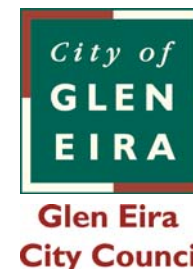


WHAT ARE ESSENTIAL SERVICES (Essential Safety Measures)

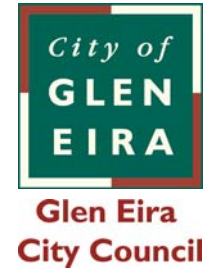
PRESENTED BY: JOHN BORDIGNON

Managing Risk



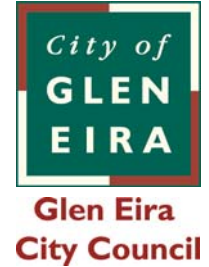
- The greatest concern for building owners is that if essential services and other safety items are not maintained then the risk of failure of the item when it is needed (i.e an emergency) increases significantly;
- Adequate maintenance is the best means of ensuring that the fire safety systems will operate reliably if an emergency arises.
- The Regulations require it!

ESSENTIAL SAFETY MEASURES



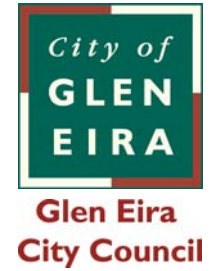
- A building owner's responsibility does not cease when the construction of the building is complete. There is an ongoing responsibility for the upkeep of the building including the maintenance of safety features throughout the life of the building.

ESSENTIAL SAFETY MEASURES



- What are essential safety measures?
- Why do they need to be maintained?
- What buildings require maintenance of essential safety measures?
- Requirements for buildings designed on a performance basis or determination or as otherwise determined in older buildings.
- Carrying out maintenance.
- Benefits to owners and the public.

WHAT ARE ESSENTIAL SAFETY MEASURES?



- An essential safety measure, for the purpose of the Regulations is provided for the safety of people in a building or place of public entertainment.

WHAT ARE ESSENTIAL SAFETY MEASURES?

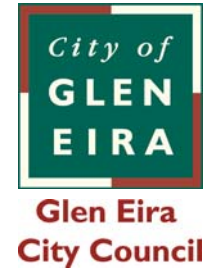


- The term essential safety measures has been defined in the Regulations as including:
- Safety measures as listed in table I1.1 to I1.11, excluding artificial lighting contained in Table I1.4, of the BCA;
- Mechanical ventilation system, hot water or cooling system;
- Any other item listed as an essential safety measure (e.g. result of alternative solution);
- Essential service as defined under the Building Regulations 1994 (Previous Regulations).

WHAT ARE ESSENTIAL SAFETY MEASURES?

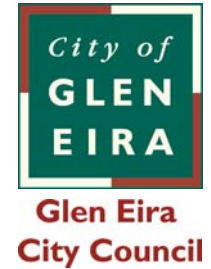
- The term “essential services” only applies to buildings constructed on or after 1 July 1994.
- All fire equipment, safety fittings or safety measures in all buildings irrespective of when they were constructed are to be maintained in a state which enables them to fulfil their purpose.
- The Building Regulations 2006 refer to “Essential Safety Measures” (ESM) to align with the meaning under the Building Code of Australia (part I)

WHY DO THEY NEED TO BE MAINTAINED?



- The objective of the maintenance requirement is to ensure that every essential safety measure continues to perform at the same level of operation that existed at the time of commissioning and issue of the occupancy permit.
- Involves :
 - Periodical inspections
 - Maintenance of records in the form of maintenance logs and an Essential Services Report.

REASONS FOR MAINTENANCE

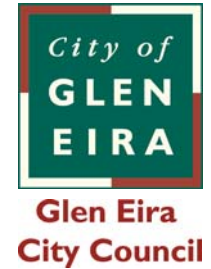


- General wear and tear;
- System reliability;
- Faults after commissioning;
- General housekeeping i.e. exits.

WHAT BUILDINGS REQUIRE MAINTENANCE

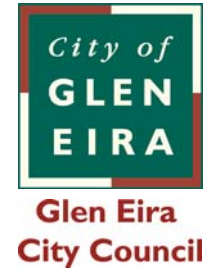
- Applies to;
 - Class 1b - small domestic buildings;
 - Class 2 - units, flats;
 - Class 3 - residential buildings (motels);
 - Class 5 - offices;
 - Class 6 - retail shops;
 - Class 7 - warehouses;
 - Class 8 - factories;
 - Class 9 - public buildings.

Part 12 Building Regulations 2006 Subdivisions



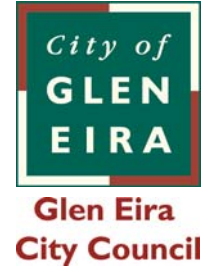
- **Subdivision 1**
 - deals with the maintenance of *essential safety measures*, as determined by the RBS, in buildings where building work is or has been carried out under the *Building Act 1993* (the Act) **on or after July 1 1994** and for Class 4 buildings after 14 June 2005. (Excluded from application is smoke alarms to dwellings in class 1b, 2, and 4 part of a building).

Part 12 Building Regulations 2006 Subdivisions



- **Subdivision 2**
 - outlines the maintenance of *essential safety measures* for buildings and places of public entertainment constructed **before 1 July 1994**.

Part 12 Building Regulations 2006 Subdivisions



- **Subdivision 3**
 - sets out the requirements for maintenance of exits and paths of travel relating to buildings or places of Public entertainment.

WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table 1.1 ESSENTIAL SAFETY MEASURES – BUILDING FIRE INTEGRITY**
 - **Building elements required to satisfy prescribed fire resistance levels**
 - **Materials or assemblies required to satisfy prescribed fire hazard properties**
 - **Elements required to be non-combustible, provide fire protection, compartmentation or separation**
 - **Wall wetting sprinklers, fire doors, fire windows, fire shutters, solid core doors, fire protection through service openings or elements required to be fire separated**
 - **Smoke doors and other self closing , automatic closing devices to protect from the spread of smoke or fire.**

WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table 1.2 ESSENTIAL SAFETY MEASURES – MEANS OF EGRESS**
 - **Paths of travel to exits**
 - **Discharge from exits- incl. paths of travel to open spaces to the public roads which they are connected**
 - **Exits- incl. fire-isolated stairways and ramps, non-fire isolated stairways and ramps. Stair treads, balustrades and handrails associated with exits**
 - **Smoke lobbies to fire isolated exits, open access ramps or balconies for fire-isolated exits**
 - **Doors (other than fire or smoke) in a required exit, forming part of a required exit or in a path of travel to a required exit incl. closing and latching mechanisms.**

WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table I1.3 ESSENTIAL SAFETY MEASURES – SIGNS**
 - **Exit signs incl. direction signs**
 - **Signs warning against the use of lifts in the event of fire**
 - **Warning signs on sliding fire doors and doors to non-required stairs**
 - **Signs , intercommunication systems or alarm systems on doors of fire isolated exits stating that re-entry to storey is unavailable**
- **Table I1.4 ESSENTIAL SAFETY MEASURES – LIGHTING**
 - **Emergency lighting**

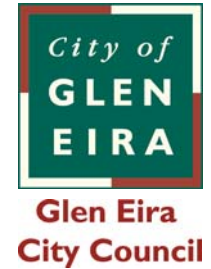
WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table I1.5 ESSENTIAL SAFETY MEASURES – FIRE FIGHTING SERVICES AND EQUIPMENT**
 - **Fire hydrant system incl. on site pump set and booster connection**
 - **Fire hose reel system**
 - **Sprinkler system**
 - **Portable fire extinguishers**
 - **Fire control centres or rooms**
 - **Provision for special hazards**

WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table I1.6 ESSENTIAL SAFETY MEASURES – AIR HANDLING SYSTEMS**
 - **Smoke hazard management systems**
 - Automatic air pressurisation systems for fire isolated exits
 - Zone smoke control systems
 - Smoke exhaust system incl. automatic smoke and heat vents
 - Air handling systems which do not form part of the SMHZ but may unduly contribute to the spread of smoke
 - Misc. air handling systems serving more than one fire compartment
 - **Carpark mechanical ventilation system**
 - **Atrium smoke control system**

WHAT ARE ESSENTIAL SAFETY MEASURES?



- **Table I1.7 ESSENTIAL SAFETY MEASURES – AUTOMATIC FIRE DETECTION AND ALARM SYSTEMS**
 - **Smoke and heat alarm system**
 - **Smoke and heat detection system**
 - **Atrium fire detection and alarm systems**

WHAT ARE ESSENTIAL SAFETY MEASURES?

- **Table I1.8 ESSENTIAL SAFETY MEASURES – OCCUPANT WARNING SYSTEMS**
 - **Emergency warning and intercommunication system**
 - **Building occupant warning system**
- **Table I1.9 ESSENTIAL SAFETY MEASURES – LIFTS**
 - **Stretcher facilities in lifts**
 - **Emergency lifts**
 - **Passenger lift fire service controls**

WHAT ARE ESSENTIAL SAFETY MEASURES cont.

- **Table I1.10 ESSENTIAL SAFETY MEASURES – STANDBY POWER SUPPLY SYSTEMS**
 - **Standby Power supply system**
- **Table I1.11 ESSENTIAL SAFETY MEASURES – BUILDING CLEARANCE AND FIRE APPLIANCES**
 - **Open space around large isolated buildings**
 - **Vehicular space around large isolated buildings**
- **ESSENTIAL SAFETY MEASURES – MECHANICAL VENTILATION**
 - **Air conditioning systems**

Conditions on OP or certificates of final inspection

- **Part 12 requires the RBS to include conditions which:**
 - Lists the essential safety measures
 - specifies for each essential safety measure listed, the level of performance determined by the RBS to enable the essential safety measure to fulfil its purpose.
 1. *the essential safety measure*
 2. *the building regulation relevant to the installation and operation of the essential safety measure*
 3. *the frequency and type of maintenance required*

Example of listing



Glen Eira
City Council

Essential safety measure	BCA provisions for determining standard of performance	Nature and or frequency of test or inspection
Paths of travel to exits	D1.6	Inspection every three months to ensure there are no obstructions and no alterations
Exit signs (including direction signs)	D1.12, E4.5, E4.6, E4.8	Every six months to AS 2293.2-1995
Portable fire extinguishers	E1.6	Every six months to AS 1851-2005 Section 15.4

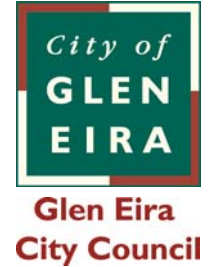
Subdivision 2- older buildings

- The owner must ensure that ESM is maintained in a state which enables the ESM to fulfil its purpose.
 - Must not be removed except for maintenance
- Engage suitably qualified persons to establish the essential safety measures in older buildings.
 - detailed inspection and researching historical documentation.
- The level of maintenance expected should not be greater than that required at the time the equipment, fitting or essential safety measure was installed.
- If there was no specific standard of maintenance in force at the time, then any relevant Australian Standards available at the time may be used as a guide to the level of adequate maintenance.
- If there was no relevant Australian Standard in existence at the time of installation, then the first published edition of a relevant Standard may be used as a guide to what may be adequate maintenance.

Alternative solutions and determinations

- Where an alternative solution is used which requires measures other than those contained within Table I or which requires a varied order of maintenance than recommended by the schedule, then the list must be added to by the RBS.
- It is recommended in this case the RBS consult with the designer to determine the appropriate maintenance requirements and frequency.

CARRYING OUT MAINTENANCE



- Type of maintenance dependant on complexity of service.
- May include;
 - Fire safety systems maintenance specialists;
 - Engineers;
 - Hydraulic sprinkler specialists;
 - Electricians;
 - Building maintenance personnel.

WHAT AN OWNER MUST DO



- Carry out maintenance in accordance with the OP or determination.
- Prepare an annual essential services report.
- Display in a prominent position;
 - Occupancy permit;
 - Performance determinations;
- Have available for inspection upon 24 hours notice:
 - Annual Essential Services Report.

BENEFITS TO PUBLIC



- Owners have greater knowledge of the safety of their buildings;
- Transparent system of building maintenance;
- Occupant awareness of safety information;
- Provides for efficient audit and and enforcement function.

Useful Information



- Practice Note 2006-23 (Building Commission)
- Essential Safety Measures Maintenance Manual (4th ed)