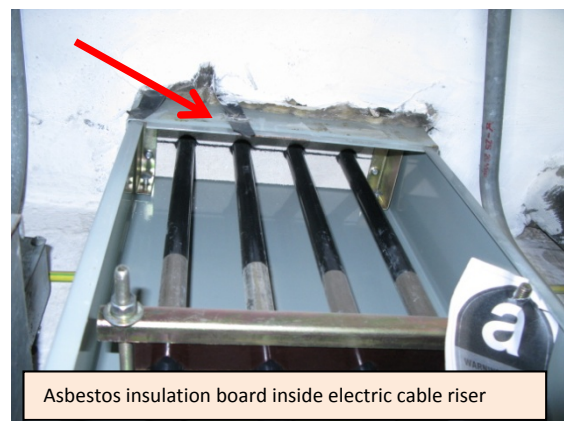
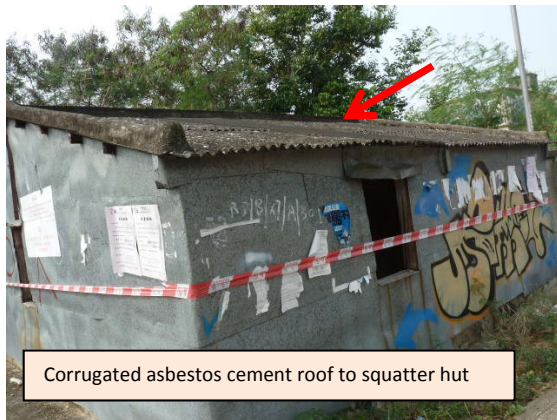
- General electrical and plumbing contractors may have to be part of the emergency response team to assist in remedial actions for disturbed and damaged ACMs in residential premises. Their safety procedures for shut down and isolation of plant should be incorporated into the method statements for likely emergency action, and if necessary they should be included in training drills for use of personal protective equipment and ACM cleanup.
- Prior to the implementation of an O&MP the RAC should consider the requirement for any protective measures for ACMs. Impact damage in a busy premises, or water leaks, are always a possibility and abatement plans could include protective enclosure measures, for example timber boxing to ACM insulated pipework and flues.

## Appendix A:

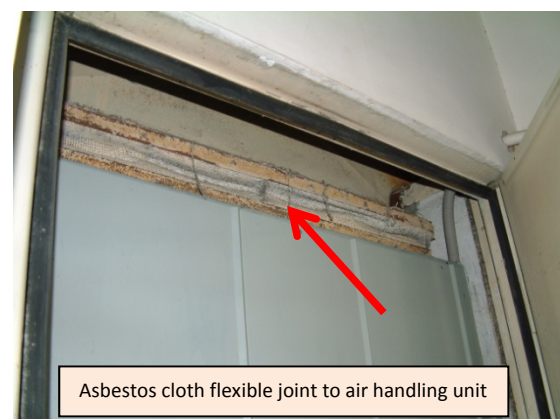
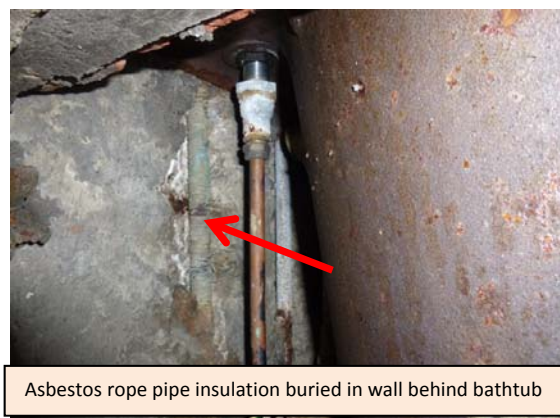
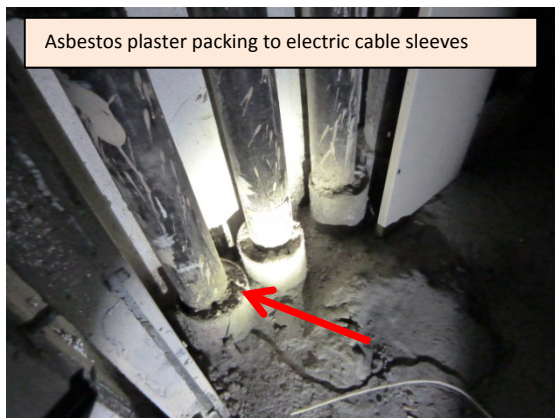
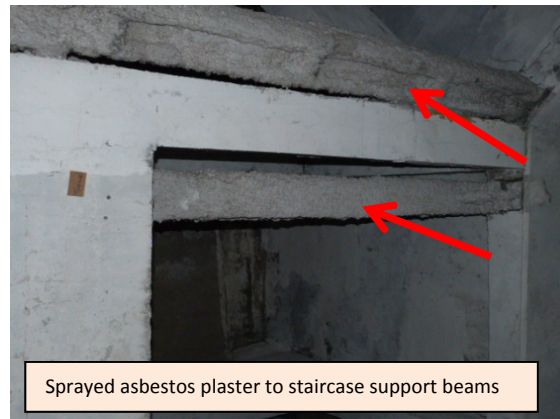
### Photographs of typical ACMs in Residential Blocks





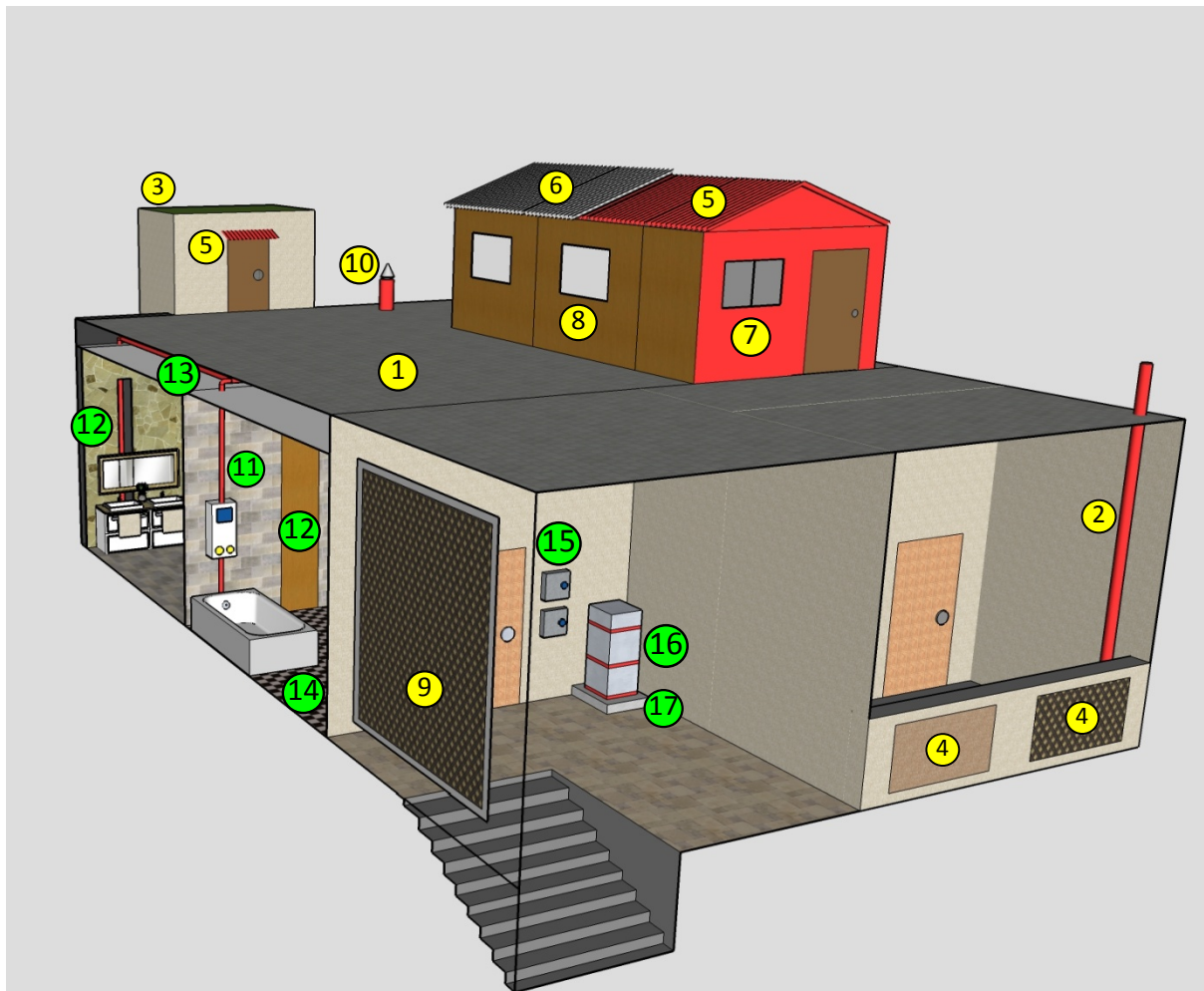








## Appendix B: Illustration of typical ACM occurrences



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| ① Asbestos concrete roof tiles   | ⑤ Corrugated asbestos cement roof / canopy sheeting |
| ② Asbestos cement soil & drain pipes                                   | ⑥ Metal roof sheeting concealing asbestos cement    |
| ③ Asbestos bituminous roof felt  | ⑦ Flat profile asbestos cement wall sheet           |
| ④ Asbestos balcony grille panels<br>(encapsulated and un-encapsulated) | ⑧ Timber sheet covering asbestos cement wall sheet  |
|  | ⑨ Asbestos wall grille panels                       |
|  | ⑩ Asbestos cement vent pipe to rubbish chute        |
| ⑪ Asbestos pipe insulation (external or buried in wall)                | ⑮ Asbestos containing fuse boxes                    |
| ⑫ Asbestos pipe insulation inside duct                                 | ⑯ Asbestos sheeting inside electric trunking        |
| ⑬ Asbestos pipe insulation in ceiling void                             | ⑰ Asbestos sheet/rope packing in floor slab         |
| ⑭ Asbestos vinyl floor tiles   |   |

## Appendix C: Checklist for Site Investigation

Item	✓ or ✗	Actions required
<b>Initial Site Assessment</b>		
Is site safe for access?		
Is liaison required with building management of adjacent blocks to inspect external elevations?		
Are arrangements for plant shut down necessary?		
Are special access notifications to resident's necessary prior to carrying out investigation?		
Has risk assessment been carried out?		
Are as-built drawings available for investigation?		
Are arrangements necessary to break open buried services for investigation?		
<b>Asbestos investigation</b>		
Identify visible ACMs. Refer to associated ACMs in the ACM Identification & Abatement Library. List their type and quantity / condition / location.		
Have all hot water pipes been traced from source to outlets? Record any uncertainty.		
Closely supervise all opening up and dismantling of plant. Stop works before any ACM disturbance.		
Are there any poor condition ACMs that require immediate remedial action?		
Identify any inaccessible areas and list plant not opened for investigation. Assume ACM presence or provide justification for no ACM present.		
Take comprehensive photographic record		
Carry out material and hazard assessment of all identified or suspect ACMs		
<b>Record details for AAP preparation</b>		
Are phases of work zones required? Detail work sequence. Is isolation/dismantling plant required?		
Are scaffold / work platforms necessary to access ACMs? Obtain scaffold design drawings for AAP.		
Are measures necessary to prevent disturbance of ACMs by other parties prior to start of removal?		
Assess practicality of work zone erection and ACM removal from plant. What constraints are present?		
Assess the ease of air movers being exhausted to open air if full containment work zone is specified.		
Assess waste quantity. What measures can be taken to reduce quantity of ACM waste?		
Assess site for access constraints and storage of waste constraints		
Record air monitoring locations for reassurance, leak and clearance air tests. Are environmental air tests necessary?		