

FIRE LIFE SAFETY FOR APARTMENT BUILDINGS

Introduction

The risk of emergencies such as fires escalating into full scale disasters in multistorey apartment buildings is very real. Therefore owners and managers of these complexes have a legal and moral responsibility to provide systems and procedures to ensure that minor incidents do not escalate into full scale emergencies but, if they do, that occupants are warned and efficiently evacuated to safety.

Statement of Problem

"Smoke prevents rescue efforts" "Panic as exits are blocked" Headlines such as these are now becoming increasingly common. People have to be more aware of considering new ways of protecting their safety and security. These concerns are particularly strong amongst those living in major cities, especially those living in high-rise and multi-unit dwellings. There is well over 1 million people living in units, apartments, townhouses and retirement villages around Australia. Such residences bring a complex set of circumstances to the safety and security of the occupiers. An individual in an apartment may not be able to make an impact on the safety of the block, but when a community joins together, they can pool their resources and cohesively plan for future emergencies and assess safety risks.

It should be noted that the "*owners corporation*" is the "*responsible party*" as community owner and they must provide direction to their managing agent and any facilities manager to effect the safety schemes that they endorse.

The risk in apartment buildings is high due to the large numbers of people residing in these complexes and the variety of possible activities undertaken by the residents such as smoking, cooking, BBQs, heaters, children playing with matches etc.

The evacuation of residential buildings is more complex compared to office buildings. Residential buildings have different occupant issues to consider. These include occupants that may be very young, old, mentally or physically impaired and possibly sleeping. Other possibilities may include pets and other livestock present and lot owners inappropriately securing their apartment, etc.

Consideration must also be given for non-English speaking persons. Therefore these types of buildings with installed sprinklers, may be more suited to phased or protect in place evacuation strategies.

People who have to decide how to get out of a burning apartment or building are likely to be under significant psychological and even physical stress if they cannot locate the escape routes when power is cut or visibility is lowered by smoke. Emergency procedures and evacuation plans must therefore be simple and uncommunicated to all occupants prior to such an emergency. Evacuation routes must be direct, well marked, kept clear and accessible at all times.

Any passive fire protection systems such as fire doors and smoke vents must be well maintained and unimpeded. All residents must know the importance of these systems. Manual and automatic fire fighting systems inclusive of appropriate portable fire extinguishers, must be installed and maintained as per relevant standards. Residents and other relevant personal should be trained in their location, operation and use.

Background

AS 3745 – 2010 (Emergency Control Organisations for Buildings Structures & Workplaces) focuses on emergency procedures for building occupants and defines an emergency as: *“any event which arises internally or from external sources which may adversely affect the safety of persons in a building or the community generally and calls for immediate response by the occupants of a building, by bystanders, or involved parties”*. This could include: fire, structural failure, equipment failure, toxic spills, cyclone, earthquake, terrorism, bomb threats and civil unrest.

There are legal obligations in all State Safety Legislation for Owners, Occupiers & Controllers of premises to ensure the safe egress of people in the event of an emergency.

AS 3745¹ states that, *“Building owners, agents, lessors or their representatives, should ensure that leases not only cover the safety of the occupants in an emergency, but include obligations for occupants to participate in emergency planning and evacuation exercises and acknowledge the authority of designated wardens in emergency situations”*.

AS 3745 requires as a minimum the following to be in place:

Emergency Procedures must be developed & reviewed at least every 12 months.

- 🔥 All staff are inducted into the organisations emergency procedures
- 🔥 Wardens should be trained every six months
- 🔥 All occupants must take part in a building evacuation at least every 12 months
- 🔥 Records must be maintained of who has been trained and what was covered in the training.

Under various State Building and Safety Regulations property owners and managers are obligated annually to ensure that they verify that essential services / safety measures (inspections and maintenance) comply with statutory requirements by signing an annual statement, such as:

- 🔥 New South Wales – Annual Fire Safety Statement
- 🔥 Victoria – Annual Essential Services Report (Form 15)
- 🔥 Queensland – Certificate of Maintenance
- 🔥 Tasmania – Annual Maintenance Statement
- 🔥 South Australia – Cert of Comp with Maintenance Procedures for ESP (Form 3)

These forms must be forwarded to the Fire Brigade and/or Local Council (planning regulator) and in some cases (mandatory in NSW) be displayed prominently in the building.

Essential Services & Fire Safety Systems include:

- 🔥 Automatic fail safe devices (any interfaced device² activated by fire system)
- 🔥 Automatic fire detection & alarm systems
- 🔥 Automatic fire sprinklers or other suppression systems
- 🔥 Emergency and passenger lifts
- 🔥 Emergency lighting & illuminated exit directional signs
- 🔥 Emergency or occupant warning systems (EWIS or OWS)
- 🔥 Fire doors (including many apartment doors³), Passageways, Fire Stairs
- 🔥 Fire hose reels
- 🔥 Fire hydrant systems
- 🔥 HVAC smoke control – including carpark fans, pressurising fans, smoke spill fans, etc.
- 🔥 Paths of travel – must be clear & unobstructed⁴

¹ In NSW this is also called up in Occupational Health and Safety Regulation – Sect.17

² Includes magnetic held back doors, automatic (motorised) doors, access controlled barriers or doors.

³ Note that it is forbidden to install deadlocks, barrelbolt locks, security bars, disable or install any device or object that may obstruct the door from auto-closing, or install any gate or screen door with a lock within such a door portal.

⁴ the curling-up door mat outside of the apartment door, if a trip hazard, renders the path non-complying.

- 🔥 Passive (other) systems – access panels, doors & hoppers, fire dampers, fire seals in service risers, fire shutters, fire windows, smoke & heat vents,
- 🔥 Portable fire extinguishers & fire blankets
- 🔥 Mechanical Services – including kitchen exhaust/s

Action Plan

1. **Set up** an Emergency Control Organisation Committee (ECO) to monitor life safety and emergency response risk management issues.
2. **Identify** any residents who may have useful skills or training such as Doctors, Nurses, First Aid, Emergency Workers, multi-linguists etc. Decide what assistance they could provide in an emergency.
3. **Identify** guests with special needs such as handicaps or impairments (mobility, hearing, sight, medical or mental condition) and ensure that procedures accommodate these needs.
4. Ensure that all **residents** have been provided with basic emergency information including location of exits, location of fire fighting equipment, actions in emergency and emergency telephone contact numbers.
5. Ensure all **contractors** and workers are aware of essential services provisions and their required action in an incident (contractor induction).
6. Make **contact** with local emergency services personnel and invite them to your building (ensure local fire brigade are familiar with location of fire control area, equipment and relevant documentation).
7. **Seek volunteers** for the roles of Chief Warden, Deputy Wardens and Floor Wardens⁵ and maintain an up-to-date register for contact.
8. As mentioned earlier, residential buildings can present additional challenges to commercial buildings. You should consider the appointment of a specialist Emergency Procedures Consultant such as **Adair**, or ComSafe to assess your situation and develop suitable procedures, your training plans and to supervise drills on a regular basis.
9. Undertake a **risk management** exercise to identify potential causes (smoking, cooking, waste disposal etc) and outcomes of incidents which could result in an emergency. Determine what procedures and controls can be implemented to help prevent these incidents.
10. Organise for a **Fire/Life Safety Audit** to be carried out on the building by a qualified consultant, such as **FIREASSESS™**, who will identify any non-compliance with Building Codes⁶ and Standards requirements.
11. Identify the fire life safety systems and essential services installed within the building, *including smoke detectors*⁷, *fire extinguishers*, *fire blankets* and *fire dampers*- installed in each **unit** and **common area**.
12. Ensure that all of these essential services identified are under a formal **maintenance contract** which references Australian Standards such as AS 1851-2005, AS/NZS 2293.2-1995, AS 1735.2-2001, etc.
13. Ensure that any measures found not performing as required are promptly remedied (*promptly usually means "prior to or at or by the next minor service interval following identification of the issue"*).
14. Ensure that the maintenance and performance of the building fire safety systems has been assessed by a qualified assessor, such as **FIREASSESS™**, reflecting AS 4655-2005 and that they provide an endorsed fire safety statement which may be forwarded to the regulatory authorities.
15. Develop a checklist (with your assessor) and have the ECO committee members carry out regular self inspections.

⁵ Note that the default is to have these positions filled by the owners corporation executive. If there is a building manager – they would automatically assume the chief warden role & responsibility with concierge taking up the deputy chief warden role.

⁶ Including any "fire engineered alternative solution" or "management in use" operational requirement.

⁷ Note that in NSW – Smoke detectors are required in or adjacent to any and all compartments used for sleeping.