Submission to the Productivity Commission
Research Study into the Reform of Building Regulation

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1. EXECUTIVE SUMMARY:

The Australasian Fire Authorities Council (AFAC) is the peak representative body for fire and emergency services and land management agencies in the Australasian region. Since its inception in 1993, AFAC has actively engaged with the Australian Building Codes Board (ABCB) to achieve regulatory reform through its participation on the Building Codes Committee and a range of other ABCB and Standards Australia technical committees and working parties. AFAC members remain as committed today as they were in 1993 to "the creation of nationally consistent building codes, standards, regulatory requirements and regulatory systems" [ABCB mission] and welcome the opportunity to contribute to the Productivity Commission's *Research Study into the Reform of Building Regulation*.

Central to AFAC's commitment to regulatory reform, is its support for the continuation of the Inter Government Agreement on building regulation reform and the role of the ABCB in the Australian regulatory landscape. AFAC members, however, believe that the current approach to building regulation is flawed and that it has unwittingly supported the emergence of a culture in which the safe evacuation of building occupants is regarded as the sole objective, leaving responding firefighters, the environment, building stock and in some cases, community safety, unnecessarily exposed.

In analysing the shortcomings of the current regulatory framework, several key factors have been identified as contributing to their cause. They include:

- conflict with statutory obligations of the fire services
- the need to further define "community expectations" and to ensure that the objectives of the regulatory framework are aligned to those of the community
- inconsistent integration of the fire service role into the building regulatory system
- lack of fire-related data to support evidence-based policy development
- lack of fire service representation on key decision making bodies.

The *AFAC Response to the Productivity Commission's Research Study into the Reform of Building Regulation*, articulates AFAC's position on these critical issues and in conclusion, makes the following recommendations:

1. That the mission of the ABCB and the objectives of the BCA are expanded as a matter of urgency to encompass:

    - property protection
    - environment protection
    - firefighter safety, and
    - community sustainability.

and as a corollary to that amendment, definitions for the following terms are incorporated into the regulatory process:

- environmental protection
- property protection
- sustainability (community and business)
- life safety
- firefighter safety
- security
- terrorism
- arson.

2. That a fundamental objective of the building regulations is to establish a requirement that buildings are constructed in a manner that will provide the fire services with an opportunity to contain a fire to the fire compartment of origin.

3. That the economic indicators that currently underpin the regulatory framework incorporate a further requirement, "*Total Cost of Fire"*, when considering economic impacts of regulatory change. Accordingly, the full range of direct and indirect socio-economic consequences of fire must be considered when assessing fire cost.

4. That the achievement of increased harmonisation between Federal and State regulatory building requirements and regulatory systems becomes a key focus for the ABCB, through the implementation of a national framework that incorporates a consistent role for the fire services in the building regulatory process throughout the construction and building-in-use cycle.

5. That a national repository of fire-related data is established for access by key stakeholders. The national repository would support the development of evidence-based changes to "deemed to satisfy" provisions and validation of performance solutions within the BCA.

6. Inclusion of AFAC as a key stakeholder in the PC research study and the increased involvement of AFAC in the entity charged with building regulatory responsibilities both now and in the future.

Appendix 1 to this document provides AFAC's response to the questions contained within the PC Issues Paper, which have particular relevance to the fire services.

An overview of AFAC's mission and objectives and a list of AFAC member agencies can be found at Appendix 2.

Appendix 3 of the document contains the Executive Summary of the study - *Key Performance Indicators for Computer Fire Models* - undertaken on behalf

of AFAC, the ABCB and the Fire Protection Association of Australia by the Worcester Polytechnic Institute in February 2004.

2. Introduction:

The achievement of building regulatory reform was one of the key drivers underpinning the establishment of the Australasian Fire Authorities Council (AFAC) in 1993. The challenges posed at that time by the impending shift to the performance-based Building Code of Australia (BCA), provided the catalyst for AFAC members to use their (then) new national voice to actively contribute to the building regulatory reform process at the Federal level. This period saw AFAC become increasingly involved on the Australian Building Codes Board (ABCB) Building Codes Committee and a number of ABCB and Standards Australia technical committees and working parties.

By adopting this pro-active stance, AFAC has contributed to the reform process, as well as influencing the direction of regulatory reforms. Despite these gains, AFAC members are aware that the ongoing pressure to cut costs in the construction industry has led to an increasing reliance on the use of fire engineering solutions to meet the performance requirements of the BCA. This trend, coupled with a growing awareness of the limitations imposed by the scope of the BCA, now poses a range of serious concerns for AFAC members.

This paper will examine AFAC's specific concerns in closer detail and will recommend strategies to deal with them. AFAC's response to a number of issues of particular relevance to the fire services, raised within the *Reform of Building Regulation PC Issues Paper*, can be found at Appendix 1.

3 Key issues:

AFAC members consider that the key areas of concern relating to the current objectives and operation of the ABCB and BCA are:

- conflict with the statutory obligations of the fire services
- the need to further define "community expectations" and to ensure that the objectives of the regulatory framework are aligned to those of the community
- inconsistent integration of the fire service role into the building regulatory system
- lack of fire-related data to support evidence-based policy development
- lack of fire service representation on key decision making bodies.

Although there is a strong inter-relationship between these issues, for ease of communication each will be dealt with on an individual basis as follows:

3.1 Conflict with the statutory obligations of the fire services

AFAC members recognise that there is a fundamental difference in the objectives of the ABCB (as embodied in the BCA), and the fire services, in relation to the construction[1] and post-construction[2] use of buildings. Both groups are concerned about life safety with respect to building fires. The difference relates to the matter of the protection of property and the environment. The fire services have an obligation under their enabling legislation to protect buildings and their contents from fire, and in the case of some services, this responsibility extends to protection of the environment from the effects of fire. In contrast, the current national building regulatory framework does not have these objectives, but rather, has an obligation to minimise the cost of buildings construction while ensuring the maintenance of adequate life safety provisions. AFAC members believe that this narrow focus has provided a situation in which developers and builders, through the increasing use of fire engineering solutions, seek to limit the application of fire safety and suppression provisions to those which support the safe evacuation of building occupants as a sole objective – ie. “the evacuate and let it burn” culture.

While the safety of building occupants is of paramount importance to building regulators and the fire services alike, this approach actively militates against the efforts of AFAC members to fulfil their statutory obligations. Indeed, AFAC believes that it has given rise to an environment in which the fire services are continually forced to defend building fire safety and suppression provisions. Furthermore, AFAC members hold grave concerns regarding the implications that the ongoing attempts to limit fire safety and fire suppression provisions will have for fire service operations and firefighter safety.

To overcome this current conflict in purpose, AFAC members strongly support the extension of the ABCB mission and BCA objectives to encompass elements such as property and environmental protection (see Recommendation 1).

In a further attempt to align ABCB and BCA objectives to those of the fire services, on issues involving the protection of life, property and the environment, AFAC members would welcome the introduction of regulatory provisions that would support the fire services in meeting their performance requirement of containing fire to the fire compartment of origin.

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[1] Construction in this context is assumed to mean conceptual design, planning, design, construction and regulatory approval.

[2] Post Construction in this context is assumed to mean fit-out and occupation of a building after the regulatory approval stage.

3.2 The need to further define "community expectations" and to ensure that the objectives of the regulatory framework are aligned to those of the community

While the mission of the ABCB is "to provide for efficiency and cost effectiveness in meeting community expectations for health, safety and amenity…" AFAC members believe that the current regulatory approach falls far short. While the evidence to support the following position is largely anecdotal at this stage, the strong relationships that AFAC members have with their local communities leave them in no doubt that community expectations go beyond the parameters currently articulated by the ABCB. Indeed, AFAC believes that the community expects that their properties will remain protected, that the negative impact on the environment from fire will be contained and that community and business disruption, whether a building is used as a hospital, school or a factory, will be kept to a minimum. Further, in the case of residential homes and where buildings house multiple occupants (eg. townhouses, flats, and apartment buildings), the community expects that the potential for fire spread from one occupancy to another will be prevented by the building's features.

AFAC members consider that the expansion of the ABCB mission and BCA objectives discussed previously will greatly assist in bringing the ABCB and BCA more in line with community expectations. AFAC members would also see great merit in the incorporation of the *Total Cost of Fire* concept in the economic indicators that currently underpin the regulatory framework. Using this more holistic approach (which has been the subject of a number of studies including those undertaken in the United Kingdom, Canada and Denmark), the full range of direct and indirect socio-economic consequences of fire must be considered when assessing fire cost. These consequences include:

- death and injury
- physical damage to buildings and contents
- consequent loss of production, loss of sales, goodwill and so on
- administrative costs associated with insurance
- provision of fire response
- risk prevention measures.

Recommendation 1:

That the mission of the ABCB and the objectives of the BCA are expanded as a matter of urgency to encompass:
- **property protection**
- **environment protection**
- **business and community sustainability, and**
- **firefighter safety.**

and as a corollary to that amendment, definitions for the following terms are incorporated into the regulatory process:
- **environmental protection**

- **property protection**
- **sustainability (community and business)**
- **life safety**
- **firefighter safety**
- **security**
- **terrorism**
- **arson.**

Recommendation 2:

That a fundamental objective of the building regulations is to establish a requirement that buildings are constructed in a manner that will provide the fire services with an opportunity to contain a fire to the fire compartment of origin.

Recommendation 3:

That the economic indicators that currently underpin the regulatory framework incorporate a further requirement "*Total Cost of Fire"*, when considering economic impacts of regulatory change. Accordingly, the full range of direct and indirect socio-economic consequences of fire must be considered when assessing fire cost.

3.3 Inconsistent integration of the fire service role into the building regulatory system

The anomalies that currently exist between the BCA and the application of state building codes and fire services acts and regulations, have created a situation in which the involvement of the fire services in the application of building regulations varies widely from state to state. In some states, for example, the fire services remain closely involved throughout the building approval, construction and certification process, while in others, the fire services are consulted only if a major deviation in the installation of fire suppression equipment is proposed.

The inconsistent integration of the fire service role in the building regulatory systems across the country seriously undermines the ability of AFAC members to meet their statutory obligations and can leave building stock and responding firefighters unnecessarily exposed. It is also worth noting that these inconsistencies have equally been the source of concern to building regulators when grappling with the issue of fire service involvement in the building approval process. The problem has been repeatedly identified by public forums held over the years without a solution ever being reached. Indeed, as far back as in 1991, the Building Regulation Review Task Force (BRRTF) made the following recommendation:

"That State, Territory and Federal Government initiate an independent review of the overall system for administering fire prevention and control in buildings to resolve:

- *The objectives of all parties, including building regulators and Fire Brigades in relation to fire safety in buildings;*
- *The role of Fire Brigades in the building approvals process;*
- *The way in which Fire Brigades are funded."*

To overcome this anomalous situation and the increased risk it poses to the community and firefighters alike, AFAC members propose the development of a national framework for application on a state jurisdictional basis. Where the BCA is largely limited to the construction phase of a building's life, this national framework (which may form part of the proposed National Administrative Framework), would regulate the involvement of the fire services throughout the construction and building-in-use cycle. An example of this approach could see developers and builders being required to consult with, and secure the endorsement of, the fire services in cases where a reduction in sprinklers and/or hydrants is proposed, or where firefighter safety during the search, rescue, extinguishment and overhaul phases is likely to be affected.

Recommendation 4:

That the achievement of increased harmonisation between Federal and State regulatory building requirements and regulatory systems becomes a key focus for the ABCB, through the implementation of a national framework incorporating a consistent role for the fire services in the building regulatory process throughout the construction and building-in-use cycle.

3.4 Lack of fire-related data to support evidence-based policy development

AFAC members acknowledge that the development and maintenance of an accurate and centrally located fire database continues to be a major challenge for the fire services. Indeed, Australia is one of the few developed countries in which a centrally located fire database, readily accessible to key stakeholders is not available. It is, however, pleasing to report that the fire services are working hard to overcome the jurisdictional constraints, inconsistencies in data collection methods and difficulties that have hampered such development in the past.

Notwithstanding the current efforts on the part of the fire services to improve fire-related data collection (particularly for performance measurement purposes), there remains a critical need to establish a national repository of fire-related data for the express purpose of supporting the development of evidence-based building regulatory reform. Such a repository should be managed by a Federal Government agency and made available to all key stakeholders. AFAC members confirm their commitment to support such an initiative through the provision of the necessary data. A similar repository is understood to be a subject of consideration in the yet to be released COAG Bushfire Inquiry report.

Recommendation 5:

That a national repository of fire-related data is established for access by key stakeholders. The national repository would support the development of evidence-based changes to "deemed to satisfy" provisions and validation of performance solutions within the BCA.

3.5 Lack of fire service representation on key decision making bodies

It is of deep concern that despite AFAC's continuous representation on ABCB sub-committees and working parties, together with the strong relationship that AFAC has forged with the ABCB, AFAC has been overlooked as a key stakeholder in the current Productivity Commission review. AFAC members believe that this omission sends a particularly negative message in terms of the value being placed on community safety in this process and urges the Productivity Commission to act urgently to remedy this situation.

Given the fire services' role in protecting life, property and the environment, AFAC further requests that the PC recommends that AFAC be given formal status as a Board Member of the ABCB, joining other national groups such as the Australian Local Government Association, the Royal Australian Institute of Architects and building design and property representatives.

Recommendation 6:

Inclusion of AFAC as a key stakeholder in the PC research study and the increased involvement of AFAC in the entity charged with building regulatory responsibilities both now and in the future.

4. Conclusion:

Much has been achieved by the ABCB in a short period of time and the management and staff of the ABCB are to be congratulated for their work to date. The journey, however, has only just begun and much is still required to be done.

In considering whether the recommendations proposed by the Australasian Fire Authorities Council in this paper should be acted upon, the Productivity Commission needs to consider the cost to the community, industry and the fire services, if they are not. This paper has described a regulatory environment that is characterised by its limitations, inconsistencies and a lack of insight into community values and the strategies through which they can be met. Perhaps of greatest concern, however, is the apparent lack of recognition of the serious implications that these shortcomings pose for the community and the fire services.

If these issues are not addressed the ongoing pressure from developers and builders to cut costs through an increasing reliance on the use of fire

engineering solutions will escalate the operational risks to the fire services. Coupled with the limitations and inconsistencies in the regulatory approach described previously, the fire services will ultimately be forced to confront situations in which their ability to respond effectively to fire emergencies must be balanced against the level of risk posed to firefighter safety. AFAC members do not believe that this is a scenario that would be acceptable to the community.

By supporting the recommendations proposed in this paper, the Productivity Commission will help to ensure that the ABCB and the BCA become more closely aligned to community expectations, thereby enabling the fire services to continue to effectively meet their statutory obligations to the Australian community.

APPENDIX 1

AFAC response to Productivity Commission (PC) Issues Paper

AFAC does not seek to respond to all of the questions featured in the PC Issues Paper, but will instead comment on those issues that are of particular relevance to AFAC members – that is, the fire and emergency services.

Have reviews of the regulation of the building and construction industry asked the right questions and identified the areas most in need of reform? Has adequate follow-up occurred to ensure accepted recommendations were adopted and assessed ex-post for their effectiveness?

The Laver Review provided a valuable starting point in the building regulatory review process. This productivity review will enable a more holistic review to be undertaken. AFAC looks forward to making comment on the first draft report and during the development of the final report.

Is the mission statement of the ABCB the appropriate one for the intergovernmental body responsible for reform of building regulation?

No, AFAC members believe the scope of the ABCB mission statement (and consequently the BCA objectives) to be too narrow and, on that basis, unable to address many issues that have a significant impact on the community in terms of amenity and cost - namely property protection, environmental protection, sustainability - including the maintenance of alternative solutions - and business continuity.

What are community expectations for health, safety and amenity in the design, construction and use of buildings? Has the ABCB been able to adequately determine what the community's expectations are, including preferred cost quality tradeoffs?

No, AFAC believes that the community expectations for health, safety and amenity in the design, construction and use of buildings go far beyond than the narrow focus applied by the ABCB. Indeed, the outcomes of legal court actions, the political process (at both Federal and state/territory levels) and direct community surveys support this contention.

Is the definition of amenity in the BCA adequate? Should the term refer to the basic needs of a building or to anything that impacts on the comfort, pleasure and aesthetic qualities of a building? Does it give sufficient attention to factors that impact on those not occupying the building? Alternatively, should the term be interpreted more narrowly to provide greater focus?

While the term "amenity" is highly subjective, AFAC members believe that in the context of the BCA the definition of amenity should be expanded to

acknowledge the requirement for occupants and firefighters to be provided with an appropriate level of protection from fire and other emergencies.

Why is national consistency considered to be the crucial means by which to meet community expectations for health, safety and amenity in a cost effective and efficient manner?

AFAC members consider that there is a need for a consistent regulatory approach that both encompasses the role of the fire services and is aligned to the design and development application processes. By providing this level of consistency, community members can be confident of the level of protection that is being afforded to them and the commitment of their statutory bodies to serving their needs in a responsive and responsible manner.

Is it feasible for all communities and individuals to use the national standard as their baseline with the option of altering the standards where this better meets community or individual preferred tradeoffs between price and quality? How difficult/desirable is it for individuals or communities to enforce a higher standard than in the Code?

This question is an interesting one – what is meant by national standard – Australian Standards, or the BCA, or is it any national standard?

Clarity does need to be provided on what compliance with the BCA means as many in the community believe that BCA compliance means a safe building – ie. safe from all emergency impacts. It could be argued, however, that all it means is "*you should be able to safely evacuate in the event of an accidental fire*". Once compliance is clarified, state/territory and local governments must be provided with guidance on how to better protect buildings beyond the aspect of life safety and evacuation e.g. what provisions should apply to those buildings that fall within the category of being of high social or service value to that community.

Why are some differences in regulation intractable?

AFAC queries the "differences", but acknowledges the need for state variations where necessary. The requirement for state variations should be incorporated into the body of the BCA, and the ABCB should be tasked with identifying areas where different requirements may apply e.g. energy efficiency requirements.

<u>The Ten Objectives of the IGA on Building Regulation Reform</u>

1. **Establish codes, standards and regulatory systems that are, as far as practicable:**
- **consistent between States and Territories…**

There are currently entrenched inconsistencies in the fire engineering process/certification within and between states (see later responses

also). These inconsistencies have and will continue to cause market imperfections if not regulated.

A fire engineering solution on most occasions is provided to meet non-compliance with the DTS provisions.

- **cost effective**
- **performance based; and**
- **based on modern and efficient building practices.**

AFAC is unaware of what current qualitative and quantitative assessments have been applied, or provided for, against this objective. In assessing performance against the objective, however, it should be noted that while the codes and standards may have been implemented, the regulatory system has not. Indeed, AFAC queries whether the establishment of the regulatory system should be an objective of the ABCB at all, or of some other Federal agency.

[It should be noted, however, that each state and territory are signatories to the implementation of these objectives and may not have fully complied with the provisions of the IGA.]

2. Base building requirements on minimum, least-cost solutions which address the regulatory objectives of safety, health and amenity.

To date, AFAC has not seen any evidence of available data (construction cost, fire statistics, maintenance records) which has been collected or analysed to underpin least-cost solutions. It is AFAC's experience that the concept of "least-cost solutions" is solely applied to the capital cost of construction, ignoring the often significant costs associated with maintaining and modifying essential safety systems to achieve the desired level of life safety throughout the post construction period of a buildings life cycle.

3. Investigate and promote opportunities for deregulation.

AFAC believes that it is equally important to monitor and investigate the performance of deregulated environments. The experience of states and territories providing privatised certification systems has identified circumstances where it appears that the private certifier is principally concerned with "their client's best interests". Unbeknown to the private certifier, their client is officially the community and not the person or organisation contracting their service.

4. Undertake and promote research which offers innovative and cost efficient solutions.

AFAC is aware of research work undertaken by the ABCB, some of which has been undertaken in conjunction with, or supported by, AFAC. AFAC believes that there is more scope to expand this research but not necessarily with the only objective of innovative and cost efficient solutions in mind.

5. Consult and liaise with industry to achieve transparency in the reform process.

AFAC believes that emphasis should be placed on obtaining a consensus view in achieving this objective.

6. Simplify the wording of building requirements to achieve user friendliness and plain language style.

AFAC does not believe that this objective has been met to date, but is of the view that such an initiative should be undertaken on a "consensus" rather than a "consultative" basis.

7. Coordinate and integrate reform activities with those of other agencies to ensure consistency of approach and to encourage consolidation into the BCA of all mandatory requirements affecting buildings.

AFAC is unaware of such co-ordination/integration taking place but strongly supports this objective.

8. Create an efficient regulatory environment to encourage an internationally competitive building industry.

AFAC offers no comment on this objective.

9. Matters ancillary to its objectives: consulting, training, action agenda, conferences and meetings.

Some activities have been undertaken in relation to this objective, but AFAC believes that more work needs to be done particularly in the area of training.

An illustration of the urgent need for appropriate specialised training has emerged through a recent study undertaken by the Worcester Polytechnic Institute (WPI) and sponsored by AFAC, in conjunction with the ABCB and the Fire Protection Association of Australia (FPAA). One of the key findings of the study was that almost half of all study respondents who used Computer Fire Models (CFMs) were not confident in whether their models were 'fit for purpose.' Many of those

using CFM's indicated that they had little or no specialised training. A large number of participants also answered that CFM's were not used because 'modelling software is too complex.' Again, this demonstrates the need for more specialised training in the field. See Appendix 3 for further information on the WPI study.

10. Undertake education and marketing activities to promote the work of the Board, to increase awareness of building regulatory reform and to increase use of Board publications and products.

The current approach to marketing needs to be extended. The 'right' objectives are an essential prerequisite for efficiency.

Should the IGA objectives of the ABCB be changed?

Yes, the IGA objectives need to be supported by additional documents that are based on building requirements. The objectives should go beyond safety, health and amenity to encompass property and environmental protection and sustainability - as required by various fire services, state and territory legislation. The term "safety" needs to be quantified.

Would it be more appropriate for the ABCB to focus on consolidating the changes that have already been put in train?

Yes, such consolidation should continue as a matter of priority.

Or are there problems which have neither been fully recognised nor addressed as yet?

The understanding of the term "safety" should be addressed to encompass security in a building. Property protection, environment protection, business and community sustainability and firefighter safety should all become objectives of the IGA. Terrorism, arson, building quality and durability also need to be built into the objectives.

The Commission welcomes input from interested parties on the meaning and application of effectiveness (section 2.1), productivity (section 2.2) and efficiency (section 2.3) in evaluating the performance of the ABCB and the reform that has taken place in the building sector since 1994.

Effectiveness simply equals "fitness for purpose" and AFAC believes that the fire safety "fit for purpose" needs have not been adequately addressed to ensure effectiveness.

Productivity and efficiency - the impact of fire service involvement in the construction and post construction process (conceptual design, planning, design, construction and regulatory approval, fit-out and occupation of a building after the regulatory approval stage) is seen by many as a potential increase in the building cost. AFAC contends, however, that if the proposed "Total Cost of Fire" concept is incorporated when considering economic

impacts of regulatory change and compliance issues - with the full range of direct and indirect socio-economic consequences of fire considered - true productivity and efficiency will be achieved.

An analysis may also be required to establish the correlation between the implementation of fire safety systems installed in buildings as an offset against insurance, rates and cost of fire services or individual contributions to fire services.

Are ABCB funding and charging arrangements appropriate?

AFAC members believe that the BCA should be made available on a free-of-charge basis. The ABCB should be funded to undertake research and should in turn fund the meetings of the various groups in which stakeholders (eg. AFAC) are asked to participate.

Is the ABCB structure and membership appropriate for achieving its objectives? Are there other institutional models that would improve the effectiveness of national reform?

No, AFAC strongly supports the inclusion of the fire and emergency services on the Board of the ABCB and also strongly recommends that the ABCB establishes a funding base to allow secondments to the ABCB from key stakeholders.

How important is the direct involvement of the Australian Government in achieving national reform to building regulation? Should the ABCB be more independent?

Australian Government involvement is critical to achieving national reform in the building regulatory process. The ABCB should move to a consensus approach, but should remain a collegiate of state regulatory bodies and federal agencies.

Do the processes by which standards are made, ensure that standards contained in the Code are well based?

Yes. AFAC strongly believes that links with the standards making processes must be maintained. More work, however, needs to be done to ensure that community expectations are recognised and achieved through the standards development process.

Would greater alignment with standards from other countries be desirable?

Yes, but not at the expense of Australia's unique requirements. It is important that local community expectations are met as cultural, geographical and technological influences have the potential to undermine these.

Are the level and type of consultations by the Board and its advisory committees appropriate and transparent (in order to fulfil the ABCB's objective 5)? Are there adequate mechanisms for interested parties not directly represented on the ABCB or its advisory committees to provide input into the development and reform of building regulations? Are there other consultation strategies that would facilitate greater transparency for stakeholders? Does the ABCB have the necessary representation to determine what meets community expectations for health, safety and amenity?

AFAC believes that the expansion of representation to include the fire services would assist the ABCB to more adequately determine community expectations for health, safety and amenity. AFAC is pleased with its representation on ABCB committees and working groups, however we strongly believe that an ABCB fund needs to be established to provide assistance for attendance at the various meetings. Some additional fire industry representation should also be considered.

What are the advantages and disadvantages of the majority voting rule used by the Board and its Committees versus the consensus based approach used by the Standards Australia technical committees?

AFAC believes that the ABCB would be better served by employing the consensus approach used by Standards Australia. This may lead to a lesser need for state/territory variations.

Do the different approaches across the jurisdictions in implementing changes to the BCA inappropriately erode achieving national consistency?

AFAC believes there should be a consistent approach across all jurisdictions in implementing changes to the BCA to ensure state uniformity and the efficacy of the process.

Is there a better approach?

Historically, the ABCB has often been tardy, not allowing sufficient time for stakeholders to adequately consider amendments to the BCA. Recent efforts – BCA 2004 - have not overcome these difficulties. More effort needs to be given to finalising amendments by a set date thereby providing adequate time for consideration. If this cannot be achieved, then reverting to two amendments per year, or a commitment to achieving other specified milestones, should be considered.

Is the regulation impact analysis system for changes to the BCA working effectively? In particular, has there been adequate cost benefit analysis of proposals and evaluation of alternatives when considering changes to the Code?

No, AFAC members strongly believe that the ABCB should introduce the *Total Cost of Fire* concept for use as an economic indicator to underpin the regulatory framework. Using this approach, the full range of direct and indirect socio-economic consequences of fire would be considered when assessing fire cost. These consequences include:

- death and injury
- physical damage to buildings and contents
- consequent loss of production, loss of sales, goodwill and so on
- administrative costs associated with insurance
- provision of fire response
- risk prevention measures.

Are 'minimum acceptable' standards and the pursuit of least cost solutions compatible with maximising net benefits to the community?

AFAC members support:

- incorporation of the "fire compartment of origin" principle as a minimum acceptable standard, and
- employment of the "Total Cost of Fire approach",

as solutions that are compatible with maximising net benefits to the community. The minimum design life of a building should also be considered as a component of minimum standard.

Is there a conflict of objectives between the BCA and the fire authorities' regulation in the States and Territories? If so, how could this be resolved?

Yes, AFAC recognises that there is a fundamental difference in the objectives of the ABCB (as embodied in the BCA), and the fire services in relation to their legislated obligations relating to construction and post-construction use of buildings. Both groups are concerned about life safety with respect to building fires. The difference relates to the matter of the protection of property and the environment. The fire services have an obligation under their enabling legislation to protect buildings and their contents from fire and in the case of some fire services, this responsibility extends to protection of the environment from the effects of fire.

In contrast, the current building regulatory framework does not have these objectives, but rather, has an obligation to minimise the cost of buildings construction while ensuring the maintenance of adequate life safety provisions. AFAC members believe that this narrow focus has provided a situation in which developers and builders, through the increasing use of fire engineering solutions, seek to limit the application of fire safety and suppression provisions to support the safe evacuation of building occupants as a sole objective – ie. "the let it burn" culture.

To overcome this conflict, AFAC urges that the mission of the ABCB and the objectives of the BCA are expanded as a matter of urgency to encompass:

- property protection
- environment protection
- business and community sustainability, and
- firefighter safety.

and as a corollary to that amendment, definitions for the following terms are incorporated into the regulatory process:

- environmental protection
- property protection
- sustainability
- life safety
- firefighter safety
- security
- terrorism
- arson.

In a further attempt to align ABCB and BCA objectives to those of the fire services on issues involving the protection of life, property and the environment, AFAC members would welcome the introduction of regulatory provisions that would support the fire services in containing a fire to the fire compartment of origin.

As well as energy efficiency, what other aspects of building design, construction and use could potentially be subject to sustainability considerations? What is the most useful definition of sustainability? Is there community consensus over what is a desirable level of sustainability for buildings?

Sustainability in this context aims to reduce negative health and environmental impacts from the building design and construction process. A sustainability objective would be to not allow:

- a building to burn, or
- a fire event to escalate in isolation,

thereby helping to overcome the subsequent social, economic and environmental impacts a fire phenomenon is likely to create. The specification of a minimum building design life would contribute to sustainable design considerations. AFAC strongly supports the concept of introducing "sustainability" into the BCA as an objective.

Does the existence of performance-based regulation tend to transfer the costs from the construction to the maintenance of buildings? Does it increase the need for maintenance provisions to be included in the Code?

It has been the experience of AFAC members that performance based building regulations, and the associated reliance on design solutions, have led to the increased use of mechanical building systems requiring regular and ongoing maintenance. These systems can have the effect of transferring the cost from the construction to the maintenance phase.

AFAC members support the inclusion of maintenance provisions in the BCA as a means through which nationally consistent approach to maintenance can be achieved. Life cycle maintenance costs of a building need to be included in the "Total Cost of Fire" so that viability of an alternative solution, in particular human interaction control measures can be adequately verified. Experience suggests that maintenance requirements are largely onerous and often not understood or adhered to by building owners.

Are there any other possible areas (that may not have been listed above (ie. plumbing, electricity, sustainability requirements, quality and durability and maintenance) that could be incorporated appropriately into the BCA.

Please refer to earlier responses relating to the inclusion of provisions for: property protection; environment protection; business and community sustainability – "Total Cost of Fire"; and firefighter safety, into the BCA.

What is the nature and extent of differences in the administration of building regulation across the States and Territories? What are costs of non-uniformity of the Building Code? And

Currently, the widespread anomalies that exist between the BCA and the application of state building codes are a source of considerable concern to the fire services. These inconsistencies have created a situation in which the involvement of the fire services in the application of building regulations varies widely from state to state. In some states, for example, the fire services remain closely involved throughout the building approval, construction and certification process, while in others, the fire services are consulted only if a major deviation in the installation of fire suppressions equipment is proposed.

In terms of the costs of this "non-uniformity", the fire services suggest that the current inconsistencies seriously undermine the ability of AFAC members to meet their statutory obligations and can leave building stock and responding firefighters unnecessarily exposed.

Why have not all States and Territories adopted the model building legislation? Is it appropriate to have a nationally consistent administrative framework? What would it take for regulatory systems to be consistent?

Yes, AFAC members believe that it is critical to establish a national framework incorporating a consistent role for the fire services in the building regulatory process throughout the construction and building-in-use cycle. To overcome the anomalous situation that currently exists throughout Australia, and the

increased risk it poses to the community and firefighters alike, AFAC members strongly support the enforcement of such a framework for application on a state jurisdictional basis (although the Model Building Act was developed in the early 1990's its adoption was not enforced in all states and territories). Where the BCA is largely limited to the construction phase of a building's life, the national framework could lead to a regulated involvement of the fire services throughout the construction and building-in-use cycle. An example of this approach could see developers and builders being required to consult with, and secure the endorsement of, the fire services in cases where a reduction in sprinklers and/or hydrants is proposed, or where firefighter safety during the search, rescue, extinguishment and overhaul phases is likely to be affected.

Would the establishment of a Building Appeals Board address existing weaknesses or would other mechanisms be more effective?

AFAC believes that such a board - if established as a single, national body - may resolve issues with regulatory compliance.

What have been the benefits and costs of private certification? What is the risk of conflicts of interest (such as when the builder or developer pays the certifier) or improper conduct of certifiers under current arrangements? What alternative arrangements might reduce this risk?

It is clear that the introduction of private certification has increased the flexibility of the building approval process and allowed for the more timely processing of building approvals. There is an inherent and obvious conflict and associated level of risk, however, in allowing a statutory function to be undertaken by an individual engaged by the builder/developer who is seeking the approval. For this reason, AFAC questions whether this approach is in the interest of the community.

AFAC members consider that a vigorous approach to auditing private certifiers and the establishment of an accessible and well-promoted complaints system may serve to reduce these risks.

Are certifiers adequately trained to perform their jobs? What has been the impact of the ABCB's competency standards and framework for building surveyors/certifiers?

No, AFAC does not believe that all certifiers are adequately trained to perform the tasks they are currently required to undertake. A recent study undertaken on behalf of AFAC, the ABCB and the Fire Protection Association of Australia, identified that certifiers may be well qualified in their primary field of practice, but as many of them have moved into the performance area, they lack many of the skills required to deal with fire engineering assessments e.g. use of Computer Fire Models. A copy of the Executive Summary of the study report can be found in Appendix 3.

What other issues need to be addressed by the Board with regard to certification?

AFAC believes that the ABCB Board needs to focus on addressing the following issues in relation to certification:

- training and education
- performance monitoring of accredited persons (see earlier comments on the establishment of an audit system for private certifiers)
- handling complaints in timely fashion.

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APPENDIX 2

AUSTRALASIAN FIRE AUTHORITIES COUNCIL – AN OVERVIEW

Background

The *Australian Fire Authorities Council* (AFAC), was established in 1993, to improve the collaboration and co-ordination of effort between those Australian agencies with a responsibility for the protection of life and property from fire and other emergencies.

The membership of agencies from the greater region saw AFAC's name change to the *Australasian Fire Authorities Council* in 1996.

Rationale for the establishment of AFAC

The imperative for the establishment of AFAC derived from the absence of a centralised, co-ordinating authority for Australian fire and emergency services. Since its inception AFAC's role has progressively expanded. Today, AFAC also provides a wide range of innovative services that have successfully reduced duplication of effort throughout the fire services and as a result, delivered significant cost savings to member agencies.

AFAC's membership

The current membership of AFAC stands at twenty-four full members and thirteen affiliate members. All Australian fire and emergency agencies are full members of AFAC, as is the New Zealand Fire Service. Among the affiliate members are the Hong Kong Fire Service, Singapore Civil Defence Force, the Papua New Guinea Fire Service, the East Timor Fire Service and the Fire, Health and Safety Directorate, Office of the Deputy Prime Minister, United Kingdom. AFAC members have also formed close partnerships with a number of Pacific Island nations.

AFAC's membership is drawn from agencies that have specialist skills in every conceivable operational setting and accordingly, comprises agencies operating in urban and rural and wildland environments. A full list of AFAC members can be found towards the end of this document.

AFAC's aims

AFAC aims to:

- promote community fire prevention and education
- enhance the operational performance and accountability of fire and emergency service agencies
- influence national fire policy, product and performance standards and fire management practices

- promote change within the fire industry in a planned and controlled way
- co-ordinate education and training policies and strategies to provide a learning environment for member employees
- obtain and share knowledge on issues affecting members, and facilitating discussion and debate on those issues
- facilitate research and development in areas of common interest, and
- effectively represent its members in Australasian and international forums.

To support these objectives AFAC provides a range of services, initiatives and programs to its members including those relating to:

- best practice policy development
- advocacy and representation
- learning and development
- human resource management
- data management
- research and development
- development of Australian and ISO Standards
- commercial activity.

Membership list

National

Emergency Management Australia
Airservices Australia

Australian Capital Territory
ACT Emergency Services Bureau

New South Wales
New South Wales Fire Brigades
New South Wales National Parks and Wildlife Service
New South Wales Rural Fire Service
State Forests of New South Wales

Northern Territory
Bushfire Council of Northern Territory
Northern Territory Fire & Rescue Service

Queensland
Department of Primary Industry – Forestry
Queensland Fire & Rescue Service
Queensland Parks & Wildlife Service

South Australia
Country Fire Service
Department for Heritage & Environment

South Australian Metropolitan Fire Service

Tasmania
Forestry Tasmania
Parks & Wildlife Tasmania
Tasmania Fire Service

Victoria
Country Fire Authority
Department of Sustainability & Environment
Metropolitan Fire & Emergency Services Board

Western Australia
Department of Conservation and Land Management
Fire & Emergency Services Authority

New Zealand
New Zealand Fire Service

Affiliates
Army Emergency Response
Australian Council of State Emergency Services
Brisbane City Council
Bureau of Meteorology
East Timor Fire Service
Hong Kong Fire Services
Papua New Guinea Fire Service
Singapore Civil Defence Force.
Republic of Mauritius Fire Service
Office of the Emergency Services Commissioner, Victoria
CSIRO – Forests and Forests Products
Department of Conservation, New Zealand
Fire, Health and Safety Directorate, Office of the Deputy Prime Minister, United Kingdom.

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APPENDIX 3

WORCESTER POLYTECHNIC INSTITUTE – COMPUTER FIRE MODELS PROJECT

Executive Summary

In June 2001, the Building Research Establishment (BRE) of Garston, England began a project titled, "Development of KPI's for Fire Safety Engineering." This three year study set out to establish Key Performance Indicators (KPIs) for the fire safety engineering design process including the use of computer simulation tools. BRE used a questionnaire to learn how Computer Fire Models (CFM's) were being used throughout the UK.

Professor Jonathan R. Barnett of Worcester Polytechnic Institute (WPI) proposed doing a study similar to BRE's in Australasia. The Australasian Fire Authorities Council (AFAC) based in Melbourne, Australia, expressed interest in supporting this study. A project team consisting of four undergraduate students from WPI completed this project from the AFAC office.

There were three goals of this project. First, results were to be obtained for a comparison with the BRE project. Second, the justification for the need of guidelines was to be developed. The final goal was the development of recommendations for practice guidelines regarding the use of CFM's in Australasia. While the title of the project is 'KPIs for Computer Fire Models in Australasia,' this wording is more historic than a true reflection of the work. It was determined that the term 'Practice Guideline' was more suitable than 'Key Performance Indicator.' The three sponsors of this project were the Fire Protection Association of Australia (FPAA), the Australian Building Codes Board (ABCB), and AFAC.

A literature review was completed at WPI, which included a study of social science techniques needed to complete the study. This literature review also included an in-depth study of the BRE project. Some challenges of the project included identifying differences between Australasian and British language terms. Research was conducted on the various fire safety associations, the role of designers and authorities having jurisdiction in the FSE field, interested parties in Australasia, and other related groups in order to better understand the project audience. The role of CFM's in Australasia was also examined.

Once in Melbourne, the background material was presented to sponsors and key players in the FSE field to spread awareness of the project that would be taking place. The questionnaire was completed, Australasian contacts were identified, and a distribution scheme was developed. The FPAA, the Society of Fire Safety (SFS), the Australian Institute of Building Surveyors (AIBS), and the New Zealand Fire Service (NZFS) all agreed to provide assistance with distribution of the survey through their organizations.

Once all surveys were distributed, electronically or via post, a Microsoft Access database was created to store and analyse survey results. This database was equipped with tools that proved extremely helpful to the project. A unique feature of the database is the possibility of future continuation. The database has a form that mimics the questionnaire for easy data entry, along with numerous reports for analysing information. Reports display all inputted data in a categorized format, along with specific queries that cross-tabulate different fields.

When survey responses were received, the data was immediately entered into the database. Approximately two weeks were allotted for surveys to be returned. As the deadline for completion of the survey approached an evaluation of fire practitioner responses was completed, which showed that there was an uneven response amongst roles. Many fire safety engineers had responded, but more participation from building surveyors and fire service members was needed. People in these fields were targeted via phone calls, more surveys were distributed, and as a result those responses increased.

The results were evaluated and compared to those of the BRE study. This comparison identified the differences between the FSE fields in the UK and Australasia, and these differences do indeed justify the need for the study in Australasia overall, computer fire models are used more in Australasia, and practitioners are more trained to use them.

The analysis of the results shows the need for practice guidelines. One critical, unexpected finding was that almost half of all respondents that used CFM's were not confident in whether their models were 'fit for purpose.' This shows the need for more specialised training or the need for more models that people are confident using. Many of those using CFM's indicated that they had little or no specialised training. A large number of participants also answered that CFM's were not used because 'modelling software is too complex.' Again, this demonstrates the need for more specialised training in the field.

To accomplish the third goal, the development of a draft set of practice guidelines began based on the data that had been received. To help with an analysis of the results, a focus group was conducted. This Focus Group included eight fire professionals from Australia and New Zealand, and proved extremely beneficial to the outcome of the project.

The guidelines that were developed fit into three main categories: Model Use, Qualification, and Verification. The Model Use category included guidelines that determined if models are needed, and what models should be used. The Qualification category dealt with the need to ensure that all participants in the FSE process had sufficient qualifications for their work. Finally, the Verification section of the Practice Guidelines contained parameters relating to how tools other than just models should be used in the design process.

In conclusion, this project accomplished its three main goals. The BRE project comparison demonstrated the differences between the FSE fields in the United Kingdom and Australasia. Evaluation of the results showed a need for Practice Guidelines. Lastly, a draft set of guidelines was developed and recommended to the Australasian Fire Authorities Council, other sponsors and stakeholders.