



Apart from conventional fire protection challenges in many occupancies, a high-rise building is also faced with other inherent, intractable challenges. There are challenges such as inaccessibility by fire equipment due to height factor; stair egress and smoke stack effects; conflicting fire safety management within and between different floors; re-designing and changes from initial intended use and; complex vertical utility services especially the heating ventilating and air conditioning conduits (HVACs).

**There are no simple rules to follow for commercial properties because each building is different, both in its layout and fire risks. However, when a fire occurs the priorities in all buildings is early detection and orderly evacuation.**

**If fire systems are not properly maintained serious damage can occur to the building and the contents. Occupants can also be exposed to unnecessary risk due to broken warning systems and damaged fire doors.**

The Department of Fire and Emergency Services (DFES) provides advice to Building Surveyors (Certifiers) and other fire safety practitioners to ensure plans for construction of new commercial and industrial buildings in Western Australia are fire safe in accordance with the fire safety sections of the Building Code of Australia (BCA).

DFES conducts inspections of major projects to ensure firefighting equipment is installed as designated in the approved plans. Certain equipment is then tested for compliance with Australian Standards and to ensure it will meet the needs of the fire service.

The Western Australia Department of Mines, Industry Regulation and Safety has produced a guide to inform building surveyors, fire engineers, designers and others

involved in developing and approving Performance Solutions relating to fire safety, of the practice that is expected by the Building Commissioner when developing fire safety Performance Solutions in Western Australia.

It also provides the basis of a Code of Practice for those involved in developing and approving performance fire safety solutions and is used as a benchmark when auditing registered building service practitioners and contractors.

While the Deemed-to-Satisfy Provisions often provide a ready-made building solution with certainty of compliance, they may not always be cost effective or appropriate for every circumstance. The Performance Solution option allows flexibility and innovation in design. Performance Solutions are commonly used for the fire safety provisions of the BCA and involve fire engineering.

Developing a fire safety Performance Solution is often complex and requires stakeholder input. This adds time to the overall project schedule, so it is important to consider Performance Solutions early in the design and not as a last minute fix to poor design or construction. Furthermore, a Performance Solution is not a mechanism for accepting non-compliance with building standards but a pathway for demonstrating compliance with the Performance Requirements of the BCA. The onus is on the professional(s) carrying out the Performance Solution to provide sufficient documentation, evidence and validation to the certifying building surveyor that the solution complies with the relevant performance requirements. The building surveyor provides guidance and interpretation on the BCA for the specific project.

While existing buildings would be expected to contain a combination of fire safety measures, they may not contain the same scope of measures as would be expected in a contemporary building of the same classification and size. This outcome may well be a product of historic building codes tending to rely on passive fire safety measures to a higher degree than current National Construction Code Deemed-to-Satisfy Provisions.