



Involvement of fire authorities in building design

Discussion paper on BCR recommendation 8
June 2021

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Preface

The Building Confidence Report (BCR), published in 2018, identified issues with the regulatory oversight of the construction of buildings in Australia. It noted that fire authorities lack confidence that buildings will comply with the minimum fire safety requirements of the National Construction Code (NCC).

Recommendation 8 of the BCR is: *That, consistent with the International Fire Engineering Guidelines, each jurisdiction requires developers, architects, builders, engineers and building surveyors to engage with fire authorities as part of the design process.*

The BCR identified that the triggers for fire authority involvement and their resourcing by governments differ across jurisdictions, resulting in “similar buildings in different jurisdictions having different requirements imposed by the fire authorities”. It noted that at a minimum, fire authorities should provide comment on Performance Solutions impacting fire brigade intervention, however fire authorities may sometimes want to consider, and object to, broader aspects of a building’s fire engineering design.

In response to this recommendation, the BCR Implementation Team (the Team) developed this discussion paper, which seeks your views on the issue of fire authority involvement in building design. It proposes:

- a Code of Conduct for Fire Safety Engineers, and
- model guidance for states and territories on the minimum involvement of fire authorities in the building design process.

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Part 1: Background and issues

The BCR was commissioned in 2017 and published in 2018. Since its release three years ago, there have been several changes in the fire engineering space, however discussions with stakeholders have revealed that distrust between fire safety engineers and fire authorities still exists and there are still concerns about some practices by some fire safety engineers.

All stakeholders consulted to date, including fire safety engineers and building surveyors, acknowledge the importance of the role that fire authorities play in building design. Fire authorities bring knowledge about fire behaviour and how buildings respond to fire, and provide a point of view on the fire safety design based on their expertise in fire-fighting.

Stakeholders have noted that fire authorities have a broader role than that focused on in this discussion paper. Their broader community roles include prevention and community safety responsibilities, and their roles in relation to buildings include:

1. Being users of buildings i.e. rescuing occupants, dealing with chemical spills and extinguishing fires. Building designers should take this role into account when designing and check with the intended users that the finished design/completed building meets the user requirements.
2. Determining some of the parameters for building performance by their intervention capacity and/or intentions. This is the core of the engagement required under IFEG. This deals with building performance in the absence of the fire authorities as users.
3. Undertaking acceptance testing of some fire systems such as hydrants, hose reels, alarms, etc.
4. Providing advice or approval as part of building approval processes.

This discussion paper relates primarily to the second aspect above.

Events such as the Lacrosse building fire in 2014, the Neo 200 building fire in 2019, the UK Grenfell Tower fire in 2017 and several prominent building fires in Dubai are reminders of why fire safety engineers and fire authorities must work together to achieve safe buildings.

Note on terminology

This discussion paper refers to fire safety engineers. Under the National Registration Framework¹ (NRF), a function-based model of building practitioners, fire safety engineers are referred to as fire safety designers because they holistically consider the fire safety design of buildings. People in the role apply fire safety engineering principles and data to the design of a building.

In the NRF fire systems designers are technical experts with specific skills in the design of one or more fire safety systems, such as water-based firefighting and fire suppression systems.

Changes since the BCR was published

National Construction Code change

Since the BCR was published in 2018, the ABCB has incorporated a requirement in NCC Volume One at Clause A2.2 (4) that where a Performance Requirement is proposed to be satisfied by a Performance Solution, a Performance-Based Design Brief must be prepared in consultation with relevant stakeholders. For Performance Solutions impacting fire brigade intervention, this would include fire authorities. This is consistent with the International Fire Engineering Guidelines (IFEG).

Australian Fire Engineering Guidelines

In 2018, the Office of the ABCB reviewed the IFEG. Canada, the USA and New Zealand, the co-developers of the IFEG, advised they were not able to assist the review and did not use the IFEG in a similar way as Australia. The Office of the

¹ A draft of the NRF is available here: <https://consultation.abcb.gov.au/engagement/dp-national-registration-framework/>. An updated version will be published in late 2021.

ABCB therefore completed its review and, at the direction of the ABCB Board, developed the AFEG, an Australian version of the IFEG.

A Building Codes Committee working group informed the development of the AFEG, which occurred in parallel with developing the Performance Solutions handbook. The Warren Centre was engaged to review international guidance to inform the AFEG and Engineers Australia was engaged to review and redevelop relevant components of the IFEG so the AFEG would be a contemporary guide relevant to Australia that utilises international guidance.

The resulting AFEG embraces worldwide best practice but is tailored for Australia and is compatible with BCR implementation. The AFEG does not place mandatory requirements on building practitioners; this is the role of state and territory legislation. The AFEG is expected to be published in the second half of 2021.

Further changes due to the BCR

The Team is delivering responses to BCR recommendations² to states and territories that, if implemented, will improve the systemic issues that have contributed to the lack of confidence of fire authorities. The BCR identified that part of the issue in mandating the IFEG was related to fire safety engineers not being registered practitioners in most states and territories. BCR recommendations 1 and 2, if implemented, will require fire safety engineers to meet consistent national registration requirements including education, competencies and experience. Under BCR recommendation 3, they will be required to undertake CPD on the NCC. Other recommendations that will contribute most to systematic improvements related to fire safety are at **Appendix A**.

The Team believes implementing these recommendations will address most issues associated with the quality of the development and documentation of fire safety Performance Solutions set out at **Appendix B**.

² Published outcomes delivered to date are available at: <https://www.abcb.gov.au/Initiatives/All/building-confidence-report-implementation-team>.

The role of government

Governments are responsible for ensuring that building approval processes function effectively and efficiently to produce buildings that are safe for use and minimise risk to building users. This means ensuring that each building's design considers and addresses the needs of its anticipated users.

Responding to building emergencies involving fire is the responsibility of fire authorities. Their involvement in the design of buildings helps ensure:

- occupants can be assisted, if needed,
- fire fighters attending events at the building can access the building and fire-fighting equipment,
- fire-fighting access and equipment meets their needs, and
- the building does not present additional work, health and safety risks to fire fighters attending events.

Governments resource fire authorities. By determining the role that fire authorities should play in building approvals processes, governments ensure that approvals processes reflect social expectations and needs, including effectively and efficiently using resources.

Remaining work to be addressed under BCR recommendation 8

To systematically improve aspects of building approvals processes, this discussion paper proposes that the work remaining in response to BCR recommendation 8 is:

- developing a Code of Conduct for Fire Safety Engineers, as specifically recommended in the BCR. This could require that fire safety engineers follow the AFEG, thus achieving the desired outcome of the recommendation (refer Part 2 of this paper), and
- providing model guidance to states and territories to create more consistency, where possible, in referrals. This would support better awareness and understanding amongst practitioners of requirements and decrease project risk for the building industry (refer Part 3 of this paper).

Part 2: Standards of conduct for fire safety engineers

Fire safety engineers play a critical and growing role in the safe design of buildings. Building practitioners, such as building surveyors and designers, rely on their advice to ensure new buildings will meet the fire safety requirements of the NCC. Fire safety engineers are also frequently engaged to develop Performance Solutions to address fire safety Performance Requirements for new building design.

It is important that building practitioners and fire authorities have confidence that fire safety engineers perform their duties with integrity and act in the public interest.

The Team believes that a Code of Conduct for Fire Safety Engineers could increase confidence in fire safety engineers' conduct and mitigate the lack of trust from fire authorities.

There are existing codes for engineers, such as Engineers Australia's Code of Ethics³ and the Board of Professional Engineers of Queensland's Code of Practice for Registered Professional Engineers⁴, however these are not specific to fire safety engineering and do not contain adequate guidance on how to approach issues commonly faced by fire safety engineers.

Context

The draft AFEG states:

The practice of fire engineering has been facilitated by continuing advances in computing technology, digital models and the introduction of performance-based codes with specific provision for the acceptance of fire engineered solutions.

³ Available at: <https://www.engineersaustralia.org.au/ethics>.

⁴ Available at: <https://www.bpeq.qld.gov.au/wp-content/uploads/2019/05/180517-BPEQ-Code-of-Practice-131129-web.pdf>.

Despite these advances, fire engineering is still an emerging discipline. Our knowledge of fire science is still quite limited compared to our basic understanding of other fields of engineering. For example, we still cannot predict from first principles the fundamental heat release rate of simple office furniture or combustible wall cladding during a fire. Our ability to predict the emission of toxic gas is extremely limited at best. Our understanding of human behaviour is still crude.

*As a result, engineering judgement (or the use of engineering estimates) is a key part of fire engineering practice. **No fire engineering design can be developed without the use of engineering judgement;** based on data, experience, and current understanding of fire science and human behaviour*

This description reflects the emerging nature of this engineering discipline and the need to develop regulatory tools to support consistent approaches that are ethical and grounded in the need for acceptable public safety outcomes.

Benefits of a Code specific to fire safety engineers

A Code of Conduct for Fire Safety Engineers (a Code) would align to the AFEG and to the work of the Warren Centre. The AFEG, like the IFEG, will not be mandatory. If mentioned in a Code, which itself could be picked up in state and territory legislation, practitioners may be more likely to follow the AFEG, achieving the intention of the BCR recommendation.

Although Engineers Australia has a Code of Ethics, it is a very high-level document that applies to all engineers and therefore doesn't provide specific guidance on its application to the work of fire safety engineers. Because it is so high level, it is open to broad interpretation and, due to inconsistency in engineering practice, is difficult to enforce. A comparison of existing codes is at **Appendix C**.

In the same way as the Code for Building Surveyors, a Code of Conduct for Fire Safety Engineers would outline the standard of professional conduct the practitioners must meet. As such it will boost competence and build trust and public confidence in the profession. It will also educate other practitioners about the role of the fire safety engineer and can be used to promote and define the role of the fire safety engineer.

Types of behaviours to be addressed

The Code would address core obligations that are common to all professions, including the requirement to act in accordance with relevant laws, act in the public interest and act within and maintain competence. It would require honesty, integrity and transparency and call for respectful and collaborative interactions with others.

The Code will also include obligations that are specific to the practice of fire safety engineering and have been referred to in various documents including the draft AFEG, the Warren Centre work and the Society of Fire Safety practice notes (formerly published).

The types of behaviours that have been reported and are proposed to be addressed by the Code include:

- The silo-like approach to the development of Performance Solutions as directed by the building surveyor rather than considering holistic fire safety design, which requires consideration of the interaction between Deemed-to-Satisfy (DTS) Solutions and Performance Solutions and other design brief requirements,
- The development of design that pushes risk and cost through to the unassuming end user (i.e. reducing passive fire protection in favour of complex active systems which require high levels of costly maintenance). This can also be described as placing the commercial objectives of developers above acceptable public safety outcomes for end users,
- Recommending a DTS solution or a Performance Solution that is equivalent to a DTS requirement when the engineer believes that the DTS would not achieve an adequate level of safety for that element of the fire safety design or for the building,
- Designing with the intention of avoiding engagement with fire authorities by seeking to circumvent legislative triggers for fire brigade consultation or ignoring advice that is given,
- Not having due respect for the fire authorities' expertise in fire brigade intervention, rescue and fire-fighting,

- Over-qualifying designs – i.e. making assumptions about things that can be readily verified and should be known in order to determine fundamental aspects of the design (e.g. the material proposed for use as external cladding),
- Not having due regard to common and known behaviours of building occupiers (such as their propensity to store combustible materials on balconies and in egress pathways and to disable smoke detection) and consider their impact on fire prevention measures or management in use plans,
- Failure to consider and provide for egress and evacuation management procedures for disabled or vulnerable occupants having regard to the prevalence of people affected by these conditions in the community and their use of buildings, and
- Failure to consider arson as a fire hazard and to have due regard for property protection and resilience in buildings.

Each of the above practices (and others identified through further consultation) would be addressed in the Code through examples or clear assertions against a certain practice or by defining appropriate practice.

Outline of the content of the Draft Code of Conduct for Fire Safety Engineers

Below is an outline of the content of the draft Code. Similarly to the Code of Conduct for Building Surveyors⁵, also produced by the ABCB, the draft Code would be developed with input from governments and industry and would be provided to states and territories. They could choose to reference it in legislation or guidance materials, or adopt it as required to suit their specific jurisdictional needs.

⁵ Available at: <https://www.abcb.gov.au/Resources/Publications/Corporate/National-Model-Code-of-Conduct-for-Building-Surveyors>.

The Code will establish minimum expectations of fire safety engineers. It will apply to fire safety engineers providing fire safety engineering services. It will not be limited to fire safety engineers performing statutory functions.

It will include core obligations of fire safety engineers. The obligations are based on conduct that promotes public safety, competence and integrity in the building and construction industry.

The Code is intended to be consistent with and complement the AFEG once it is published.

Outline

This outline focuses on the obligations to be included in the Code, grouped under four key areas:

- Comply with the law and act in the public interest,
- Professionalism,
- Honesty and integrity, and
- Transparency and accountability.

The full Code, to be developed following public consultation, will include more detailed explanation together with examples to assist practitioners to understand their responsibilities and apply the Code in a similar way to the Code of Conduct for Building Surveyors.

Obligations

Comply with the law and act in the public interest

1. A fire safety engineer must comply with laws relevant to their work, conduct and organisation.

This means that a fire safety engineer must comply with the requirements of the legislation that govern their work and business, including but not limited to building and related legislation; the National Construction Code as called up in each jurisdiction; consumer protection; work, health and safety; and privacy laws.

2. A fire safety engineer must act in the public interest when providing fire safety engineering services.

This includes interpreting legislation consistent with the stated purpose and objectives and ensuring that where there is doubt as to possible interpretations, the interpretation that best serves the objectives of the legislation in the public interest is preferred over personal interests or those of a client. In some cases, this may mean recommending against the use of a DTS solution – or a Performance Solution that is equivalent to a DTS solution – on the basis that it will not achieve an adequate level of safety for the specific building being designed even though it is deemed compliant.

3. A fire safety engineer must apply the AFEG when providing fire safety engineering services.

In undertaking design, a fire safety engineer should:

- develop a fire safety strategy that has due regard to holistic fire safety design and recognising that the interaction between DTS and Performance Solutions can impact the overall level of fire safety,
- identify and examine all fire hazards in a building applying a sound hazard analysis including consideration of the combustibility and fire performance of existing or proposed building materials,
- have regard to common and known behaviours of building occupiers (that are likely to include using common areas, balconies and other spaces for storage) and consider their impact on fire prevention measures,
- consider egress and management procedures for disabled or vulnerable occupants having regard to the prevalence of people affected by these conditions in the community and their use of buildings,
- have regard for the potential for arson based on research and buildings where arson is a known risk, and
- have regard to client and building design objectives beyond the fire safety requirements of the NCC such as asset protection, resilience, environmental protection and sustainability.

4. A fire safety engineer must notify the relevant government authority where they have become aware of, or hold a reasonable suspicion of, unlawful activity or a matter that creates an immediate or imminent risk to health and safety, in relation to a building for which they are or were engaged to provide fire safety engineering services.

Professionalism

5. A fire safety engineer must only perform fire safety engineering services that are permitted under their registration and within their professional competency.
6. A fire safety engineer must maintain their professional competency to ensure their knowledge and skills are current for the work they undertake.
7. A fire safety engineer must have due regard and respect for the role of fire authorities.

This includes developing an appreciation for matters relevant to fire brigade intervention and the risks to emergency services personnel when responding to emergencies. It also includes **not** designing with the intention of avoiding engagement with fire authorities by seeking to circumvent legislative triggers for fire brigade consultation.

8. A fire safety engineer must work cooperatively and respectfully with building practitioners, professionals, regulators, fire authorities and other stakeholders avoiding derogatory and insulting language or behaviour.
9. A fire safety engineer must act in a manner that engenders confidence in and respect for the fire safety engineering profession.

Honesty and integrity

10. A fire safety engineer must
 - take all reasonable steps to avoid actual or potential conflicts of interest, and

- not perform fire engineering services where a reasonable person would conclude there is a real risk that their decision could be influenced by conflict of interest.
11. A fire safety engineer providing a third-party review must be independent of the project and its participants, impartial, detached and constructive in their approach to the review.
 12. A fire safety engineer must not disclose confidential information obtained in the course of performing fire safety engineering services, except where the relevant person has granted consent, or there is a legal or professional duty to disclose the confidential information.
 13. A fire safety engineer must ensure any agreement or contract for performing fire engineering services is consistent with this Code and legislation, including referenced documents.
 14. A fire safety engineer must notify regulators in each state and territory where they are registered if they have:
 - been found to have breached the code of conduct in another jurisdiction,
 - had registration or another type of authorisation as a building practitioner suspended or cancelled in another jurisdiction,
 - been found to have breached laws related to planning, building, or development in any jurisdiction, or
 - had a professional indemnity insurance policy refused, cancelled, or had conditions applied that are inconsistent with state and territory laws.

Transparency and accountability

15. A fire safety engineer must clearly document assessments and reports, including their scope, objectives and any assumptions.

This includes actively seeking all necessary information required to apply sound engineering judgement and all requirements of this code. Assumptions about

matters which can be readily determined based on inspection of a building, work or related documentation or after reasonable enquiry should be avoided.

Questions about a Code of Conduct for Fire Safety Engineers

1. Do you agree with the proposed benefits of a Code?
 - a. Why?
2. Are there drawbacks to implementing a Code?
 - a. What are they and how can they be mitigated?
3. Do you agree with the proposed scope of the Code?
 - a. If you do not agree with the proposed scope, what improvements would you suggest?

Part 3: Model guidance to states and territories on fire authority involvement

Stakeholders have advised that consistency in the triggers for the involvement of fire authorities in building design is important. Fire safety engineers, and other building professionals, sometimes work across borders and may not be familiar with the different legislative requirements for the involvement of fire authorities. Consistency will support automatic mutual recognition and increase economic productivity.

Below is an outline of model guidance that could be provided to states and territories to address this issue as well as ensuring:

- building practitioners understand the needs of fire authorities,
- building practitioners are prepared to undertake the process of consultation with fire authorities as part of building design; and
- fire authorities have the necessary skills and expertise to provide the advice.

Outline of the content of the model guidance

Defining fire authority involvement

A challenge in defining a nationally consistent role for fire authorities is that jurisdictional legislation already sets varying scopes for fire authority involvement in building design processes, and there are significant differences (refer **Appendix D**). Triggers vary from floor size, to building class, to the use of specific Performance Solutions.

Advice from fire authorities with broad involvement in building design is that they do not want their role to be narrowed. A national broadening of fire authority involvement in building design may not necessarily contribute to better safety outcomes. The Team understands there is inadequate data to compare how different jurisdictional triggers contribute to safety outcomes.

To explore the potential for a nationally consistent approach to the role of fire authorities, the Team tested the following definition of the fire authority role with several stakeholders.

During the building design process, the role of fire authorities could be defined as to provide advice on the development of Performance Solutions impacting the intervention of fire authorities at a building.

This is consistent with the AFEG and NCC 2019 Volume One clause A2.2(4) and based on stakeholders advising it is not feasible to refer every building design to fire authorities and that buildings designed to meet the NCC Deemed to Satisfy (DTS) provisions should not be referred. This is because referral of only performance-based fire engineered designs ensures that fire authorities are involved in deviations from prescriptive design standards, where the design could negatively impact the ability of a fire authority to manage a fire. This also recognises that fire authorities have opportunity through the Australian Building Codes Board's Building Codes Committee and Australian Standards committees to directly influence the review and update of NCC clauses and Australian Standards, referenced in the NCC.

While some stakeholders agreed with the definition, others, including fire authorities, disagree.

Other stakeholders, when asked whether they thought fire authorities should have involvement in DTS-only buildings, noted that the DTS provisions set a minimum compliance benchmark that attempts to balance safety in buildings with affordable construction. While the DTS provisions do not eliminate risk, risk is considered in their development by building experts. The DTS provisions of the NCC are deemed compliant and, provided the building complies with the DTS, the law may prevent fire authorities from seeking a higher standard of fire safety to be met.

One stakeholder noted a narrow interpretation of the tested definition above may capture only Performance Solutions related to sprinklers, hydrants, hose reels etc. This would exclude Performance Solutions that relate to fire/smoke walls, stair shafts, compartmentation and other design aspects which potentially compromise the protection of fire-fighters as they move towards the seat of the fire.

Based on early feedback, the discussion questions below seek your views to better define the above definition as an option.

Alternatives to involvement based on whether a building uses Performance Solutions impacting fire authority intervention are: NCC clause-related triggers; building class-related triggers and a risk-based model.

Fire authority involvement on a risk basis

All stakeholders consulted to date have indicated they want fire authority involvement in the building design and approval process. They recognise the importance of design input from people with an understanding of fire-fighting methodologies, or experience in fire-fighting activities, and who can advise on designing defensible buildings.

Stakeholder views vary on the extent to which fire authorities should be involved, and whether certain buildings should be exempt from requiring fire authority input.

A risk-based model could potentially capture NCC clause-related triggers and/or building class-related triggers. One stakeholder suggested all hospitals, aged care facilities, high-rise residential and childcare centres located above street level be referred, as well as buildings triggering NCC clause E1.10 (provision for special hazards), carparks including carpark stackers, and Class 2, 3 and 9 buildings in areas of higher bushfire risk. Another stakeholder suggested Performance Solutions related to the safety or protection of building occupants from fire, passive fire systems included in Performance Solutions, and certain buildings with fire safety Performance Solutions in bushfire-prone areas. A risk-based model would have the ability to capture these types of nuances.

Work in response to the BCR has included defining the roles of building industry participants, including through the NRF, the Code of Conduct for Building Surveyors and frameworks covering mandatory inspections and independent third party review. Setting nationally consistent expectations for fire authority involvement, similar to setting nationally consistent expectations for building surveyors and other key practitioners, supports a functional building approvals system with clear responsibilities.

Current state and territory triggers for the involvement of fire authorities in building design are at **Appendix D**. They vary significantly across jurisdictions, with the ACT requiring involvement of fire authorities only when Performance Solutions are used and Tasmania requiring involvement of fire authorities for most buildings, including buildings that do not include Performance Solutions. It is unclear what evidence has determined the unique interventions of each state and territory. Model guidance could explore the possibility of a risk-based trigger, noting that stakeholders have expressed differing views to date on the suitability of the current definition of building complexity.

Applying the definition of building complexity as a trigger for the involvement of fire authorities was considered, but stakeholders felt that use of the definition could misdirect resources to buildings that were not complex in terms of fire-fighting risks while failing to capture buildings that did present higher fire-fighting risks. The triggers considered in development of the model guidance are therefore likely to be drawn from existing state and territory triggers, including total floor space thresholds, use of Performance Solutions and requirements for extra fire-fighting equipment.

A collaborative approach

Model guidance may propose “touch-points” during the design process. This could include that fire authorities be open to informal consultations with building practitioners about building design, including at the conceptual design stage. This would be a more collaborative approach than seems to exist in some jurisdictions.

However, some stakeholders advised that fire authorities are not willing to discuss building design until building plans are advanced, meaning that if fire authorities object to aspects of the design, the cost and time impacts of rectifying them are greater and practitioners are more likely to object to the requested changes.

Stakeholders have advised that when fire authorities are unwilling to engage at an early stage, project risk increases. They believe that if fire authorities provided early and broad advice about their risk tolerance related to Performance Solutions, in particular, this would allow design teams to have confidence that their work is likely to be acceptable to fire authorities without significant conceptual changes, a

significant benefit practitioners consulted have indicated they would be willing to pay for.

Fire authorities, through the National Council for Fire and Emergency Services (AFAC), noted in 2019 that:

“There is significant economic value in being involved from the beginning of a project. It is more cost effective than dealing with non-compliance and consequent rectifications during and after the construction process. This is amply shown with the recent cladding crisis.”

The BCR noted that at a minimum, fire authorities should provide comment on Performance Solutions impacting fire authority intervention, however fire authorities may sometimes want to consider, and object to, broader aspects of the fire engineering design. Early engagement would support this to occur.

In addition to involvement at the design concept stage, AFAC also noted in 2019 that it believed fire authorities should be involved at building design approval stage, when variations occur and prior to issue of any occupancy approval. How this involvement would look in a nationally consistent model could be explored in model guidance.

Collection of data

One of the issues in determining nationally consistent triggers has been a lack of data on the effectiveness of current interventions by building Class, size, requirements for extra fire-fighting equipment and/or use of Performance Solutions. It is unclear whether the differing requirements in one jurisdiction achieve better safety outcomes for building users than the requirements in another jurisdiction. Data has the potential to inform operational resourcing and decision-making, both at a high level and at the time of responding to an event.

Collecting data would align with the BCR’s focus on the importance of regulators having and sharing data (recommendation 12) and publishing relevant auditing outcomes data (recommendation 7).

The type of data that could be collected to assess safety outcomes could be covered at a high-level in model guidance and could be used in future to determine which triggers for referral of buildings to fire authorities are most effective and efficient.

Advice versus consent

Some fire authorities have the ability to prevent the issue of approvals, and are referred to as ‘consent authorities’, however most fire authorities are ‘advice authorities’ because they only provide advice which is non-mandatory (refer **Appendix E**). Some fire authorities have standing to commence appeals when non-mandatory advice is not taken up. Stakeholders have advised that even when advice is non-mandatory and legislation provides options for building surveyors not to implement it, most building surveyors do implement it for several reasons, including wanting to maintain good relationships with fire authorities, wanting to avoid liability issues later and because it is good practice.

Many stakeholders have advised that they would prefer fire authorities to be advice authorities. The model guidance will consider the benefits and drawbacks of advice versus consent authorities and will make a recommendation to states and territories about whether one is better than the other.

Skills and expertise to provide advice

The National Registration Framework⁶ (NRF) responds to BCR recommendations 1 and 2 on consistent national registration requirements for building practitioners. It sets out the education, competencies and experience needed to meet the expectations of certain building roles, including for fire safety engineers.

As fire authorities do not issue certificates as part of issuing advice, the fire safety experts assessing applications would not be captured by the National Registration Framework and be required to have certain education, competencies and experience. The model guidance is likely to consider the attributes needed by fire

⁶ A draft of the National Registration Framework is available here: <https://consultation.abcb.gov.au/engagement/dp-national-registration-framework/>. An updated version will be published in late 2021.

safety experts who work on behalf of fire authorities to assess applications and provide advice or consent.

In the same way the NRF places expectations on fire safety engineers, fire safety experts, who assess fire safety engineers' work, should be similarly competent in order to make judgements on the work.

The Warren Centre, in examining the roles of stakeholders in the fire engineering space, noted that fire safety engineers working on behalf of fire authorities should have the same “general fire safety engineering competency level” as the fire safety engineers working on building design and independently reviewing the building design⁷. “They are also expected to have specialist skills and knowledge related to the fire brigade operational roles and procedures.”

The guidance could set out the skills needed by fire safety experts, such as understanding the NCC, and the ways in which they should maintain their skills, such as undertaking CPD. It could also consider how registered and qualified fire safety engineers could oversee unregistered fire safety experts, similar to arrangements in building surveying firms. Consistent expectations could give fire safety engineers, who provide building designs for review by the fire authorities, the confidence that the assessments of their work are determined through appropriate knowledge and expertise.

Guidance available to industry

The model guidance may recommend the types of information and guidance that fire authorities should make available to industry. Some fire authorities already provide such guidance e.g. Fire Rescue Victoria⁸ and the Department of Fire and Emergency Services (WA)⁹. Advice from stakeholders however is that this advice is not available from all fire agencies or is difficult to find.

⁷ Warren Centre, 2020, available at: <https://www.sydney.edu.au/engineering/industry-and-community/the-warren-centre/fire-safety-engineering.html>.

⁸ Available at: <https://www.frv.vic.gov.au/fire-safety-guidelines>.

⁹ Available at: <https://www.dfes.wa.gov.au/regulationandcompliance/buildingplanassessment/pages/publications.aspx>.

Questions about model guidance

4. Are there benefits to a nationally consistent role for fire authorities?
 - a. If so, what are they?
 - b. What has the impact of lack of national consistency been on you and your work, if any?
5. How would you suggest improving the following proposed definition of the fire authority role?

“During the building design process, the role of fire authorities could be defined as to provide advice on the development of Performance Solutions impacting the intervention of fire authorities at a building.”

6. Do you believe the triggers for the involvement of fire authorities should be consistent across jurisdictions?
 - a. Why?
 - b. Do you consider any of the jurisdictional models to be exemplary? If so, which jurisdiction?
7. What are the benefits of NCC clause-related triggers?
8. What are the drawbacks of NCC clause-related triggers?
 - a. If you agree with NCC clause-related triggers, do you agree with the list below, which was provided by AFAC? Please provide your reasoning where you disagree.

Table 1 NCC clause-related triggers suggested by AFAC

NCC clause	Agree	Unsure	Disagree
CP1 Structural stability during a fire			
CP2 Spread of fire			
CP3 Spread of fire and smoke in health and residential care buildings			
CP4 Safe conditions for evacuation			
CP5 Behaviour of concrete external walls in a fire			

NCC clause	Agree	Unsure	Disagree
CP6 Fire protection of service equipment			
CP7 Fire protection of emergency equipment			
CP8 Fire protection of openings and penetrations			
CP9 Fire brigade access:			
DP4 Exits			
DP5 Fire-isolated exits			
DP6 Paths of travel to exits			
DP7 Evacuation lifts			
EP1.3 Fire hydrants			
EP1.4 Automatic fire suppression systems			
EP1.5 Fire-fighting services in buildings under construction			
EP1.6 Fire control centres			
EP2.1 Automatic warning for sleeping occupants			
EP2.2 Safe evacuation routes			
EP3.1 Stretcher facilities			
EP3.2 Emergency lifts			
EP4.1 Visibility in an emergency			
EP4.3 Emergency warning and intercom systems			
P2.7.5 Buildings in bushfire prone areas			
P2.7.6 Private bushfire shelters			
GP5.1 Bushfire resistance			

9. Do you believe any NCC clauses related to fire safety Performance Requirements are overlooked in the above list? If so, what are they?
10. An alternative to an NCC clause-related trigger model is a risk-based model. What are the benefits of a risk-based model?
11. What are the drawbacks of a risk-based model?

- a. If you agree with a risk-based model, do you agree with using the definition of building complexity at **Appendix F**?
 - b. If you do not agree with the definition of building complexity, what would you suggest a risk-based model should consider?
12. Do you agree there is a need for fire authorities to provide guidance at the conceptual stage of building design?
 - a. Why?
 - b. If you agree with fire authorities providing guidance at the conceptual stage of building design, should this requirement be set out in legislation, occur at the request of the building designers or through another trigger?
 - c. Why?
13. Do you believe fire authorities should be advice authorities or consent authorities?
 - a. Why?
14. Do you agree that fire safety experts who assess applications on behalf of fire authorities should be similarly educated, competent and experienced as fire safety engineers?
 - a. Why?
15. Should fire authorities provide advice on their websites on any additional matters to help building designers meet the needs of fire authorities?
 - a. If yes, what should the advice cover as a minimum?
 - b. Do you consider any of the jurisdictional models to be exemplary? If so, which jurisdiction?
16. Please provide any other comments you have about the involvement of fire authorities in building design processes and the issues covered in the discussion paper.

APPENDICES



Appendix A BCR Recommendations impacting development and documentation of fire safety Performance Solutions

Table 2 BCR recommendations with systematic impacts

Recommendation (paraphrased)	Status	If implemented, the impacts of the recommendation
1. Jurisdictions should require the registration of certain building practitioners including fire safety practitioners.	Recommendations 1 and 2 are addressed through the National Registration Framework (NRF), which was publicly consulted on in 2020 and refined through a working group of the Australian Building Codes Board. Building Ministers will consider the NRF in April 2021.	The NRF provides guidance to states and territories on appropriate registration categories for building practitioners. It sets out the education and experience required for each level of registration, and the functions each level of registration should be allowed to perform. If implemented, it will ensure that even if automatic mutual recognition work progresses, that there is a national minimum standard for registered practitioners that should ensure better quality of work based on suitable education requirements and function-based registration.
2. Jurisdictions should prescribe consistent requirements for the registration of building practitioners, such as: training on the NCC; competency and experience requirements; compulsory insurance; and evidence of practitioner integrity.		
3. Jurisdictions should require all practitioners to undertake compulsory continuing Professional Development on the NCC.	The ABCB is developing Continuing Professional Development (CPD) training modules on the NCC. Separately, the Team is developing guidance on the requirements of CPD on the NCC (e.g. how much CPD on the NCC is necessary and	CPD is key to practitioners maintaining their skills after they have completed formal education and entered the industry. Undertaking CPD on the NCC will likely increase practitioner understanding of the NCC's requirements which will assist increased compliance. While the ABCB is the only producer of CPD specifically on the NCC at the moment, this is expected to change and, given the importance of fire engineering, it is

Recommendation (paraphrased)	Status	If implemented, the impacts of the recommendation
	<p>how often) and guidance on how schemes for CPD on the NCC should be structured. Public consultation is planned for June 2021.</p>	<p>likely industry will produce CPD on the NCC for fire engineers specifically.</p>
<p>6. Regulators should have the powers to take strong compliance and enforcement action, if necessary</p>	<p>The Team developed a list of the minimum powers needed to effectively regulate the building industry and provided these to Building Ministers in November 2020.</p>	<p>There are gaps in jurisdictional powers needed to effectively regulate the building industry, however, if these are addressed, the Team expects that regulators should have the capacity to properly inspect building design and building work to ensure it is compliant with state and territory legislation, the NCC and referenced Standards. These powers will support effective auditing.</p>
<p>7. Jurisdictions should audit Class 2 – 9 buildings and publish their audit strategy and audit outcomes.</p>	<p>The Team is responding to the requirement for jurisdictions to publish audit information and outcomes. States and territories are responsible for publishing auditing strategies. The Team’s response is an Auditing and Compliance Publication Framework, a principles-based document that sets out how and when regulators should share information about auditing.</p>	<p>Auditing is a key quality control process and signals to industry the standards that will be accepted by the regulator. Increased transparency of auditing activities is essential to provide industry the confidence that regulators are checking that work is compliant and will take action in response to non-compliance, if necessary. It is likely that, if implemented, this recommendation will help to uplift the industry through better information for practitioners about auditing, its importance and the consequences of NCC non-compliance. It is also expected that the data collected through increased and more structured auditing programmes will help regulators work with industry to target interventions for common types of non-compliance. This could include increased education and training or case studies.</p>
<p>12. Jurisdictions should collect and share building data across jurisdictions.</p>	<p>The Commonwealth is supporting the Team to deliver a data sharing agreement between the states and territories.</p>	<p>Jurisdictions recognise the importance of collecting data centrally within each state and territory, as it provides them better capability to analyse and identify building trends and to target auditing and compliance activities and interventions such as education and training. If jurisdictions are able to better share information with each other, it’s</p>

Recommendation (paraphrased)	Status	If implemented, the impacts of the recommendation
13. Jurisdictions should require building approval documentation to be prepared by appropriately registered practitioners, demonstrating the proposed building complies with the NCC.	The Team publicly consulted on a discussion paper covering recommendations 13 – 16 from 16 November 2020 to 28 February 2021. Guidance is being developed based on responses to the discussion paper and will be provided to the Australian Building Codes Board in June 2021.	likely systemic non-compliance and issues associated with practitioners working across borders will be picked up and addressed more quickly. The guidance will cover the documentation that must be prepared and who takes responsibility for preparing it. More stringent requirements should mean that the documentation is of a higher quality because it is comprehensive and has been prepared by someone with appropriate knowledge and skill, making potential problems more evident.
14. Jurisdictions should set out the information to be included in Performance Solutions.	As above.	It is not uncommon for Performance Solutions to be backward-engineered once it is discovered that completed building work does not comply with the NCC's DTS provisions. The BCR recognises that there must be a pathway for practitioners to rectify building work that is not DTS compliant. Having a clear path should ensure that, in these situations, the outcome is a building that still meets the Performance Requirements of the NCC and therefore the minimum safety expectations for occupation and use.
15. Jurisdictions should provide transparent and robust processes for the approval of Performance Solutions for constructed building work.	As above.	It is not uncommon for Performance Solutions to be backward-engineered once it is discovered that completed building work does not comply with the NCC's DTS provisions. The BCR recognises that there must be a pathway for practitioners to rectify building work that is not DTS compliant. Having a clear path should ensure that, in these situations, the outcome is a building that still meets the Performance Requirements of the NCC and therefore the minimum safety expectations for occupation and use.

Recommendation (paraphrased)	Status	If implemented, the impacts of the recommendation
17. Jurisdictions should require independent third party review for components of designs and/or types of buildings.	The Team publicly consulted on a discussion paper from 7 December 2020 to 28 February 2021. Guidance is being developed based on responses to the discussion paper and will be provided to the Australian Building Codes Board in June 2021.	Most jurisdictions do not require independent third party review of design components ¹⁰ . Building surveyors who do not have the necessary competency to review the design in detail may accept self-certification from the practitioner who has developed the design. Even when third party review occurs, the reviewer may not be independent, which limits their ability to act impartially and to address identified issues. If implemented, this recommendation will add robustness to design processes, making it more likely that design weaknesses will be identified and rectified prior to the building's construction. In jurisdictions where fire authorities have a role reviewing fire engineering designs, it will likely mean the documentation they receive is more robust and of better quality as it has already been independently reviewed and issues addressed. This should aid fire authorities to review designs more efficiently and they should be more confident that the design meets the Performance Requirements of the NCC.
18. Jurisdictions should require on-site inspections of building work at identified notification stages.	The Team publicly consulted on a discussion paper from 7 December 2020 to 28 February 2021. Guidance is being developed based on responses to the discussion paper and will be provided to the Australian Building Codes Board in June 2021.	If implemented, there will be more risk-based inspections of buildings as they are constructed. The inspection points will also be more consistent across jurisdictions, meaning practitioners should have a clear understanding of when they will occur and what to expect. Increased inspections will mean more opportunities to check structural and safety aspects of buildings, meaning it is less likely that these issues will be identified during pre-occupation inspections, when it is more difficult to rectify identified issues.

¹⁰ The Northern Territory is consulting on reforms to building processes to improve confidence in the local building industry. It consulted on compulsory third party review in March 2021. Based on feedback, legislative amendments will be considered. The consultation paper is available at: <https://dipl.nt.gov.au/projects/building-reform-consultation>.

Recommendation (paraphrased)	Status	If implemented, the impacts of the recommendation
19. Jurisdictions should require fire safety practitioners to design, install and certify the fire safety systems necessary in Class 2 – 9 buildings.	The Team is developing a discussion paper, noting that development of this recommendation overlaps with recommendations 1, 2, 8 and 13 – 18.	If implemented, this would mean multiple inspections during the installation process so that the building surveyor can have confidence in the certification provided once installation is complete. The independence of the tester from the installer provides a level of assurance that any issues with the design and installation will be picked up and can be rectified.
20. Jurisdictions should require building manuals to be provided to building owners.	The Team is publicly consulting on a discussion paper from 9 March to 17 May 2021.	If building manuals are implemented, transparency and accountability of building practitioners is likely to increase as practitioners will be required to provide documentation and information to building owners and prospective purchasers. Making this information available should give potential purchasers the ability to determine more accurately their willingness to invest in property and at what price, leading to an incentive for developers and builders to ensure that the manuals are accurate and contain the required information.

Appendix B Issues

The Team has consulted with fire authorities, fire safety engineers, building surveyors, governments and the BCR Expert Panel on BCR recommendation 8.

Stakeholders identified the below issues related to the involvement of fire authorities in building design. Some will be mitigated by the implementation of other BCR recommendations, and some can be mitigated through a Code of Conduct for Fire Safety Engineers.

Underlying many of them is a lack of trust between fire safety engineers and fire authorities, and a lack of understanding of the other's role even though both professions aim to achieve safe buildings.

The issues around the quality of the development and documentation of fire safety Performance Solutions are:

1. **Inconsistent performance.** Not all fire safety engineers deliver work on Performance Solutions to a standard that meets the expectations of fire authorities. Some stakeholders believe this could be due to inconsistent education and training or fire safety engineers not keeping their skills up-to-date. Other stakeholders believe it is due to insufficient project budgets, resulting in the lowest tenderer undertaking the task and not properly applying fire safety engineering principles. Rushed timeframes may also contribute to poor standards of work.
 - (a) Fire authorities have advised that if they do not provide guidance on the level of justification required for a particular design, less information tends to be provided.
2. **Lack of responsibility for completed work.** Not all fire safety engineers sign off on completed work on a Performance Solution that relates to fire safety engineering. This means they do not take responsibility for the completed work and the building surveyor is tasked with determining whether the completed work aligns with the fire safety engineering design brief. The building surveyor often does not have fire engineering qualifications or training, however has the task of taking a holistic view of the project.

3. **Lack of awareness of fire authority needs.** While it is expected that a building with no Performance Solutions (i.e. uses NCC Deemed-to-Satisfy pathways) should present less issues for fire authorities than a building with Performance Solutions, fire authorities sometimes have issues with these buildings at the point of occupation inspections. Issues are likely to be related to placement of equipment or compatibility of equipment with that of the fire service. This is due to a lack of understanding of the type and location of equipment needed by fire authorities when attending a fire and/or the safety needs of their personnel and could have been avoided by early involvement with the fire authorities.
4. **Lack of early involvement with fire authorities.** Fire safety engineers and building designers value early input from fire authorities, however not all fire authorities are willing to provide input at the concept stage or in an informal manner. Some fire authorities only want to engage once a formal application has been submitted. Fire safety engineers who prefer to have early input from fire authorities may pursue the input using informal means, which is of benefit to the projects they're working on because it increases certainty and minimises risk that the design will need alteration at a later point, which would increase costs. Fire safety engineers have also advised that fire authority involvement at an early stage may influence developers and building designers to address issues that otherwise may have been ignored if the fire safety engineer were the only person to raise them.
5. **Lack of awareness of different legislative triggers and the time referral processes will take.** Building surveyors and fire safety engineers working across jurisdictions may not be aware of the different legislative triggers and therefore may not correctly refer projects and/or budget adequate time, creating project delays and additional costs. This may also impact fire authorities.
6. **The documentation provided to fire authorities may not be of good quality.** Fire safety engineers may not provide good quality documentation to fire authorities, impacting their ability to efficiently and effectively review building designs.
7. **The building surveyor or peer reviewer do not review Performance Solutions developed by fire safety engineers.** This potentially contributes to substandard documentation and outcomes for the fire authorities.

8. **Building surveyors may not refer eligible fire safety engineering designs for fire authority input.** This reduces the ability of the fire authority to act in the public interest by mitigating risk to the public.

The issues around the involvement of fire authorities in the building design process are:

9. **Fire authorities may inadvertently act as the first reviewer of fire safety Performance Solutions.** Because independent review of Performance Solutions is not currently required, some stakeholders believe that fire authorities may act as a “second set of eyes” or a first point of review of a fire safety engineering Performance Solution, rather than a peer or independent review already having taken place before an application is made for fire authority referral.
10. **Fire authorities may provide advice that fire safety engineers consider outside their legislative scope.** Some stakeholders believe fire authorities sometimes provide advice that is outside the legislative scope of their review and may be outside their expertise. While the Team is not aware of any test cases, this could potentially cause liability issues for fire authorities and building surveyors. Once a concern is raised and communicated to the building surveyor, the onus is on the building surveyor to address the issue or justify why action has not been taken. Where the fire authority and the project’s fire safety engineer do not agree on concerns, it may be up to the building surveyor to resolve this, although the building surveyor does not have the same level of expertise in fighting fires or fire safety engineering design. The building surveyor must be able to rely on advice and/or certification. It is understood that some building surveyors use the referral to the fire authority as a third party review and as a way to reduce their own liability.
 - (a) Fire authorities have advised they have adequate knowledge and experience to advise on fire safety engineering. Many fire safety experts reviewing building designs for fire authorities have fire safety engineering qualifications or are overseen by a fire safety engineer. Fire authorities have also advised they have a duty of care to highlight issues with documentation provided and it may create a liability not to.

11. **Inconsistent documentation requirements.** Some stakeholders believe that the documentation requirements by fire authorities are inconsistent, with some fire authorities prepared to discuss issues over the phone and others requiring formal submission of detailed reports. While stakeholders are happy to provide reports to fire authorities, it is important for them to have clarity about expectations so they can plan to meet these needs and provide documentation to a high standard, which will, in turn, assist fire authorities to process applications more efficiently.
12. **Advice from fire authorities may not be timely.** In some jurisdictions, fire authorities have up to 28 days to provide advice on building design. The Team understands that in the past, some fire authorities have not been able to provide advice during this time and have provided it after an approval has already been issued. While this situation is provided for under legislation and the building surveyor is not obligated to act in response to late advice, it may create liability issues for the building surveyor and result in poorer safety outcomes than if the fire authority had been able to provide advice during the legislated timeframe.
13. **Fire authorities may not be resourced to review a broad scope of work.** Stakeholders have advised that the volume of work fire authorities are expected to review has increased over time. While some fire authorities can review every application, others need to prioritise and may only review the highest-risk building designs. This means some building designs are potentially not reviewed because, at face value, they do not appear high-risk. Some fire authorities would like to broaden their involvement in the design of buildings, potentially due to continued lack of confidence in the compliance of fire safety requirements, but other fire authorities are concerned that resourcing will not increase to match increased responsibilities, potentially creating liability for fire authorities.
 - (a) Some stakeholders believe fire authorities should be resourced to provide a minimum level of service i.e. work on recommendation 8 could indicate the minimum level of service that fire authorities should provide and, in jurisdictions where resourcing is not adequate to meet this level of service, it should be increased.

Appendix C Overview of principles-based Codes of Conduct

The table below provides an overview of Codes of Conduct or similar documents for engineers and some principles-based Codes of Conduct that have been recently developed for building surveyors. In some cases the table contains a summary of the principles, it does not necessarily replicate the precise wording of the principle.

Table 3 Overview of principles-based Codes of Conduct

	Engineers		Building surveyors / certifiers		
	Code of Ethics, Guidelines (EA, 2019)	Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)
Engineers Australia Code of Ethics and Guidelines on Professional Conduct (November 2019)	Code of Practice for Fire Safety Design, Certification & Peer Review in accordance with the BCA (SFS, June 2003)	Code of Conduct for Building Surveyors 2020 (ABCB, for jurisdictions to adopt)	VBA Code of Conduct for Building Surveyors (Vic) (in force 1 July 2021)	Code of Conduct for registered certifiers (NSW)	
Applies to members of Engineers Australia	Not current – in 2011 was converted to ‘role of registered practitioner’ document which is far more high level and is not based on defined principles/ practice notes.	Applies only to building surveyors performing statutory functions. 16 obligations, within 4 areas	Part of legislative framework. Applies to building surveyors when providing building surveying services (not limited	Part of legislative framework (sits in the Regulations). Distinct from the Practice Standard	

		Engineers	Building surveyors / certifiers			
		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)	
Code of Ethics, Guidelines (EA, 2019)						
	Separate code of ethics and then guidelines, with some repetition between them. 4 obligations, very limited further detail	14 Practice Notes. Quite detailed.			to performance of statutory functions) 8 core principles, with specific obligations under each	for Registered Certifiers (September 2020) – quite lengthy, not based on core principles in the same way as the CoC.
		Practice Note	Areas	Obligations	Principles	Obligations
1.	Demonstrate integrity	Practice Note 1: Practitioners should ensure that the scope and objectives for any fire safety assessment are clearly documented and reports clearly state any assumptions and limitations of the assessment and limitations or restrictions that may apply to the use or ongoing occupation of the building.	Comply with the law and act in the public interest	Comply with laws relevant to their work, conduct and organisation	Act in accordance with the law and in the public interest	Act in public interest
2.	Practise competently	Practice Note 2: Considering arson scenarios, potentially also terrorism incidents.		Act in the public interest	Act with integrity, honesty, objectivity and impartiality	Abide by standards expected by the community

		Engineers	Building surveyors / certifiers			
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)	
3.	Exercise leadership	Practice Note 3: People with Disabilities shall be considered when determining compliance with the Building Code of Australia for fire safety provisions in buildings, particularly with respect to egress and management procedures during evacuation.		Must not perform a statutory function in relation to a building they have assisted to design or develop a performance solution for	Perform competently and within the required level of expertise and experience	Act within level of competence, expertise and area of registration
4.	Promote sustainability	Practice Note 4: The Authority Having Jurisdiction (AHJ) shall not undertake any design role in a building for which they act as AHJ. Where a practitioner acting as the AHJ is either an employee or director of a company, other employees or directors of the same or related companies should not be involved in the design of the building to avoid a conflict of interest.		Notify relevant government authority where they have become aware of or hold a reasonable suspicion or unlawful activity or immediate or imminent risk to health and safety where engaged		Maintain satisfactory level of competence

		Engineers	Building surveyors / certifiers			
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)	
5.		Practice Note 5: Understand role and responsibilities, act within legislation. Where there could be a conflict between the Engineers Australia Code of Ethics, this Code of Practice, the BCA and/or legislation, the document providing for the greater safety to the public should be followed.	Professionalism	Act within their registration and professional competency	Avoid conflicts of interest	Avoid conflicts of interest
6.		Practice Note 6: Practitioners should exercise extreme caution in the use of expert judgement as the sole means of demonstrating compliance with the BCA 96. When expert judgement has to be used the documentation must justify the basis on which a person has been defined as an expert, the extent of their expertise, and a rational argument on which they have based their expert judgement with sufficient information to allow another practitioner to determine bounding conditions or limitations		Maintain professional competency	Document and maintain records	Requirement not to misinform or mislead

		Engineers	Building surveyors / certifiers			
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)	
		and any appropriate verification, commissioning and maintenance requirements.				
7.		Practice Note 7 Engineering and professional judgement, while always necessary to some extent, should only be relied upon to the extent that analysis cannot deal effectively with a problem.		Take reasonable steps to ensure quality of the work by obtaining and assessing all relevant information	Communicate promptly and effectively	Obtain and consider all facts
8.		Practice Note 8: Generally the competency of practitioners and level of supporting documentation should increase as the level of expert, engineering or professional judgement and complexity of analysis increases.		Work cooperatively with other building practitioners and regulators	Provide a complaint handling process and address issues of non-compliance	Document reasons for decisions
9.		Practice Note 9: If performance-based fire safety approaches are adopted to demonstrate compliance of an alternative solution, documentary evidence of compliance shall be prepared or reviewed by an NPER Fire Safety Engineer or equivalent and submitted to the AHJ to	Honesty and integrity	Must not engage, by act or omission, in misleading or deceptive conduct		Maintain confidentiality

		Engineers	Building surveyors / certifiers		
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)
		determine compliance with the BCA. For complex designs an independent peer review by an NPER Fire Safety Engineer or equivalent should be commissioned by the AHJ if they do not have sufficient expertise to judge compliance.			
10.		Practice Note 10: appropriate procedure for design and approval of performance solutions.		Take all reasonable steps to avoid actual or potential conflicts of interest and not perform a statutory function where a reasonable person would conclude there is a real risk their decision could be influenced by conflict of interest	Supervision (ensure that person must not carry out work under supervision of registered certifier unless registration authorises the supervision and work is carried out competently)
11.		Practice Note 11: confidentiality AHJ's and peer reviewers should not use information provided for review for any purposes other		Must not use statutory function role for the purpose of obtaining any preferential treatment or improper advantage	

		Engineers	Building surveyors / certifiers		
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)
		than for checking compliance of a design for the specific building under consideration and lodgement with prescribed bodies. All practitioners should treat all fire safety engineering reports, peer review reports, test data research reports and similar supporting documents as confidential, unless permission is granted for broader distribution or use.			
12.		Practice Note 12: The designer shall determine methods of analyses, input data and acceptance criteria are appropriate for the application being considered and clearly state this in the Fire Safety Engineering Report. The AHJ should independently review the documentation and determine that they are in agreement with the proposed methods of analysis, input data and acceptance criteria or clearly		Must not disclose confidential information obtained except where the relevant person has granted consent or there is a legal or professional duty to disclose it	

		Engineers	Building surveyors / certifiers			
Code of Ethics, Guidelines (EA, 2019)		Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)	
		identify areas where they consider a proposal to be deficient.				
13.		Practice Note 13: Evidence of compliance for alternative solutions shall be fully documented with all relevant supporting data. With respect to fire safety this will normally be in the form of a Fire Safety Engineering Report and supporting data.		Must notify regulators in each jurisdiction where they are registered of specified findings or breaches against them		
14.		Practice Note 14. If the AHJ does not have the expertise or resources to make a thorough and competent review in a reasonable timeframe, a third party or other resource may be commissioned to undertake a peer review.	Transparency and accountability	Must ensure that any contract is consistent with the Code and requirements set by the regulator		
15.				Must provide reasons for decisions on statutory functions		

	Engineers		Building surveyors / certifiers		
	Code of Ethics, Guidelines (EA, 2019)	Code of Practice (SFS, 2003)	Code of Conduct for Building Surveyors	Code of Conduct for surveyors (Victoria)	Code of Conduct for certifiers (NSW)
16.			Must have a system in place for managing enquiries or complaints		

Appendix D Jurisdictional triggers

Table 4 Jurisdictional triggers for involvement of fire authorities

Jurisdiction	Legislation
ACT	Building (General) Regulation 2008: Schedule 2 Part 2.2 items 6 and 7.
New South Wales	<p>Environmental Planning and Assessment Regulation 2000: Sections 144, 144A, 152, 152A, 152B, 153, 188.</p> <p>Under section 272, the use of the document 'Planning for Bush Fire Protection' is prescribed. That document states that building on bush fire prone land and using Performance Solutions requires the use of the Bush Fire Design Brief process. This requires agreement on the key elements and acceptance criteria from all stakeholders including the NSW Rural Fire Service.</p>
Northern Territory	Building Regulations 1993: Schedule 2.
Queensland	Planning Act 2016: Under section 54, QFES is a referral agency and under the Planning Regulation 2017, matters at Schedule 9 division 3 table 1 are in scope.
South Australia	<p>Planning, Development and Infrastructure (General) Regulations 2017: Section 45.</p> <p>Planning, Development and Infrastructure (General) Regulations 2017: Section 103.</p>
Tasmania	<p>Building Act 2016: section 98(1)(g) triggers Building Regulations 2016: Section 26A.</p> <p>Building Act 2016: section 131(1) triggers Building Regulations 2016: Section 27(1).</p>

Jurisdiction	Legislation
Victoria	<p>Building Regulations 2018: Under section 30 and 31, prescribed matters at Schedule 5 Part 1 to be referred to the chief officer. Sections 129 and 187 (report and consents) are the regulatory triggers for referral to the fire authority (both Fire Rescue Victoria and the Country Fire Authority).</p> <p>Building Act 1993, such as a Section 227E, which triggers Essential Safety Measures inspections by the fire authority.</p>
WA	<p>Building Regulations 2012: Under section 18B, building surveyors must provide the FES commissioner building plans and specifications for certain buildings.</p>

In some jurisdictions, there are additional checks and balances, such as the ability for the fire authority to make orders, if necessary, to update fire safety systems in a building, or to issue infringement notices related to fire safety and maintenance. The effect of legislative triggers on the types of buildings that must be referred to fire authorities is shown below.

Table 5 Effect of jurisdictional triggers by building Class

State/ territory	Building Class												
	1	2	3	4	5	6	7	8	9	9a	9b	10	
Australian Capital Territory	Yes, conditional on use of PS	Yes, conditional on use of PS and floor area	Yes, conditional on use of PS and floor area	Yes, conditional on use of PS									
New South Wales	Yes, conditional on use of PS and floor area	Yes, conditional on use of PS, floor area and storeys	Yes, conditional on use of PS, floor area, storeys and ECC presence 11	Yes, conditional on use of PS, floor area, storeys and ECC presence 11	Yes, conditional on use of PS and floor area								
Northern Territory	N/A	Yes, conditional on storeys	Yes	Yes	N/A								
Queensland	N/A	Yes, conditional 12	Yes, conditional 12	N/A									

¹¹ ECC – Early Childhood Centre.

¹² If the building work is assessable development that involves (a) a fire safety system and requires: special fire services (schedule 19, part 1); or a Performance Solution to meet Building Code volume 1 requirements or the Queensland Development Code performance criteria part 2.2; or a Performance Solution to meet Building Code requirements or the performance criteria stated in the Queensland Development Code, part 2.3; or (b) a fire safety system for a budget accommodation building and requires: a solution assessed against the performance criteria in the Queensland Development Code,

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State/ territory	Building Class												
South Australia	Yes, conditional ¹³												
Tasmania	Yes, conditional on triggering NCC fire safety												
Victoria	Yes, conditional on not meeting DTS												
Western Australia	N/A	Yes, conditional on PS	Yes, conditional on PS	Yes, conditional on PS	Yes, conditional on PS and floor area	Yes, conditional on PS							

part 2.1 or the Building Code's performance requirements in volumes 1 and 2; and that includes a fire safety management plan as a condition of the use and occupation of the building; or (c) a residential care building under the Queensland Development Code, part 2.2..

¹³ If the relevant authority considers a PS requires assessment against an NCC performance requirement which relates to fire authority intervention or the proposed development is at variance with a performance requirement related to fire authority intervention or problems for fire fighting could arise related to conditions at NCC section E.

Appendix E Type of authority (consent or advice)

Table 6 Type of authority by jurisdiction

State/territory	Role of fire authorities (consent or advice)	Impact	When the authorities are required to have involvement
Australian Capital Territory	Under section 27 (1) of the Act, some building approval applications are to be referred to the Emergency Services Commissioner. Under section 20(3)(c) of the Regulations, the advice provided by the Emergency Services Commissioner must state whether the entity supports or opposes the application and under 20(3)(d) may apply conditions to support. Under section 30A of the Act, once a certifier has received advice, they must not issue a building approval if issuing the approval or carrying out the work in accordance with the approval would be inconsistent with the advice received. The exception to this is if the certifier is satisfied further information or amendments of the application address the advice of the entity or the entity has provided advice on an area they are not authorised to give advice on.	Consent. The Emergency Services Commissioner has influence to prevent consent.	Prior to building approval
New South Wales	Under section 144 of the Regulations, certain buildings must be referred to the NSW Fire Brigades. The Fire Commissioner may provide the certifier with an initial fire safety report for the building, which may recommend conditions be imposed. The certifier must not issue a construction certificate for a building that has been referred to the NSW Fire Brigades unless they have taken into	Advice. The certifier is able to consider but disagree with the advice given and is not required to implement it, provided they give	Prior to construction certificate

State/territory	Role of fire authorities (consent or advice)	Impact	When the authorities are required to have involvement
	<p>consideration the initial fire safety report. Under section 144 (6A), the exceptions to this are if the Fire Commissioner had notified the certifier that an initial fire safety report would not be provided, the Fire Commissioner failed to notify the certifier within 10 days after document receipt whether or not an initial fire safety report would be provided, or the Fire Commissioner gave notice that one would be provided but failed to provide a report within 28 days after document receipt date. The certifier is also able to not adopt recommendations of the initial fire safety report because they disagree with the recommendation.</p>	<p>written notice to the Fire Commissioner of this fact and the reasons why the advice is not adopted (refer section 144 (6B)).</p>	
<p>Northern Territory</p>	<p>Under Schedule 2 of the Regulations, the Northern Territory Fire and Rescue Service is a reporting authority. Under section 5 of the Act, a building certifier must not decide an application for a building permit or occupancy certification unless a required report or consent from a reporting authority has been obtained. Under section 8 of the Act, the building certifier must consider a report of a reporting authority before making a decision on the application to which the report relates, however the building certifier is not required to implement a recommendation of a reporting authority's report.</p>	<p>Advice. The certifier is not required to adopt the recommendations.</p>	<p>Prior to building permit or occupancy certification</p>
<p>Queensland</p>	<p>Under section 54 of the Act, the QFES is a referral agency. Under section 56 of the Act, the referral agency, after assessing the development application, must decide whether it has no requirements for the application, whether to direct the assessment manager to give approval subject to conditions, to give approval to only part of the application, to</p>	<p>Unclear. Under section 59 of the Act, the assessment manager is still required to follow the development</p>	<p>Prior to development application approval</p>

State/territory	Role of fire authorities (consent or advice)	Impact	When the authorities are required to have involvement
	give only preliminary approval, to impose a currency period for an approval or whether to direct the assessment manager to refuse the application.	assessment process even if a referral agency directs that they refuse the application, so while the referral authority has substantial input to development applications, their recommendations may not inform the decision on the development application.	
South Australia	Under section 45 of the Regulations, a relevant authority (this includes accredited professionals under section 82(g)) must have regard to any report received from a fire authority. If the relevant authority does not propose to impose the conditions of consent specified by the fire authority, or proposes to grant building consent despite the fire authority recommending against it or recommending conditions on consent, the relevant authority must refer the application to the State Planning Commission and must not grant consent unless the Commission concurs in the granting of the consent.	Unclear. The relevant authority is not required to implement the conditions specified by the fire authority, if the State Planning Commission concurs.	Prior to building consent
Tasmania	Under section 98(1)(g) of the Act and section 26A of the Regulations, a building surveyor must take into account a report from the Chief Officer. Under section 98(3), after	Advice. The building surveyor is not required to act in	Before notifiable building work approval

State/territory	Role of fire authorities (consent or advice)	Impact	When the authorities are required to have involvement
	taking into account the report, the building surveyor may issue a certificate of likely compliance (notifiable building work) if satisfied the work is likely to comply with the Act, amongst other conditions.	response to the report.	
Tasmania	Under section 131(1) of the Act and section 27(1) of the Regulations, a report from the Chief Officer is required. The report states the opinion of the Chief Officer in relation to whether work is satisfactory to meet the relevant performance requirements of the NCC. Under Section 131 of the Act, the building surveyor is not to grant an application for a certificate of likely compliance (permit building work) if a report is outstanding. Under section 132 of the Act, the building surveyor is to take into account the report.	Advice. The building surveyor is not required to act in response to the report.	Before building permit work approval
Tasmania	Under section 219 of the Act, a building surveyor is not to grant an application for an occupancy permit in respect of which a report is required under the Building Regulations from a reporting authority unless the report is supplied to the building surveyor.	N/A	Before occupancy permit
Victoria	Under section 30 and 31 of the Regulations, prescribed matters at Schedule 5 Part 1 to be referred to the chief officer. Under section 129, the report and consent of the chief officer must be obtained.	Consent.	Prior to building permit issue
Western Australia	Under section 18B of the Regulations, building surveyors must provide the FES Commissioner building plans and specifications for certain buildings for advice. Under section 15A of the Regulations, after receiving advice, the building surveyor must notify the FES Commissioner of any part of	Advice. The building surveyor is not required to adopt the advice.	Prior to building permit

State/territory	Role of fire authorities (consent or advice)	Impact	When the authorities are required to have involvement
	their advice that is not incorporated in the plans and specifications and the reasons for not incorporating that advice.		

Appendix F Definition of Building Complexity – as at November 2020

Building complexity criteria are used to determine whether all or part of a *building* is low, medium, high or very high building complexity. The *building complexity criteria* are:

1. Attributes – the building is designed or constructed with any of the following sub-criteria:
 - (a) an *effective height* of more than 25 metres;
 - (b) one or more *Performance Solutions* used to demonstrate compliance with *Performance Requirements* relating to material and systems for structural safety;
 - (c) one or more *Performance Solutions* used to demonstrate compliance with *Performance Requirements* relating to material and systems for fire safety;
 - (d) in an area prone to natural disaster or adverse environmental conditions;
2. Class 2 – all or part of the *building* is *Class 2* of three or more *storeys*;
3. Occupant numbers – the *building* is to be occupied by more than 100 people determined in accordance with D1.13 (NCC Volume One);
4. Occupant characteristics – the *building* is to be occupied by more than 10 people who will require assistance to evacuate the building in an emergency;
5. Building Importance Level 4 – the *building* is determined to be *Building Importance Level 4* under B1.2a (NCC Volume One).

Low building complexity is where a *building* meets one only of *building complexity criteria* A (Attributes), B (Class 2), C (Occupant numbers), or D (Occupant characteristics).

Medium building complexity is where a *building* meets two of *building complexity criteria* A (Attributes), B (Class 2), C (Occupant numbers), or D (Occupant characteristics).

High building complexity is where a *building* meets three of *building complexity criteria* A (Attributes), B (Class 2), C (Occupant numbers), or D (Occupant characteristics).

Very high building complexity is where a building meets:

1. all of *building complexity criteria* A (Attributes), B (Class 2), C (Occupant numbers), and D (Occupant characteristics); or
2. *building complexity criteria* E (Building Importance Level 4).

Building complexity decision process

Figure 1 Definition of building complexity

