



INSTALLING FIRE SPRINKLERS IN AGED CARE FACILITIES



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Regulation



Since 2002, construction of new aged care buildings under BCA class 9c has required the installation of a sprinkler system.

The BCA has always required buildings over 25m in height to have sprinklers installed.

Installation of a sprinkler system must comply with Specification E1.5 of the BCA and comply with:

- ❑ AS2118.1; or
- ❑ AS2118.4 for a class 3 building (as applicable)
- ❑ AS2118.4 for a class 9c building (as applicable)

Currently, a Class 9a building will therefore require installation to AS2118.1 if there are basement levels of where the 25m height is exceeded.



Regulation



BCA2012 referenced AS2118.4 – 1995, however BCA2013~2016 reference AS2118.4 – 2012. **Significant differences...?**

- Allowance for the hydrant demand now required. The water supply must be capable of supplying **600 L/min** (hydrant demand) in **excess of** the residential sprinkler system demand which is normally **300 L/min**.
- Priority valves which switch off the domestic supply when the sprinkler system operates **must be installed on combined domestic/sprinkler connections** from the main.
- The water supply requirement to include the hydrant demand **may** result in the requirement for a water storage tank if the main cannot supply more than **900 L/m at peak demand**.



Regulation



BCA2012 referenced AS2118.4 – 1995, however BCA2013~2016 reference AS2118.4 – 2012. **Significant differences...?**

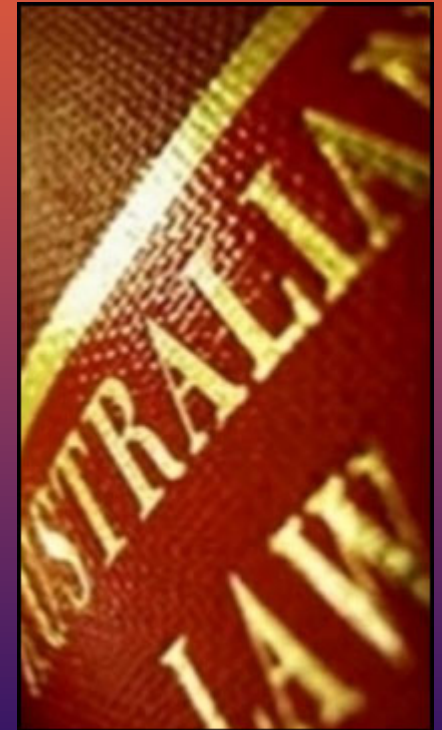
- ❑ **Concealed space** protection (roof & floor voids) has changed such that any space greater than **200mm** deep (unless entirely bounded by non-combustible construction) will **have to be sprinkler protected**.
- ❑ **Concealed space** protection to be installed to a maximum spacing of **42 m²** per sprinkler (this was as low as 21 m² per sprinkler).
- ❑ Toilets and bathrooms do not require sprinklers
- ❑ Spacing of Residential type sprinklers has been limited to **4.9m** apart and a maximum coverage(/min.density of 1/) **24 m²**. Previously there was a maximum spacing of 6.1m. This represents on average a 12% increase in the number of sprinkler heads.



Consent

“All proposed sprinkler system retrofits must be approved beforehand” using either:

- ❑ Development Application approval process (DA), or
- ❑ Complying Development Consent process (CDC).





Benefits of installing sprinklers

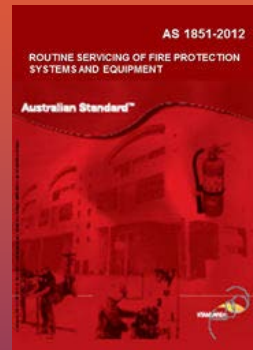
Fire sprinkler systems have proven evidence of:

- ❑ Increasing the tenability for occupation
- ❑ Increasing the likelihood of extinguishing and localising any fire (minimal fire spread)
- ❑ Reducing the extent of physical fire damage to a building
- ❑ Reducing the extent of smoke generation from a fire
- ❑ Improving insurance premiums



Disadvantages..

- There's that ongoing **maintenance** cost for this system (See AS1851-2012 Sect. 2) that hasn't previously been necessary.
- There is of course the **capital** cost to install
- Sprinkler heads are sensitive to the "**fiddle factor**" (occupants hanging inappropriate objects from them, builders knocking them with ladders, etc.)





Process..





Scope..

- ❑ BCA Classification (9a or 9c) ?
- ❑ Heritage impact?
- ❑ Building age and lifecycle progression?
- ❑ Stakeholder policy?
- ❑ Number of storeys
- ❑ Operational matters
- ❑ Hazardous materials
- ❑ Construction form
- ❑ Floor plans & configuration?
- ❑ Water pressure & flow capability?
- ❑ Water supply point
- ❑ Secondary supply tanks
- ❑ Booster pump location
- ❑ Maintainability



Budget..

- Heritage
- Aesthetics
- Encapsulation & enclosure
- Sprinkler head
- Booster pump location
- Operational matters
- Access
- Staging
- Working hours for installers
- Amenities for installers



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Design

Pressure Enquiry

- Formal enquiry to water provider

Supply

- Determine extent of boosting or storage required

Describe

- Document the locations for external equipment and extent of internal works

Define

- Document (Performance or Prescriptive) for the required works

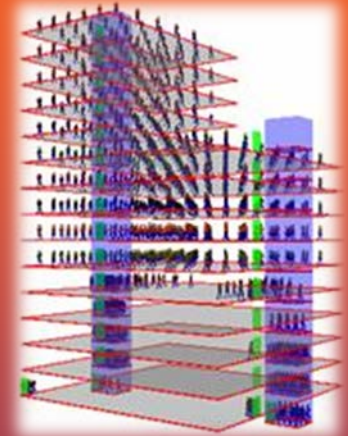
Consent

- Package documents and seek authority approvals



Design..

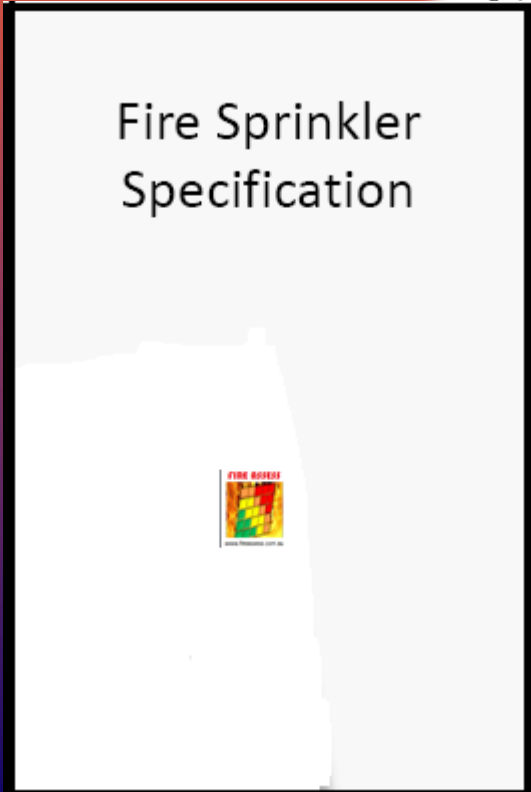
- Preliminary
 - Formal enquiry to water provider
- Supply
 - Determine extent of boosting or storage required
- Describe
 - Document the locations for external equipment and extent of internal works
- Define
 - Document (Performance or Prescriptive) for the required works
- Consent
 - Package documents and seek authority approvals



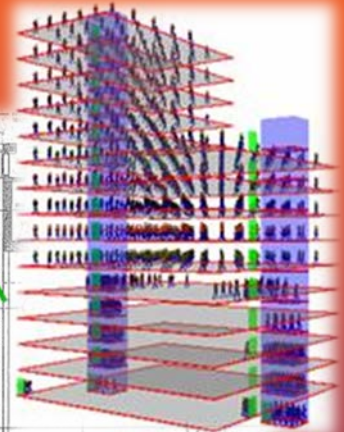
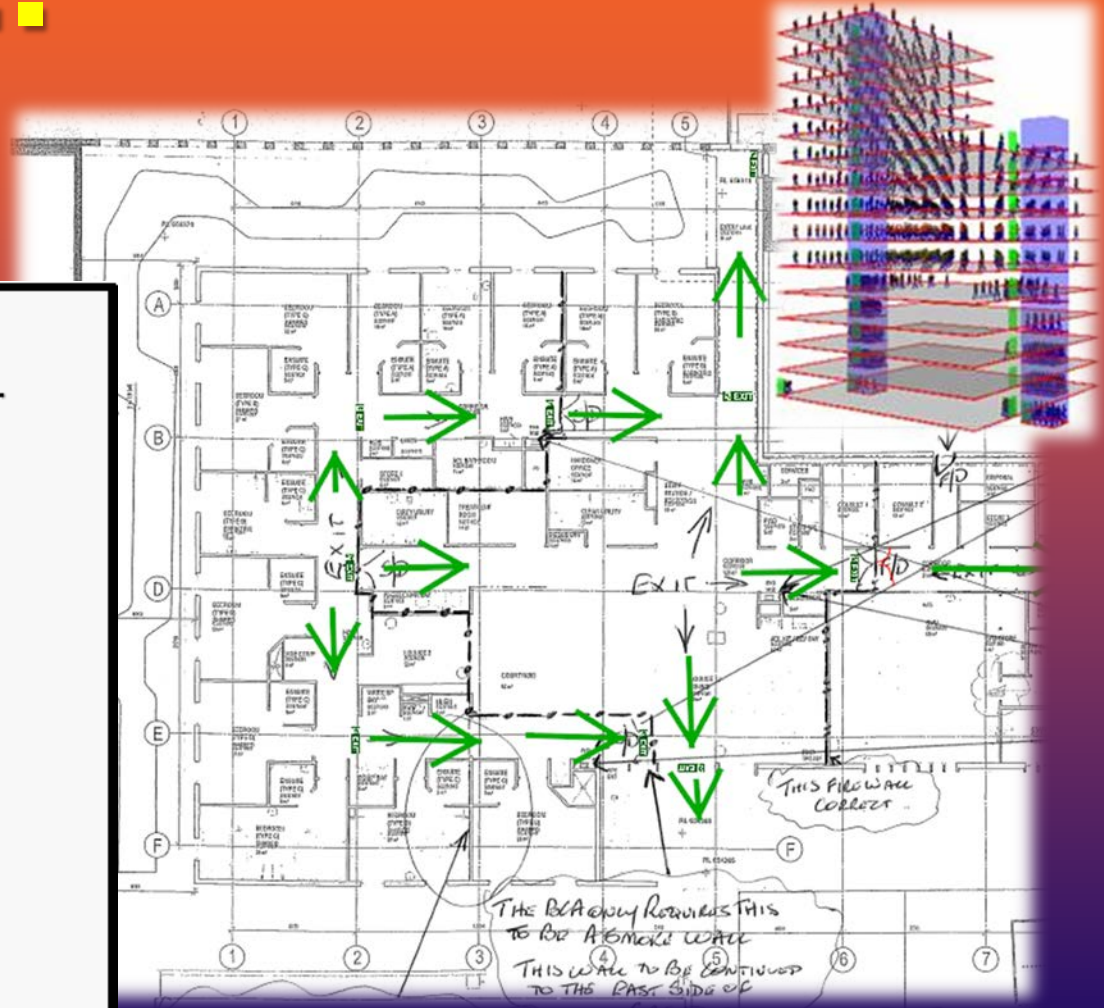


Specify..

Fire Sprinkler Specification



The image shows the front cover of a white document titled "Fire Sprinkler Specification". In the bottom right corner of the cover, there is a small logo for "FIRE ASSESS" which consists of a grid of colored squares (yellow, green, red) on a dark background.





Authorities..

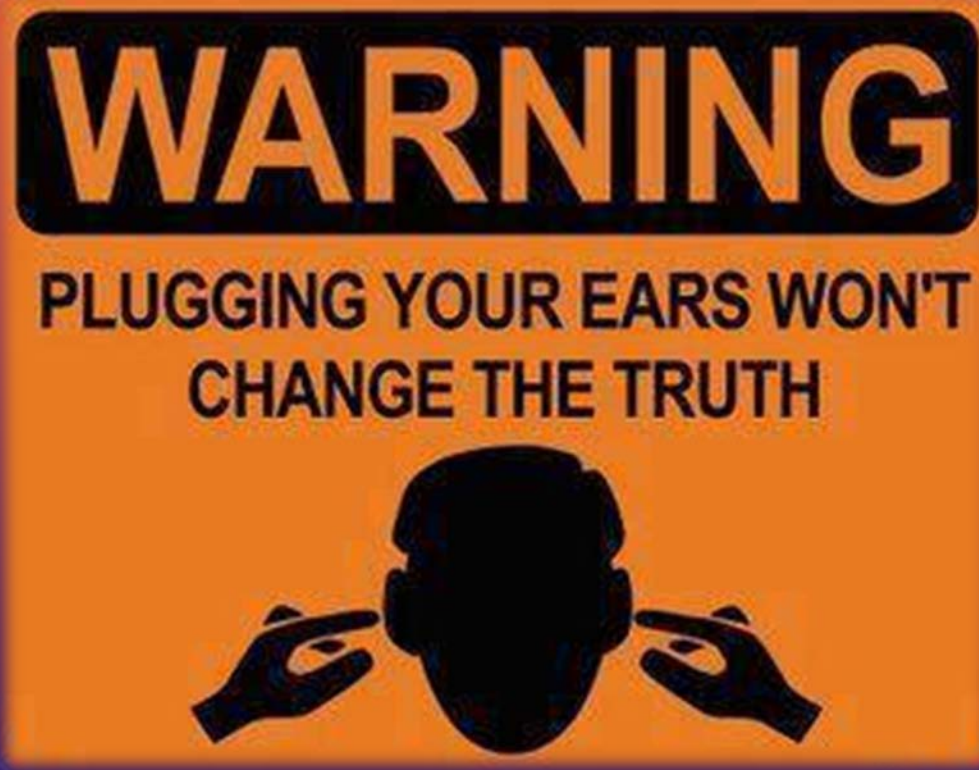
- ❑ Determine the process (DA or CDC)
- ❑ Determine submission requirements
- ❑ Pick your Principal Certifier well
- ❑ Discuss with the authority (NSWFR)
- ❑ Programme and patience
- ❑ Don't submit less than required
- ❑ Check conditions carefully





Procure..

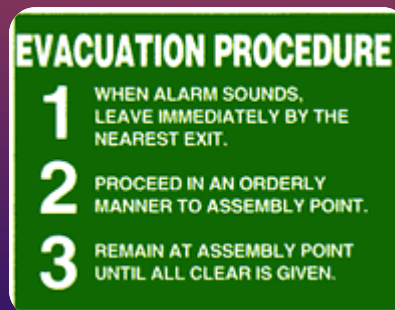
- ❑ Manage the Project rather than Project Manage
- ❑ Expertise
- ❑ Probity
- ❑ Transparency
- ❑ Programme
- ❑ Experience
- ❑ Responsibility





Safety..

- In-roof safety
- Resident and staff safety
- Continuity of business
- Hazardous materials
- Electrical clearance





Implement..

- To suit your residents
- Expertise
- Probity
- Transparency
- Programme
- Experience
- Responsibility



Implement..

- ❑ Assess installation by designer
- ❑ Commission and verify that performance is not less than that specified and required.
- ❑ Ensure that an Operational and Maintenance Manual is provided for the system as installed. Plus that it reflects all stakeholder policies and legislative requirements.
- ❑ Collect and have readily available, copies of block plan and interface – as well as any additional base building data deemed necessary.



Emerging issues?

What other issues will effect and impact the facilities which you manage?



The greatest failure: the failure to learn





What next...



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