Capital Development Guideline

7.2 Fire Risk Management Engineering Guidelines

Capital Management Branch
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Compliance with this guideline alone should not be considered as automatically satisfying the building regulations or occupational health and safety obligations of a building owner or operator, nor as satisfying applicable legislation.
No liability will be accepted for any loss or injury occurring in relation to the use of this document for any purposes.
It is the responsibility of the fire safety engineer undertaking the consultancy works and the relevant building surveyor to formulate a fire safety strategy that would satisfy the Department of Human Services’ objectives and relevant statutory requirements.
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1. Scope

1.1 This guideline describes the process for undertaking fire safety audits and fire risk assessments for the Department of Human Services Victoria in order to identify an appropriate fire safety strategy for a building or facility.

1.2 This guideline replaces the previous draft Department of Human Services guidelines: Guidelines for Fire Safety Risk Assessment for Existing Class 9A Buildings, Guidelines for Fire Safety Risk Assessment of Existing Health Care Buildings, and the interim version of this guideline issued in December 1997.

1.3 This guideline is applicable to nominated new or existing buildings and facilities owned or occupied by the Department of Human Services or by Department-funded agencies and should be used in conjunction with the following:

- Relevant Ministerial Guidelines, Building Notes.
- Any other relevant legislation including the Dangerous Goods Act 1985 and Regulations, the Occupational Health and Safety Act 1985 (OH&S Act) and Regulations.

1.4 This guideline is one of a series of documents outlining the Department of Human Services Fire Risk Management Strategy (see figure 1). Specific guidelines have been developed for specific occupancy types.

1.5 These guidelines have been provided to give a general indication of the Department of Human Services expectations for fire risk management in buildings owned or occupied by the Department or by Department-funded agencies. The guidelines enable appropriately qualified professional advisers, such as registered fire safety engineers and building surveyors, to assess fire risk, recommend steps to minimise fire risk, and to assess and report on acceptable standards of fire safety, in specific settings.

The fire safety engineer shall, as a minimum, follow Capital Development Guideline (CDG) 7.2 in implementing and reporting on fire safety audits and fire safety risk assessments. Subject to this, the use of the other guidelines in the series of Fire Risk Management Guidelines is subject to the following:

(a) The guidelines do not constitute specific fire safety advice and are provided for assistance in determining appropriate fire safety measures. It is up to individuals, acting with appropriate professional advice, to determine their application to particular situations.

(b) Each guideline should be used for purposes only within the range set out in the ‘Scope’ section at the start of each document.

(c) In addition to the fire safety requirements and standards in the guidelines, owners and operators of facilities may be subject to various statutory, common law and contractual obligations. They should seek specific legal advice on the existence and scope of these obligations.

The Department of Human Services makes no representation that the guidelines are suitable for any particular situation, and accepts no responsibility for any loss or damage arising out of any decision to apply the guidelines to any particular situation.
2. Overview

2.1 The Department of Human Services recognises its responsibility to provide a safe environment in buildings that it owns or occupies.

2.2 The traditional prescriptive approach in meeting the requirements of Building Regulations is often impractical to apply to existing buildings. In addition, because of the specialist nature of many Department of Human Services owned or occupied facilities, prescriptive measures which are a requirement of the Building Regulations may not be appropriate to implement in new facilities.

2.3 The BCA 1996 allows the use of fire safety engineering to ascertain compliance with the performance requirements specified to meet the requirements of the current Building Regulations. This enables a flexible approach to be applied.

2.4 For existing and new buildings, unless otherwise nominated, the fire engineering approach, which is described in these guidelines and the Fire Engineering Guidelines (published by the Fire Code Reform Centre Ltd.) should be adopted. An assessment against the performance requirements of the BCA 1996 shall also be made. Other parameters defined in section 6 of this guideline should also be considered.

2.5 If one or more performance requirements of the BCA 1996 are not satisfied, and there are sound justifications that such requirements do not need to be satisfied, it will be necessary to obtain a modification to the Building Regulations from the Victorian Building Appeals Board, unless the relevant building surveyor can exercise discretionary powers under the Building Regulations. Applications for modifications shall only be made with the permission of the Capital Management Branch (CMB) of the Department of Human Services, or the Office of Housing (OoH) Asset Manager and the Chief Executive Officer (CEO) of the facility or a delegate. The Building Appeals Board referral process would not normally be followed, as it is a requirement of the Department of Human Services that the fire safety engineer and the building surveyor have appropriate qualifications and expertise to assess designs against the performance requirements.

2.6 Notwithstanding the above, the Department of Human Services recognises that while it may not be possible to totally remove the risk to life from fire in buildings, the Department is committed to adopting practicable measures to minimise the risk to life from fire.

2.7 A typical flow chart for the fire audit and risk assessment process is shown in figure 2. Refer to section 3 for definitions.

2.8 In order to undertake a fire engineering study, it is necessary to characterise the facility and building by means of an audit process, which is described in this document.

2.9 The outcomes of a fire safety audit and subsequent fire risk assessment will be a conceptual fire safety strategy for a facility, together with an upgrade plan, cost estimates and certification by the building surveyor that the strategy complies with the BCA 1996 and the Building Regulations. The adopted conceptual fire safety strategy shall be documented in the form of a fire safety plan which defines the fire safety strategy for the site in the long term and can be easily updated if conditions at the site change.

2.10 The fire safety engineer should subsequently review the design documentation for the fire safety upgrade works to ensure that the conceptual design has been accurately and thoroughly translated into the design documentation.

2.11 Minimum levels of quantitative analysis have been nominated for client sleeping areas reflecting the Department view that these are high risk areas that must be specifically addressed in detail by fire safety engineers. This should, however, not be construed as restricting the application of quantitative techniques to bed-based areas only or limiting the depth of analysis.

2.12 These guidelines do not prescribe the use of Multiattribute Evaluation methods, commonly referred to as point’s schemes, such as NFPA 101A. Such methods may be used to supplement (but not in lieu of) the qualitative risk assessment and quantitative analysis required by in these guidelines.
2.13 Section 16 has been added to this edition. It defines the role of a fire safety engineer for new building works and requires their early involvement as a member of the design team to maximise the potential advantages of a fire safety engineering approach.

Figure 2: Fire Safety Risk Assessment Flow Chart

![Flow Chart Image]

Figure 3: Implementation of Interim Fire Safety Precautions

![Flow Chart Image]

Note:
The implementation of Interim Fire Safety Precautions will proceed at the time as the remainder of the risk assessment process.
3. Definitions

Building Legibility
Relates to the complexity of the building layout which has an impact on the ease of wayfinding by the occupants or rescue personnel.

Congregate Care Facility
A ‘residential care building or group of buildings’, as defined in the Building Regulations, with 24-hour on-site support or care staff, and having a floor area greater than 350m² or accommodating more than six residents where 10% or more require significant (or physical) assistance to evacuate the building during an emergency.

Community-Based Houses
House of a typical domestic type construction and layout with a total floor area up to 350m² with 24-hour staff, accommodating no more than 12 persons, of which not more than one requires assistance to evacuate the building during an emergency.

Desktop Fire Audit
An audit of fire safety issues and measures based on a review of documentation such as design development documentation. This type of audit may not involve a site inspection and is therefore reliant on a careful examination of the documentation. It provides data for a fire risk assessment on new facilities, major refurbishments and the like. The desktop fire audit should address the same matters as a fire safety audit on an existing building except that minimum requirements for matters that would otherwise be observed during an audit, such as maintenance, fire prevention and training, should be stated and considered in the subsequent risk assessment.

Deterministic Analysis (Study)
A method of analysis based on physical relationships derived from a scientific theory and/or empirical results that, for a given set of initial conditions, will always produce the same outcome.

Facility
A facility is a building or group of buildings that is ‘staffed’ but excludes single dwellings, community-based houses and supported community-based houses.

Fire Engineering Design Brief
A formalised design review and hazard identification and assessment procedure, undertaken by a team of representatives from various organisations involved in the study. This process is referred to as a Qualitative Design Review in International Standards Organisation draft Standards.

Fire Resistance Level
The grading periods in minutes determined in accordance with specification A2.3 of BCA Volume One.

Fire Risk Assessment
In the context of these guidelines, a fire risk assessment is one or more, normally a combination, of:
- a qualitative fire risk assessment
- a quantitative fire risk assessment
- a regulatory assessment
Depending on the particular application.

Fire Safety Audit
A site inspection and document review to characterise the building contents, the fire safety provisions, people and the environment, to the degree necessary to undertake a fire risk assessment and to identify severe fire hazards requiring interim fire precautions.

Fire Safety Engineer
An engineer who is registered under the category of engineer, Class of Fire Safety Engineer by the Victorian Building Control Commission and has appropriate experience in conducting fire safety audits and risk assessments.
Fire Safety Plan

A document that defines the fire safety strategy for a facility in terms of the required levels of performance, design parameters and maintenance requirements for each physical or human measure/factor.

Fire Safety Strategy

A combination of physical and human measures/factors including maintenance and management systems that have been specified to achieve nominated fire risk management objectives.

Human Factors
(Measures or Precautions)

Occupant characteristics, management practices, emergency control organisation, training and the like that may impact on fire safety. Human measures or precautions typically relate to facilities/building management issues.

Interim Fire Safety Precautions

Temporary or permanent fire safety measures to address severe fire hazards prior to the implementation of the full fire safety upgrade works. Interim measures do not, as a matter of course, bring facilities to compliance.

Physical Factors (Measures or Precautions)

Fire protection equipment, lining materials, architectural layout, egress provisions and the like that may impact on fire safety. Physical measures or precautions generally relate to capital works.

Practical (practicable)

Practical (practicable) having regard to:
(a) The severity of the hazard or risk in question.
(b) The state of knowledge about the hazard or risk and any ways of removing or mitigating that hazard or risk.
(c) The availability and suitability of ways to remove or mitigate that hazard or risk.
(d) The cost of removing or mitigating that hazard or risk.

Probabilistic Analysis
(Probabilistic Risk Assessment)

A method of analysis based on the estimation of the probabilities and consequences of fire scenarios to establish, for example, the risk to life from fires in a building. This method is generally used for a comparative approach.

Relevant Building Surveyor

The building surveyor appointed to the project. The relevant building surveyor shall have obtained at least a graduate certificate related to performance-based building and fire codes and shall be registered by the Building Control Commission under the class of Building Surveyor and, in addition, under the 1997 Amendment to the Building Regulations 1994 to assess performance-based submissions.

Relevant Fire Safety Engineer

The fire safety engineer appointed to the project.

Risk Assessment

An assessment of the potential for the realisation of an unwanted event, which is a function of the hazard, its probability and consequences. See also ‘Fire Risk Assessment’.

Single Dwelling

A detached house or one or more attached dwellings, each being a building separated by a fire-resisting wall, and housing a family unit.

Supported Community-Based Houses

Houses of a typical domestic type construction and layout, which may be on separate sites or grouped together on one site with 24-hour on-site support or care staff and having a floor area not greater than 350m² and accommodating no more than six residents and where any of the residents require significant (or physical) assistance to evacuate the building during an emergency.
4. Responsibilities of Relevant Fire Safety Engineers and Building Surveyors

4.1 Fire safety audits and fire risk assessments must be undertaken by the relevant fire safety engineer, or by competent persons under the direct supervision and guidance of the relevant fire safety engineer.

4.2 Fire safety audits and fire risk assessment reports must be signed by the relevant fire safety engineer. The relevant fire safety engineer shall be employed by the organisation commissioned to undertake the fire safety audit and fire risk assessment.

4.3 The appointed relevant building surveyor shall not be an employee, agent, or principal of the relevant fire safety engineer’s organisation or an organisation related to it.

Note:
The intent is to maintain independence of the relevant building surveyor from the relevant fire safety engineer. Any other relationships or arrangements that may compromise this independence must be disclosed in writing when making fee submissions/proposals and the like.

4.4 The relevant building surveyor shall have obtained at least a graduate certificate related to performance-based building and fire codes or shall have equivalent qualifications and shall be registered by the Building Control Commission under the 1997 Amendment to the Building Regulations 1994.

4.5 The relevant building surveyor or a building surveyor from the same organisation under the direct supervision of the relevant building surveyor must carry out a site inspection during the audit process and provide a regulatory assessment against the Building Act and Regulations with respect to fire safety issues. The regulatory assessment must identify specific non-compliances with the deemed-to-satisfy provisions of the BCA 1996.
5. Principles for Fire Risk Management in Buildings or Facilities Owned or Occupied by the Department of Human Services or Department-Funded Agencies

5.1 Fire safety relies on a combination of physical and human factors. These factors will vary depending on the occupancy and building type.

5.2 Physical factors generally include:
- General building design and construction, including compartmentation and resistance of the structure to fire.
- Automatic fire detection, communication and alarm systems.
- Manual and automatic fire suppression provisions.
- Smoke control systems.
- Emergency lighting and exit signage.
- Provision and upkeep of fire retardant furnishings, textiles, fixtures and fittings where practicable.
- Egress and security provisions.
- Maintenance of equipment.

The above factors rely heavily on proper installation and maintenance to achieve an acceptable level of fire safety.

5.3 Human factors are influenced by:
- General housekeeping.
- Effective local management and organisation.
- Careful preparation of appropriate fire safety policy and procedures and ongoing training where practicable, review, and commitment to fire safety.
- Appropriate emergency control arrangements.
- Building use.

5.4 Human factors can have a significant impact on the frequency of fire starts as well as minimising the adverse consequences of a fire if it occurs.

5.5 All fire safety equipment and the associated building services and procedures are to be maintained so that, as far as practicable, the fire safety strategy for a facility is not compromised. This requirement relates to physical factors that should be maintained in accordance with Part 11 of the Building Regulations, and human factors that include management, organisation, fire safety policies, staff training and evacuation capabilities.

5.6 Where practicable, the following fire safety principles should be applied to all buildings/houses:
- That the frequency of outbreaks of fire is minimised by the implementation of an effective fire prevention strategy.
- That if a fire occurs it is rapidly detected, an alarm is given and the fire authority is called either automatically or manually.
- That there is a safe means of escape from all endangered areas to places of safety for everyone on the premises.
- That where required by the building fire risk management strategy, the development and spread of a fire be delayed and contained as long as possible by selection of appropriate linings and furnishings, and by compartmentation.
- That where required by the building fire risk management strategy, automatic suppression systems be provided to supplement the above precautions.
- That where required by Department of Human Services Policy, the Department’s Fire and Emergency Response Procedures and Training Framework or the building fire risk management strategy, training, exercises and drills be regularly undertaken, evacuation plans documented and communication systems provided. This will enable staff (and, where appropriate other occupants) to assess the situation in the event of a fire, determine the most appropriate action and implement these actions.
- That endangered areas be evacuated quickly to a pre-arranged location, according to a rehearsed procedure.
- That evacuated areas be checked for the presence of occupants and a roll call is completed.
- That the fire be extinguished as quickly as possible by automatic systems (where fitted) or by site personnel in accordance with, and to the extent covered by, their fire fighting training and experience, if safe to do so, or by external intervention of the relevant fire authority.
6. Fire Risk Management Objectives

6.1 The fire risk management objectives of the Department of Human Services can be divided into primary objectives and secondary objectives. The fire safety audit and risk assessment shall address primary objectives only unless the scope is specifically increased to address secondary objectives.

**Primary Objectives**

- To safeguard people from illness or injury due to a fire in a building.
- To comply with relevant Acts and Regulations.

Note: To satisfy the objective to safeguard people from illness or injury due to a fire in a building, the Department requires a fire safety audit and risk assessment to be undertaken on nominated facilities. This will identify fire hazards and determine practicable precautions to address the hazards. Any fire safety upgrades should be implemented in accordance with the recommendations of the relevant fire safety engineers.

**Secondary Objectives**

- To maintain services to the local community.
- To continue operations (minimise business interruption).
- To protect assets.
- To enhance public image and satisfy moral obligations.

Note: A judgement is required as to the relative importance of a building or part of a building or facility in order to ascertain if there is a need for additional precautions to satisfy the above secondary objectives. This judgement will need to be made at senior management level for the facility or building.

6.2 The objectives, functional statements and performance requirements of the BCA 1996, supplemented by the Building Regulations 1994 and other fire related statutes such as occupational health and safety (OH&S) legislation, infer community expectations for fire risk management. The Department of Human Services has adopted these as a benchmark for fire risk management in its facilities. However, each facility will normally require a uniquely tailored fire safety strategy and variations will be expected between facilities.

6.3 The Department of Human Services considers that fire prevention and fire safety (emergency) management should form an integral part of any fire risk management strategy. Given these matters are not adequately addressed in the BCA 1996, this document includes additional guidance on matters to be considered. Reference should also be made to OH&S legislation.

6.4 The individual performance requirements specified in the BCA 1996 must be satisfied or equivalency with deemed-to-satisfy solutions in the BCA 1996 must be demonstrated.

6.5 To aid interpretation of these requirements, the objectives and functional statements presented in the various parts of the BCA 1996 (Class 2 to Class 9 buildings) have been consolidated and are listed below.

**BCA Objectives**

- Safeguard people from illness or injury due to fire in a building.
- Facilitate the activities of emergency services personnel in the event of a fire.
- Protect other buildings and property from physical damage due to collapse or fire spread.
- Maintain fire protection equipment to satisfy the above objectives.

**BCA Functional Statements**

- A building is to be constructed to maintain structural stability during a fire to:
  - Allow occupants time to evacuate safely.
  - Allow for fire brigade intervention.
  - Avoid damage to other property.
• A building is to be provided with safeguards to prevent fire spread:
  • To adjoining fire compartments.
  • Between buildings.
  • So that occupants have time to evacuate safely without being overcome by the effects of fire.
  • To allow for fire brigade intervention.
7. Administration of the Fire Risk Assessment Process

7.1 A typical flow chart for the fire risk assessment process is shown in figure 2.

Note:
Figure 2 and this guideline do not describe in detail the internal processes and methodology that should be adopted by consultants in order to ensure that fire safety audits and the fire risk assessments are carried out in a thorough and methodical manner. All consultants carrying out work in accordance with these guidelines should ensure that internal processes and the adopted methodology are appropriate for the purpose.

7.2 The work program should be defined with milestone dates for nominated events, such as:
- Completion of the interim report.
- Meeting to review the interim report, define depth of study for the quantitative assessment and define interim fire safety precautions required.
- Completion of the final report.
- Completion of documentation and tendering for the implementation of interim measures.
- Meeting to discuss the final report.
- Submission of the final report, together with the relevant building surveyor and fire safety engineer certification.
- Acceptance of the final risk assessment report.
- Completion, commissioning, testing and certification of the interim precautions.
- Submission of the fire safety plan for the facility to the Project Control Group (PCG)/Fire Engineering Design Brief (FEDB) meeting for approval (project completion).

7.3 When a fire safety engineering design approach is to be used for major projects, a consultative process should be followed. This may utilise the procedures of AS/NZS 4360; or the Fire Code Reform Centre Limited Fire Engineering Guidelines (FEDB) or other agreed format. The following people may be involved in the consultation process:
- The CEO responsible for the facility, or a delegated person.
- A representative of the Department of Human Services.
- The relevant fire safety engineer responsible for the project.
- The relevant building surveyor with the necessary competence to evaluate performance-based designs.
- An architect or other members of the design team if building works are planned or being undertaken.
- The Metropolitan Fire Brigade or Country Fire Authority.
- A checking fire safety engineer.
- Other personnel as required.

7.4 In some instances, communication with some authorities/organisations may be by correspondence or supplementary meetings, rather than at a PCG meeting.

7.5 Minutes of all relevant meetings shall be circulated to all members, confirmed and appended to the final fire safety audit and risk assessment report. The relevant fire safety engineer or his/her representative will normally be responsible for recording the minutes.

7.6 A committee and/or nominated organisations will be responsible for commenting on the submissions from the fire safety engineer. In particular, they will consider:
- The accuracy of the fire audit.
- Whether the reports address the necessary issues in sufficient depth.
- Whether the respective organisations agree with the findings of the reports submitted for comment.

7.7 The interim report shall initially be submitted as a draft and prepared in accordance with section 9 of this guideline.

7.8 Outcomes from the interim report will include:
- Identification of major fire hazards that require urgent attention and the definition of appropriate interim precautions (see section 10) that must be implemented as soon as practicable.
- Identification of potential practicable precautions (trial fire safety strategies) to address fire hazards in the long term.
Note:
It may be necessary to consider more than one trial strategy in order to identify the optimum solution.

- A statement of proposed methods of analysis and design fire scenarios and acceptance criteria.

7.9 The final report shall contain the quantitative analysis and shall fully document the risk assessment process and findings and include costings of nominated fire precautions together with a prioritisation on a scale of 1 to 3, with 1 being the highest priority. The highest priority, all other factors being equal, should be assigned to measures providing the greatest risk reduction compared to the required expenditure.

7.10 The final report shall initially be submitted as a draft and be prepared in accordance with section 12 of this guideline.

7.11 Once the draft final report has been accepted by the relevant FEDB/PCG committee, the final report can be formally issued. The final report shall include the relevant building surveyor’s determination with respect to compliance with the BCA 1996 and the Building Regulations 1994. This may include a Form 13 as defined in the Building Regulations.

7.12 Where a non-compliance is identified and life safety is not significantly compromised, having regard for the practicality of the necessary precautions to alleviate the risk, the relevant building surveyor may exercise discretionary powers where permitted under the Building Regulations. Where discretionary powers are not available, the matter could be referred to the Victorian Building Appeals Board subject to approval from the PCG committee, CMB or the OoH Asset Manager and the CEO of the facility or a delegate. Where discretionary powers are used, the relevant building surveyor shall issue a Form 13 clearly identifying where discretionary powers have been exercised and certifying the remaining fire related provisions as complying with the Building Regulations.

7.13 After completion of the final report, a fire safety plan must be prepared by the relevant fire safety engineer that defines the long term fire safety strategy for the facility. Reference should be made to section 13 of this guideline for further information.
8. Fire Safety Audit

General

8.1 The primary purpose of a fire safety audit is to characterise the building, contents, fire safety provisions, people and the environment to the degree necessary to allow for a fire risk assessment to be undertaken and to identify severe fire hazards requiring interim fire safety precautions.

8.2 A full compliance or conformance audit to relevant design standards and codes for installation and maintenance lies outside the scope of the fire safety audit. However, this may be specified as an interim work where, for example, there is reasonable doubt as to the reliability of fire safety equipment or the fire resistance of structural elements.

8.3 For existing buildings, a physical audit shall be undertaken in accordance with the guidelines. It shall be supplemented by a review of all previous fire safety audits and fire risk assessments, reports and consultant surveys, which will be provided on a confidential basis to the consultant by the facility management. This requirement extends to previous draft reports and reports that may impact on fire safety or the implementation of fire safety measures, such as risk assessments undertaken for insurance purposes and asbestos audits. Such reports are provided for background information only and no reliance should be placed on previous fire audit reports. The contents of previous reports shall not be used as the basis for subsequent audits or used in full or in part for any other purpose. In addition, architectural and building services drawings shall be reviewed and interviews undertaken with key staff members. The relevant building surveyor, or a building surveyor under direct supervision and from the same organisation, must undertake a site inspection and prepare a regulatory assessment, according to the relevant sections of this guideline.

8.4 For new facilities the audit may be based on a review of drawings/design documentation and discussion with key personnel (that is, a desktop audit). Refer to section 16 for further details.

8.5 The depth of investigation and inspection undertaken during an audit must be clearly stated in a report and when a proposal is made. The depth of investigation should reflect the needs of the project.

For example, in order to perform a fire risk assessment, the likely reliability and performance of fire safety equipment may be estimated, based on visual inspection, a review of design documentation, test results and maintenance records supplemented by a statistical review.

8.6 The following is a list of parameters which a fire safety audit is expected to address, however, the list should not be considered to be exhaustive.

General Architectural/Structural/Services Design and Site Layout

Location and orientation relative to other buildings, site boundaries and other hazards.

- Overall size of the building, number of storeys above and below ground level.
- Location of fire separating elements and other enclosure boundaries, together with the position and sizes of doors, windows and other areas with potentially lower fire resistance.
- Details of structural elements including fire resistance of individual elements and structure as a whole, if appropriate.
- Building legibility and normal circulation routes, including main entrances and exits.
- Egress provisions, including the identification of dead ends, maintenance/adequacy of paths of travel, exit widths, travel distances, refuges for disabled, security requirements, provision for dispersal of people from the vicinity of the building, and horizontal exits.
- Relevant details of building services present, including heating, ventilation and air conditioning system (HVAC), hydraulic services, combustible gases (or gases which foster combustion), medical gases and related services, electrical services and
• Access for fire appliances.
• Identification of potential fire and smoke spread routes.
• Configuration of hidden voids.

**Fire Protection Equipment**

<table>
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<th>Table 1: Fire Protection Equipment</th>
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| **Automatic Fire Suppression Systems** | • Type of extinguishing medium.  
| | • Availability of extinguishing medium.  
| | • General design of system.  
| | • Age and condition of system.  
| **Fire Detection System** | • Type of system.  
| | • General locations/zones.  
| | • Age and condition of system.  
| **Structural Fire Protection** | • Type of protection and likely Fire Resistance Level (FRL).  
| | • Age and condition of system.  
| | • Likely structural response to fires.  
| **Compartmentation** | • Type and location of fire and smoke barriers.  
| | • Protection of openings and services penetrations, such as dampers, shutters, magnetic door hold-open devices, fans and vents.  
| **Active Smoke Management Measures** | • Type of systems.  
| | • Age and condition of system.  
| | • Performance of systems.  
| **Alarm Warning and Intercommunication Systems** | • Details of the following systems including functional description, age and condition.  
| | • Automatic fire alarm system.  
| | • Nurse calling system.  
| | • Paging system.  
| | • Emergency Warning and Intercommunications Systems (EWIS).  
| | • Manual Call Points (MCPs).  
| | • Public Address (PA) system.  
| | • PABX systems.  
| | • Two way radios.  
| | • Computer networks.  
| | • Mobile phones.  
| **Manual Fire Suppression Provisions** | • Type of manual suppression equipment (portable extinguishers, fire blankets, hose reels and hydrants).  
| | • Age and condition of equipment.  
| **Maintenance and Reliability of Fire Protection Systems** | • Review maintenance documentation and test results to judge adequacy of maintenance systems.  
| | • Review documentation, statistics, and results of audit to estimate reliability of the system.
Occupant Characteristics

- Number of tenants, staff, clients/patients, staff to client/patient ratios, and number of visitors, at all times of day.
- Distribution of tenants, staff and clients at all times of day.
- Mobility and awareness at all times of day (tenants, staff and clients).
- Disabilities of clients.
- Effect on client of medication administered.
- Familiarity with the building.
- Levels of fire safety training.
- Duties performed by staff.
- Potential for fire lighting behaviour.
- Age.
- Sex.
- Aggressive behaviour.
- Ability to interpret and react to an emergency.

Fire Brigade Intervention

- Equipment carried on fire appliance where critical. For example, some Country Fire Authority appliances may not have ready access to breathing apparatus.
- Attendance set-up time and number and type of first response vehicles.
- Fire hydrants.
- Site access.
- Fire fighter access (for example, stairs, lifts, protected lobby).
- Smoke extraction.
- Other information required by the Fire Brigade Intervention Model published by Australasian Fire Authorities Council (AFAC), where relevant.
- Monitored connection between facility fire indicator panel (FIP) and fire brigade or other monitoring body.
- Participation of fire brigade in facility evacuation and other training.

Enclosure Audit (of Selected Room(s))

It is expected that all enclosures will be inspected during an audit, unless access is denied or enclosures are specifically excluded. For selected enclosures it will be appropriate to obtain further detailed information for further analysis or consideration. This information may include the following:

- Size and shape.
- Use of room.
- Potential ignition sources (for example, smoking, cooking activities, electrical equipment, wiring, hazardous activities, arson, exposure to fire source features).
- Substantial combustible contents and items which would potentially aid rapid fire growth.
- Fire load density.
- Estimated fire growth characteristics.
- Enclosure boundaries and lining materials.
- Location of structural elements.
- Fire protection system provided.
- Escape routes.
- Fire and smoke spread routes.
- HVAC, heating and ventilation systems.
- Ambient noise levels.
- Number of occupants, characteristics and proximity to staff.
- Fire hazards (for example, medical gases, flammable liquids).

Fire Prevention Methods

- Maintenance of electrical and heating appliances and other hazardous items of equipment.
- Provision of circuit breakers in protection of electrical circuits.
- Provision of earth leakage protection of electrical circuits.
- Measures to minimise arson.
- Safe management practices regarding highly flammable materials.
- Housekeeping.
- Control of properties of materials (for example, flame-retardant furnishings).
Fire Safety Management

- Numbers and locations of wardens.
- Levels of staff training.
- Frequency and results of drills and exercises.
- Implementation of fire prevention strategies (that is, housekeeping).
- Implementation of maintenance policies and schedules.
- Emergency procedures.
- Adequacy of fire notices and plans.
- Management plan and reporting systems.
- Work permit systems.

Emergency Exit Signage and Emergency Lighting

- Types.
- Location.
- Adequacy.
- Reliability.

External Hazard Identification

- Type.
- Location.
- Potential consequences.

Other

Any other matters that may significantly influence fire safety or the implementation of fire safety precautions. Examples include:

- Asbestos locations.
- Security (including consideration of the effect on egress provisions).
- Functional requirements of the facility.
- The practicality of potential fire safety precautions.

8.7 Extreme hazards identified during the audit should be immediately brought to the attention of senior staff at the facility or building, and rectification works nominated as soon as practicable.

8.8 The fire audit shall be fully documented in the report and shall include an identification of all sources of information and the dates of the audit, in addition to the observations.
9. Interim Report

General

9.1 The interim report shall include as a minimum:
• Executive summary.
• The fire safety audit (see section 8) and building surveyor’s inspection report including assessment of variations from deemed-to-satisfy provisions.
• Fire statistics and literature review.
• Preliminary qualitative risk assessment.
• Determination of the required interim precautions.
• Proposed potential fire safety strategies (trial conceptual designs).
• Design fire scenarios.
• Proposed method/depth of assessment/analysis.
• Acceptance criteria of assessment/analysis.
• Issues arising from previous reports.
• Order of magnitude costs.

Fire Statistics and Literature Review

9.2 A fire statistics and literature review shall be included in the report to assist in the identification of fire hazards, major causes of injuries, the reliability of fire protection systems and other data that can be used in the risk assessment process.

9.3 All sources of information shall be referenced. Sources may include Australian Fire Statistics or Fire Statistics and Incident Reports published by the Department of Human Services.

9.4 The preliminary qualitative risk assessment shall:
• Identify all severe fire hazards requiring interim fire safety precautions and specify the necessary fire precautions to minimise the risk as far as practicable. (See section 10 for further information.)
• Identify all major fire hazards.
• Identify practicable precautions that may address the fire hazards in the long term (potential fire safety strategies).

Note:

The preliminary qualitative risk assessment should be extended in the final report to assess, for example, compliance with performance requirements of the BCA 1996 for non-residential buildings.

9.5 On the basis of the qualitative risk assessment, the following shall be proposed:
• Methods/depth of analysis.
• Design fire scenarios.
• Proposed acceptance criteria.

Note:

As a minimum, a Level 2 analysis as defined in the Fire Engineering Guidelines, published by the Fire Code Reform Centre, is required as part of the quantitative analysis for buildings or parts of buildings with client/patient overnight accommodation.
10. Interim Fire Safety Precautions

10.1 Upon completion of the fire audit and qualitative risk assessment, a number of fire hazards may have been identified. These hazards must be stated in the interim report.

10.2 In determining the need for, and extent of interim fire precautions, the following factors must be considered:

- The severity of the fire hazard(s) identified.
- A realistic time estimate to implement the potential fire safety strategies which are identified at the end of the fire audit or qualitative risk assessment. Normally interim measures should be capable of being implemented within six months of an agreement to proceed.
- A realistic estimate of the time to implement the nominated interim fire safety precautions.
- The cost, practicability and likely effectiveness of proposed interim fire safety precautions.
- Adverse consequences of implementing the proposed interim fire safety precautions (for example, interruption of day-to-day activities, hazards introduced during implementation).
- Any other factors considered pertinent.

10.3 The relevant fire safety engineer and relevant building surveyor in consultation with the PCG are required to determine if interim fire safety precautions are required and, if so, the extent of such precautions.

10.4 It is accepted that it is unrealistic to expect interim precautions to provide the same level of fire safety as that provided in the long term.

10.5 If the time difference between implementation of the permanent upgrade and the interim precautions is small, it may be reasonable to accept a higher risk than if the period is an extended one, having regard for the severity of the fire hazard.

10.6 The interim precautions may comprise a mix of human and physical precautions. The basis for determining interim fire precautions must be fully documented in the interim report, together with all assumptions made and cost estimates.

Note:
Physical precautions typically relate to capital works; human precautions typically relate to facility management issues.

10.7 The PCG is the body that is responsible for approving the interim works package.

10.8 The relevant fire safety engineer or a nominated sub-consultant shall prepare tender documentation or instruction for the implementation of physical precautions.

10.9 Tenders must be called following Government tendering procedures, unless the works are carried out under existing contracts or by facility staff in-house. It should be noted that consent may be required from reporting authorities for some works and that a building permit will be required for works relating to fire safety and essential services that are not classified as maintenance.

10.10 It should also be noted that registered builders will be required to undertake the works in accordance with the Building Regulations if a building permit is required since it is not Department of Human Services policy to act as an owner builder.

10.11 The relevant fire safety engineer or a nominated sub-consultant must act as the superintendent for works performed by external contractors and administer the project.

10.12 The relevant fire safety engineer, or a consultant with appropriate knowledge of performance-based fire engineering and fire and emergency response procedures and training, shall prepare tender documentation or instruction for the implementation of human precautions. These may take the form of, for example, detailed instructions on fire prevention measures to be implemented or a specification for training and/or drills that are required to be undertaken.

10.13 The relevant fire safety engineer must confirm that the necessary work nominated for the human interim precautions has been
satisfactorily undertaken. This may require, for example, arrangement of and/or witnessing drills, reviewing the content and extent of training or competency-based assessment procedures.

10.14 Upon completion, the relevant fire safety engineer must confirm that the interim works have been satisfactorily implemented and if a building permit has been issued an Occupancy Permit or Certificate of Final Inspection must be provided by the relevant building surveyor.
11. Assessment of Compliance with BCA Performance Requirements

General

11.1 This section describes minimum requirements for performing and documenting the assessment of a fire safety strategy against the performance requirements of the BCA 1996.

11.2 It should be noted that the relevant fire safety engineer also needs to consider other fire safety matters in order to satisfy the fire safety principles and objectives nominated in these guidelines. For example, reference should be made to sections 5 and 6 of this guideline and Guideline 7.1 Fire Risk Management Policy and Procedures.

11.3 In order to comply with the BCA 1996, it is necessary to demonstrate compliance with the performance requirements. The BCA 1996 deems that a building solution (fire safety strategy) satisfies the performance requirements if it can be shown that the strategy either:

i) Complies with the performance requirements

or

ii) Is shown to be at least equivalent to the deemed-to-satisfy provisions.

11.4 A combination approach is also permitted whereby it is necessary to identify variations from the deemed-to-satisfy provisions and then assess compliance of the variations against the performance requirements or show equivalency with the deemed-to-satisfy provisions for those specific variations.

Quantification of Performance Requirements

11.5 The performance requirements in the BCA 1996 are generally not expressed in readily quantifiable terms.

For example, performance requirement CP1 states:

CP1 A building must have elements which will, to the degree necessary, maintain structural stability during a fire appropriate to:

(a) the function or use of the building; and
(b) the fire load; and
(c) the potential fire intensity; and
(d) the fire hazard; and
(e) the height of the building; and
(f) its proximity to other property; and
(g) any active fire safety systems installed in the building; and
(h) the size of any fire compartment; and
(i) fire brigade intervention; and
(j) other elements they support.

11.6 While the performance requirements generally recognise the interaction between fire safety sub-systems by use of terms such as, ‘to the degree necessary’ and ‘appropriate to’; a value judgement as to what is an acceptable level of risk is required.

11.7 Since it is not possible to totally eradicate the risk to life from fire in buildings, a point needs to be identified where the adverse effects of additional fire safety provisions outweigh the reduction in risk achieved.

11.8 It needs to be recognised that there are individual differences in risk perceptions, attitudes and values and these impact significantly on the ‘human equation’ in the decision making process when determining compliance with the performance requirements, which are not readily quantifiable. For this reason, it is required that the relevant fire safety engineer’s organisation and relevant building surveyor’s organisation are independent and both organisations confirm that the performance requirements of the BCA 1996 have been satisfied.

11.9 The relevant fire safety engineer and relevant building surveyor can derive some guidance in determining acceptable levels of performance from the deemed-to-satisfy provisions of the BCA 1996 even when not formally adopting an equivalency approach. The building surveyor is, therefore, required to provide a regulatory assessment defining specific variations from the deemed-to-satisfy provisions.
However, it is the responsibility of the fire safety engineer as part of the design process to identify any solutions, if required, to address the variations. Additional guidance may be derived from the Australian Building Codes Board (ABCB) companion document to the BCA 1996, which presents useful background to the derivation of various deemed-to-satisfy provisions.

11.10 For example, the deemed-to-satisfy requirements can infer appropriate levels of redundancy and reliability for a fire safety strategy in addition to expected levels of performance and suitable safety factors.

11.11 It should, however, be noted that the deemed-to-satisfy solutions are required to address worst case building configuration and may, therefore, be overly conservative for specific building configurations.

11.12 The depth of analysis required will depend on the magnitude and complexity of the variation from the deemed-to-satisfy solution and perceived risk. The analysis may be based on an essentially qualitative discussion (expert judgement) or a detailed quantitative analysis or, more usually, a combination of both. For buildings providing overnight accommodation for clients/patients, a quantitative analysis must be provided.

11.13 The final report must include an assessment against each fire-related performance requirement clearly indicating how compliance has been demonstrated having regard for the nominated factors.
12. Final Report

12.1 When undertaking fire safety audits and fire risk assessments, quantitative analysis must be undertaken on all buildings containing client/patient overnight accommodation. The need for quantitative analysis of other buildings should be nominated as a recommendation in the interim report.

12.2 Risk may be considered to be the summation of the product of the probabilities and consequences of all potential outcomes of a fire.

12.3 It is not practical or economical to consider all potential outcomes. Therefore it is often necessary to simplify the analysis.

12.4 Normally a Level 2 analysis, as defined in the Fire Code Reform Centre Fire Engineering Guidelines, is appropriate for determining the adequacy of a fire safety strategy. A Level 2 analysis is essentially a deterministic study, which in itself will not give an indication of risk. However, when defining credible scenarios for analysis the reliability of fire protection systems and the probability of events must be considered. This can be achieved by, for example, analysis of the global fire safety system (that is, the entire fire safety strategy) with one or more component failures supplemented by sensitivity analysis of key parameters and consideration of reliability of equipment.

The prescriptive deemed-to-satisfy requirements of the BCA 1996 can be used as a guide to determine appropriate levels of redundancy and as a benchmark for the analysis.

Note:
Issues such as fire spread via openings can be evaluated by calculation without necessarily carrying out a Level 2 analysis.

12.5 The relevant fire safety engineer may recommend a more detailed analysis such as a Level 3 analysis as defined in the Fire Code Reform Centre Fire Engineering Guidelines to evaluate specific issues. Under such circumstances, approval of the PCG should be sought.

12.6 The risk assessment shall take a holistic approach to fire safety and consider effectiveness of fire prevention methods and fire management procedures, in addition to traditional forms of fire protection systems. The risk assessment must address hazards such as arson as far as practicable by, for example, the enforcement of security measures.

12.7 The general principles of the Fire Code Reform Centre Fire Engineering Guidelines, as a minimum, shall be adopted. In particular, the reporting requirements shall be satisfied. These are summarised below:

• Objectives of the study.
• Description of the building and its type of occupancy.
• Results of the consultative process:
  • Parties involved in the consultative process.
  • Fire safety objectives.
  • Results of the hazard identification.
  • Basis for selecting fire scenarios for analysis.
  • Acceptance criteria.
  • Trial concept designs.
  • Redundancies between and within sub-systems.
  and
• Influence of fire safety management.
• Evaluation of quantitative analysis and quantitative analysis results:
  • Assumptions.
  • Engineering judgements.
  • Risk assessment methodologies and calculation procedures.
  • Validation of methodologies.
  • Sensitivity analysis.
  • Evaluation of risk assessment results against acceptance criteria.
• Identification of final conceptual fire safety strategy:
  • Fire protection measures to be provided.
  • ‘Management in use’ issues integral to the design.
12.8 Due to the specialised nature of facilities owned or occupied by the Department of Human Services or by Department funded agencies, particular attention shall be paid to the occupant characteristics. It should be noted that the default parameters given in the Fire Code Reform Centre *Fire Engineering Guidelines* current at the time of preparation of this guideline, may not be applicable to certain Department facilities.

12.9 In addition to the requirements in (12.7) the final report shall include:

- The contents of the interim report.
- An extension of the qualitative fire risk assessment, if required.
- Regulatory assessment by the relevant building surveyor identifying variations from the deemed-to-satisfy provisions.
- Glossary of terms.
- List of variations from the BCA 1996 deemed-to-satisfy provisions.
- Evaluation against the performance requirements of the BCA 1996.
- Itemised costings for the required fire safety precautions.
- Indication of the priority for the works on a scale from 1 (highest priority) to 3 (lowest priority).

12.10 The prioritisation should be based on the level of risk reduction having regard for cost, anticipated speed of implementation, practicability, current level of risk and benchmarks such as the building regulations.

Unless otherwise notified, the fire safety engineer may assume the following implementation timing for priority 1 to 3 works:

Priority 1: within two years.

**Note:**

This is consistent with the period that the Building Regulations allowed for retrospective installation of smoke detection in residential properties.

Priority 2: two to five years

**Note:**

This is consistent with the period that the Building Regulations allow for retrospective installation of automatic fire sprinkler system in high risk facilities such as supported community-based houses.

Priority 3: more than five years.

Except in extreme cases, not all works should be allocated as Priority 1 to enable the Department to best allocate funds across all its facilities.

The facility should establish and maintain a program for the implementation of Priority 2 and 3 works.

12.11 A statement of compliance, with the Building Regulations, the BCA 1996 and relevant Department of Human Services guidelines, shall be provided by both the relevant fire safety engineer and the relevant building surveyor.

12.12 The relevant building surveyor may issue a Form 13 as defined in the Building Regulations. It is noted that a Form 13 should not be provided by the relevant fire safety engineer or other employee of the same or a related company since they are the designers of the fire safety strategy.

**Note:**

Both the fire safety engineer and the building surveyor shall document in their reports the basis on which they have determined compliance with the BCA 1996 in sufficient depth to enable a third party to understand the logic behind their decisions.

12.13 It is expected that the final report will fully document the fire safety audit and fire risk assessment process and that it should also undergo an internal review process by the organisation responsible for its preparation.
12.14 To help ensure that all issues identified during the audit/risk assessment are adequately addressed, a quality matrix must be included in the final report comprising, as a minimum, the following entries:

- Brief description of issues requiring action or further investigation.
- Section(s) in the report that identify and describe an issue
- Brief descriptions of required measures to address the issue(s).
- Section(s) in the report identifying measures to address an issue.
13. **Fire Safety Plan**

13.1 The conceptual fire safety strategy for a facility shall be described in a fire safety plan, which must detail the fire safety policy for the facility. This shall be prepared by the relevant fire safety engineer and provided as a separate document.

13.2 The document is to provide senior staff and other professionals with a clear understanding of the fire safety strategy for the site and what is required to ensure it is correctly implemented and maintained.

13.3 As a minimum it must include:

- A description of the conceptual fire safety strategy for the site including both physical and human measures.

- Recommendations for preserving the effectiveness of the fire safety strategy:
  - During future building alterations.
  - During changes in management and occupant characteristics by adequate maintenance of the fire protection system and training of staff.
  
  and

- By providing a long term strategic plan for fire safety that is consistent with the site master plan.

- For each physical fire safety provision/fire protection system, as a minimum, a general description of the system together with the relevant design standards and maintenance/testing standards and regimes required to be implemented must be specified.

- For each human/management measure, a general description shall be provided together with methods for implementing and maintaining the measures with reference to relevant standards and other publications shall be provided.

14.1 Implementation of the fire safety upgrade may involve engineers and building surveyors not involved in the initial audit. In these circumstances, the following procedures must be followed:

- The implementation team must identify all matters in the fire audit/risk assessment report and conceptual design that they consider ambiguous or open to interpretation. They should then request, in writing, clarification on specific issues from the relevant fire safety engineer who undertook the audit and risk assessment.

- Upon receipt of any clarifications, the design team shall document the upgrades and provide statements that the design is in full compliance with the fire safety upgrade strategy. A similar statement shall also be provided from the building surveyor who is commissioned for the implementation phase.

- Any variations from the conceptual design must be documented and submitted to the original relevant fire safety engineer.

- The relevant fire safety engineer must then prepare a supplementary report assessing these variations. If the implementation team includes a building surveyor who is qualified and registered to undertake performance based assessments, the supplementary report may be submitted to them for approval. Alternatively, the original relevant building surveyor can be approached to issue a Form 13.

- The tender documentation shall be submitted to the facility management and the relevant fire safety engineer who undertook the original audit and risk assessment. They should then review the documentation and, subject to general compliance, provide a comment that the documentation generally complies with the specified fire safety strategy. It should be noted that this review is not a detailed review, for example, to assess compliance with standards, quality assurance issues, the adequacy of commissioning requirements and the like.

- The fire safety upgrade design team in conjunction with the building surveyor who is commissioned for the implementation phase shall document fire precautions to be taken during building works to minimise, as far as practicable, fire and other risks. They shall also liaise with the facility to ensure disruption is minimised.

Note:

Under regulation 2.2 of the Building Regulations certain matters are required to be referred to reporting authorities such as the Chief Officer of the relevant fire brigade if they vary from deemed-to-satisfy provisions of the BCA 1996. It is the responsibility of the fire safety upgrade design team to refer such items.

14.2 Tenders must be called following approved tendering procedures, unless the works are carried out under existing contracts.

14.3 A building permit may be required for works relating to fire safety and essential services.

14.4 Upon completion, both the relevant design engineer(s) and the building surveyor must confirm that the works have been satisfactorily implemented and an Occupancy Permit or Certificate of Final Inspection must be provided by the building surveyor.

14.5 The documentation works supervision and quality assurance measures applied by the design engineer(s) and building surveyor shall be sufficient to ensure correct installation of the works.

14.6 The implementation team shall ensure that the consent from the relevant reporting authorities are obtained prior to building permits being issued.
15. Implementation of Priority 1-3 Human Measures

15.1 The implementation of human measures will be the responsibility of the facility.

15.2 Human measures generally relate to the management of a facility and do not normally relate to capital works.

15.3 Further guidance can be obtained from the Department of Human Services Fire and Emergency Response Procedures and Training Framework.

15.4 Human measures play an important role in the fire safety strategy for most Department of Human Services facilities. Implementation programs must be developed, implemented and subsequently maintained.

15.5 The relevant fire safety engineer should be commissioned to review the implementation of any recommendations made during the fire safety audit and risk assessment process.
Works Incorporating Overnight Client Bed-Based Accommodation

16.1 Figure 4 shows an example of the capital investment process for typical Department of Human Services facilities.

16.2 Where required, the relevant fire safety engineer and building surveyor should be commissioned during the planning and evaluation phase to provide preliminary input into the master plan through to schematic design and design development phases.

16.3 The fire safety engineer’s role shall be directed towards identifying cost-effective fire safety strategies that are consistent with the functional use of the building.

16.4 Where required, a desktop fire audit should then be undertaken by the relevant fire safety engineer followed by a risk assessment based on the available documentation at one of the following stages:

- Schematic design
- Design development
- Contract documentation.

It is preferable that the risk assessment is performed at the schematic design or design development stage to minimise the need for major changes to the design documentation. The timing of this work will vary depending, amongst other things, on the detail provided in the schematic or design development design and the time available.

16.5 The scope, depth and methods described for auditing, carrying out risk assessments, assessing compliance with the BCA 1996 and preparing fire safety plans for existing buildings shall be applied to new buildings together with certification requirements except that:

- A desktop audit on design drawings will be undertaken rather than a physical inspection/audit.
- Interim works and the prioritisation of works will not be required unless the new building works are part of a redevelopment.

16.6 The design team members preparing tender documentation shall provide statements that the design is in full compliance with the fire safety strategy defined by the relevant fire safety engineer. The relevant fire safety engineer shall then review the tender documentation and provide a statement, subject to general compliance, that the documentation generally complies with the fire safety strategy.

16.7 The building surveyor shall carry out a similar review and issue a building permit.

16.8 Throughout the construction phase, any proposed changes to the fire safety strategy shall be notified in writing to both the relevant fire safety engineer and building surveyor. The fire safety engineer shall then prepare a supplementary report assessing the effects of the variations. The supplementary report shall then be submitted to the building surveyor, who, if satisfied that the design satisfies the BCA 1996, relevant regulations and relevant Department of Human Services guidelines, may approve the variation.

16.9 The design team involved in managing the construction phase shall report, in writing, on the degree of compliance with the fire safety strategy, BCA 1996 and Building Regulations. Any variation must be assessed by the relevant fire safety engineer in a supplementary report and submitted to the building surveyor.

16.10 The building surveyor shall undertake a final inspection and issue an Occupancy Permit when they are satisfied that the works have been adequately carried out.

16.11 The relevant fire safety engineer shall participate in the post-occupancy review. In particular, an assessment of the human factors, such as emergency procedures, training and the like, shall be undertaken as well as an examination of physical factors, such as fire protection equipment.

16.12 The relevant fire safety engineer shall prepare a post-occupancy review report identifying any non-compliance and recommending corrective actions.
Note:
If the building surveyor does not have the qualifications required by the Building Control Commission to make performance-based judgements, arrangements should be made for a

From 13 to be provided by either a fire safety engineer or an appropriately qualified building surveyor who is not part of the design team and is not employed by the same organisation as the fire safety engineer or related organisation.

Figure 4: The Capital Investment Process

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17. General Responsibilities

17.1 It is the responsibility of the fire safety engineer undertaking the consultancy works to formulate a fire safety strategy that would satisfy the Department of Human Services objectives.

17.2 It is the responsibility of the relevant building surveyor to check that the objectives have been satisfactorily addressed and that the upgraded building is fit for occupation once the nominated works have been undertaken.

17.3 It is the responsibility of the implementation team and facility to ensure that the capital works and human measures respectively are fully and correctly implemented.