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# BCA Logic Pty Ltd
# Submission to Productivity Commission
# On Alternative Solutions and Private Certification

Reference is made to the survey regarding the ABCB, Performance BCA and Private Certification, and the following information is provided in order to support our survey, as we believe many of the questions are ambiguous.

BCA Logic are a team of Accredited (private) Certifiers and Fire Safety Engineers who have been accredited since the inception of private certification in NSW being early 1998.

There is much concern within the industry with respect to the function of the Performance BCA and the enabling Legislation. There needs to be a better National coordinated approach to the use of the BCA and how it is adopted in various states. It appears that the current BCA is difficult to change or review because of the Building Regulation Review Committees in each state. There also appears to be no attempt to rectify DTS solutions that do not meet the performance requirements of the BCA (eg smoke hazard management in office buildings).

The following information is forwarded for consideration:

## 1. General

The survey questions cost savings. Yes there are cost savings when services are deleted from a building such as sprinklers. Unfortunately, this does not mean that the building satisfies the performance requirements of the BCA, however, the loose wording of the NSW Act and he BCA does allow this to happen. The NSW Fire Brigades have lodged a number of complaints to this effect.

Cost saving are also realized, because the NSW DIPNR has insufficient resources to investigate these complaints, resulting in the same reports being reproduced on other buildings.

Below is a brief summary of the major concerns in the regulations and BCA, followed by a more detailed explanation starting in part 4.

## 2. BCA Issues

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| 1/ Property Protection | Some Clauses and Performance Requirements suggest Property Protection is a consideration (e.g. |

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| | CP1, CP2), however this is not clear.<br><br>Fire Safety Engineers (FSE) therefore interpret the BCA as life safety only.<br><br>Fire Resistance Levels are under attack, using FCRC project 6 for all buildings. |
| 2/ Sustainability | Buildings are allowed to burn down e.g. 3 storey office building or large isolated building.<br><br>No smoke detectors in smaller buildings<br><br>Is this contrary to Federal Government Greenhouse Gas Policy?<br><br>Fire water run off, air pollution etc. |
| 3/ Performance Requirements – "fire" | The Performance Requirements reference "spread of fire" and not smoke and products of combustion, which statistics show are the real threat to human life.<br><br>Therefore fire collars, dampers, doors removed in sprinklered buildings. |
| 4/ Performance Requirements – "to the degree necessary" | Means do all or nothing.<br><br>Suggest removal of this term and replace with "equivalent to or superior than". See NFPA 101.<br><br>Some Clauses should not be performance? E.g. 1.5 sprinklers. That is, there is a community expectation that as height of building increases, (25.0 metres) so will safety.<br><br>e.g. 2 fire stairs in tall buildings.<br><br>Note: We support performance, but suggest minimum "not negotiable" standards are adopted. |
| 5/ Verification Methods | Far too few<br><br>There is no method of measurement for many Performance Solutions.<br><br>e.g. For egress are we assuming 95% of people safe 95% of the time, or 100% people safe 100% of the time.<br><br>There are no Deemed-to-Satisfy reliability statistics.<br><br>E.g. Sprinklers 95% ?? Therefore a non sprinkler protected fire not feasible? |
| 6/ Expert Judgment | Not well defined. |

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| | Some structural engineers who are also “professional engineers” and sign off on alternative solutions.<br><br>This term should be refined.<br><br>Experts should be independent to the project. |
| 7/ A2.2 Verification Methods | Too open to interpretation<br><br>Anybody can claim to be an expert on some or all areas.<br><br>State register of practitioners recommended.<br><br>Better definitions required. |
| 8/ Redundancies not identified | FSE identify redundancies and remove.<br><br>e.g. buildings over 25.0 metres<br><br>Remove one stair<br>Remove fire doors<br>Remove stair pressurisation<br><br>BCA does not identify whether or not redundancy is deliberate. e.g. is 2 stairs not negotiable”. |
| 9/ Performance Requirements – not safe building | BCA requires equivalence to the Deemed-to-Satisfy, and not to a minimum level of safety.<br><br>That is if the Deemed-to-Satisfy BCA is deficient, the AS will be equally deficient. |
| 10/ Methodology | No “approved” methodology is adopted for AS, other than Expert Judgment and A2.2, which is considered to be a flaw of the BCA. |

## 3. State Issues

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|---|---|
| 1/ BCA Adoption | BCA adopted with no “users guide” for:<br><br>• Existing buildings (upgrading)<br>• AS (e.g. FSEG) |
| 2/ Methodology | See 10 above |
| 3/ Documentation | Level of assessment and documentation required of AS is not stipulated.<br><br>Essential Service documentation is open for interpretation. |
| 4/ Accreditation | Lack of auditors<br><br>Ethics and conduct<br><br>Competencies between schemes<br><br>Conflicts of interest |

| | |
|---|---|
| | Fire Brigade is a concurrence only.<br><br>Complaints investigation |
| 5/ Peer Review | A MUST!<br><br>Too much power and therefore pressure on the individual certifier.<br><br>Developers shop around.<br><br>Level of independence required, therefore the OCA model through a Building Practitioners Board is the preferred model.<br><br>Must apply equally to Councils, so there are no "weak links". |

## 4. Case Studies

The following Alternative Solutions appear to be common practice within the industry. These AS have been summarised below:

### 4.1 Removal of Sprinklers within the BCA

Clause C2.3 of the BCA requires sprinklers in large isolated buildings located within 18m of a boundary (fire source feature). Clause and Table E1.5 also requires sprinklers in large isolated building in accordance with C2.3.

The solution generally involves:

- Assessment of CP2 only, and not EP1.4
- Radiant heat study of fire from adjoining premises
- Neglects to assess fire spread within the building
- Does not address Fire Brigade intervention.
- No referral to the Fire Brigade (EP1.4)
- If referred to the Fire Brigade, the comments of the Brigade are ignored and the solution approved.

As the EP & A Act and Regulations do not outline a procedure to be followed for assessing or preparing AS, it can therefore be concluded that the AS has been prepared and approved in accordance with the Act, Regulations and Accreditation Scheme, where applicable.

Further details on concerns are contained in Part 4.

### 4.2 Residential Buildings (Sprinkler Protected)

A solution that appears common in Victoria, and has been utilised in NSW already, includes.

- Travel distance to an exit or point of choice of two exits of 20m or more, in lieu of 6m.
- Use of solid core doors in lieu of fire doors.
- Deletion of fire collars to PVC pipes.
- Deletion of fire dampers to common exhaust shafts.

The sole justification appears to be the efficacy of sprinklers.

We have concerns over the level of justification of the solution and the selection of fire scenario.

### 4.3 Secondary Approvals

A common scenario is that buildings with AS approved by private Certifiers may need secondary approvals by the Local Council.

These approvals include:

- Place of Public Entertainment (POPE) Licences
- Strata/subdivision Approvals
- Building Certificates (Section 149) at completion or future sale.

There is clear evidence that Councils are revisiting AS at the above approvals stages, and have also served Orders as a result of the application for a Secondary Approval.

This clearly outlines that there are concerns by Councils, and on the other hand, little protection for Accredited Certifiers who do approve AS in good faith.

### 4.4 Results

The effective result of the above solutions is that the DTS provisions of the BCA have been rewritten under the guise of alternative solutions, without consideration of community expectations, risk to life, or social impact.

## 5. Causes of Concern

The following causes of its concerns, which are summerised as follows:

### 5.1 Acts and Regulations

- The Act or Regulations do not prescribe a process for the preparation or assessment of AS.
- There are no boundaries or minimum community standards identified for AS.
- There is no method of measuring the effectiveness of an AS.
- The level of documentation attached/submitted with the Approval Construction Certificate to Council (public record) by the Certifier is not outlined. Therefore, in some instances, no evidence of alternative solutions is being submitted.
- Critical fire safety measures as a result/conclusion of the AS are not being incorporated in the Fire Safety Schedule, and the Act does not require the above to be done.
- Maintenance documentation is not being included with the Fire Safety Schedule, where required by the AS.

- Compliance Certificates for AS are not compulsory, nor is Accreditation of "Designers" (e.g. Fire Safety Engineers).
- No requirement for the signing off of the completed design, or the production of a quality manual, or overseeing of the implementation of the AS.

## 5.2 Ethics of Certifiers and "Designers" of AS

- Developers are "shopping around" for Certifiers and Designers who agree with their design approach prior to their appointment.
- Interpretations of the clauses and relevant performance requirements vary between certifiers. For example, perimeter access (Clause C2.3 and C2.4) has been interpreted as a CP2 issue, not CP9, and it is assumed this interpretation arose to avoid referral to the NSW Fire Brigade.
- The levels of risks accepted by certifiers and designers varies greatly, as evidenced by the case studies in part 4.0 of this paper.
- The integrity of certifiers is sometimes questioned in relation to the protection of public interest. That is, some solutions appear to be prepared in order to save many for the developer, and not for the protection of public being the end user of the building.
- Evidence has been provided of AS being approved without following the legislative requirements, such as referral to the Fire Brigade, and without fully documenting the solution.

## 5.3 Competencies of Certifiers and "designers" of AS

- Failure to address all relevant and related performance requirements indicates a lack of competence of certifiers and "designers".
- Without compulsory Compliance Certificates, the complete and completeness of the design may not be peer reviewed.
- There is no requirement for the Certifier to review or integrate the AS with the rest of the BCA. A Certifier need only rely on the report of a Fire Safety Engineer.

## 5.4 Building Code of Australia

- The BCA Lacks Clarity, guidance and criteria against which to adjudge alternative solutions.
- The BCA DTS provisions in some parts are ambiguous.
- The relevant performance requirements for a particular clause are not clearly defined. (e.g. Clause C2.3 , C2.4, perimeter access has been assessed as CP2, and not CP9).
- The link between clauses and performance requirements are not clearly defined (e.g. C2.3 and E1.5).
- There is no method of measurement of an alternative solution to a DTS solution. That is, there are insufficient verification methods.
- The BCA does not identify where additional complimentary fire safety sub systems are required (so called redundancies) for example buildings over 25m. As a result of this, AS are being prepared to remove "redundancies", as outlined in 3.2 of this paper.
- Compliance with the performance requirements or process does not ensure a safe building. That is, the designer need only identify a level of equivalence, not a level of safety.

- BCA doesn't address the requirements or objectives of other acts, such as the Fire Brigades Act, Clean Air Act (pollution from fire) or EPA (water and air pollution from fire).

## 5.5 Conflicts of Interest

- The definition of conflict of interest is not exhaustive and therefore is ambiguous for example it does not indicate whether or not a designer and certifier for the project can be within the one Company.
- The practice notes on conflict of interest use terms such as "should" and "may" and therefore are not specific enough, and are being ignored by some individuals.
- The developer can shop around for certifiers and are commonly asking opinions on certain performance issues prior to requesting fee proposals.

## 5.6 Fire Brigade Concerns

The NSW Fire Brigades have expressed the following common concerns with submissions:

- Submissions are not user friendly. There is not prescribed format, and therefore some submissions do not follow a logical sequence making them difficult to assess.
- Often the performance requirement stated as being applicable is incorrect, or the Fire Brigade believe another Performance Requirement is also applicable eg CP2 is being used to justify the deletion of sprinklers.
- The reports do not clearly indicate how each part of (EP1.4) the performance requirement is satisfied.
- Often the concurrence given by the Brigade is overturned by the Certifier and the Brigades comments are ignored and not implemented. This is not a non compliance with the Act, but in the Brigades opinion is resulting in unsafe buildings.
- Some matters that are required by the Act to be sent to the Brigade are not being sent by Certifiers.

## 5.7 Auditing and Complaints Investigation

- limited auditing has been carried out and there is too few auditors. The auditor is currently doing complaints and not audits.
- Auditing should not be restricted to a paper trail audit, and should include technical audits. That is, if someone does not document an alternative solution, it will not be picked up in the audit, that one was used.
- The technical audit shout include an audit of the means of compliance with the performance requirement.
- Complaints investigation standards/methods used by all bodies should be the same.
- The Accreditation process and competencies between schemes varies, and should be consistent, as they are accrediting people to do the same role.
- There should be an assessment process documented for alternative solutions.

## 6. Recommendations - General

We recommend the following general solutions should be implemented to solve many of the concerns raised in Part 5.

### 6.1 Acts and Regulations

- A procedural document should be prescribed for the preparation and assessment of alternative solutions. This will provide uniformity in paperwork, and will allow the thought processes to be clearly identified in any solution.
  Note: The document would describe the process and would not restrict innovative or new design.
- The Regulations should be amended to require alternative solutions to include a quality manual, implementation procedures, and items to be included on the Fire Safety Schedule.
- A system of "peer review" should be implemented. See Section 7 for details.
- Alternative solutions should be identified on a 149(5) Certificate with other valuable information such as flooding, heritage and contaminated land.

### 6.2 Ethics and Competencies

- Uniform competencies should be developed for practitioners.
- Uniform Code of Ethics/Conduct should be developed for Certifiers.
- Auditing should also assess the relationship with the clients.

### 6.3 BCA

- The fundamental aims and scope of the BCA must be clear to all.
- Clearly link Clauses with performance requirements.
- Provide further verification methods
- Outline where additional complimentary sub systems (redundancy) of systems is required
- Address other Acts and Fire Brigade Charter as appropriate.
- Provide limitations/boundaries for the use of performance.

The minimum expectations of the community must also be reflected in the BCA.

### 6.4 Conflicts of Interest

- Provide clearer definition of conflicts of interest.
- Provide common scenarios that are acceptable, and scenarios that are not acceptable, in a new clause such as an "Excluded Activities" clause.
- Provide more practice notes and guidance.
- Provide education for builders, developers, project managers, architects and the like on the role of the PCA, and their public obligations.

### 6.5 Auditing

- Audit the technical components of Certifiers
- Audit the means of compliance with the BCA.
- Audit the documentation process

- Audit the implementation and completion process where necessary.

## 7. Recommendations – Peer Review

### 7.1 General

We support a system of independent peer review for Alternative Solutions, with the preferred model being peer review undertaken through the recently formed Building Professionals Board (BPB)

### 7.2 History of "Peer Review"

#### 7.2.1 Local Government Act 1919

Up until 1993, any alternative solution to the Building Regulations, Ordinance 70, required a submission to the Land and Environment Court, for assessment by an independent Court Assessor.

The system was cumbersome and created significant time delays in most instances.

#### 7.2.2 Local Government Act 1993

Section 82 of the Act require alternative solutions to be submitted to a Committee consisting of Department of Local Government Officers (building branch) and the NSW Fire Brigades.

This system was "user pays" and provided a faster approvals time, although still had its critics.

#### 7.2.3 Environmental Planning and Assessment Act 1979

With the introduction of the EP & A Act, and the Performance Based BCA (1 July 1997), the necessity for a "peer review" process was removed.

Prior to Private Certification, Councils had to determine the Solution themselves, and sometimes employed Private Consultants to assist.

Since the introduction of Private Certification, the Certifier must satisfy themselves, and no peer review is necessary. The BSAP scheme requires reliance on a Fire Safety Engineer for Design, but no peer review of the design is required.

That is, one person can make a decision on their own, with no second opinion!

### 7.3 Government Controlled Assessment Committee (BPB)

Assuming that further definition and refinement occurs to the BCA, Act and Regulations, and an adopted procedure exists for the preparation and assessment of AS it is considered that an Assessment Committee is the best solution for complex AS.

Minor AS could be assessed under the current framework, and would be subject to auditing or complaints investigation. Referral to the committee may not be necessary if the above changes occur.

Complex AS should be referred to a committee similar to the previous Section 82 committee as outlined in 7.2.2.

The benefit of the committee would be:

- Consistency in assessment of all AS.
- Community expectations/social valves could be assessed.
- Recurring solutions to/problems with the DTS provisions could be referred to the ABCB for amendment of the BCA.

It is proposed that the system would be user pays.

### 7.4 Other Recommendations

The above outlines interim and long term solutions, however we consider that some immediate issues could be undertaken to enhance the process of AS. These include:

- Producing practice notes on the assessment and preparation of Practice Notes. Practice Not Number 29 from Victoria is attached as Annexure A as an example.
- Clearly defining conflict of interest provisions with respect to the preparation of AS.
- Clearly define the term “design” and preparation of plans” for example, is inspecting a building, preparing an upgrading strategy, and issuing a Construction Certificate contributing to the design solution of the building and therefore a conflict of interest?
- Clarify how Compliance Certificates are required to work. That is, can a designer and Certifier be in the same company?
- Make Compliance Certificates compulsory for AS from an Accredited Fire Safety Engineer.
- Fire Safety Engineer to inspect and certify the installed solution prior to the issuing of an Occupation Certificate for all complex solutions.

## 8. Conclusion

In conclusion it is recommended that major reforms be undertaken with respect to the Approvals regime with respect to the way in which Alternative Solutions are prepared and assessed for approval.

As a result of the lack of Regulation with respect to Alternative Solutions, the net result is that the Deemed-to-Satisfy provisions of the BCA are being rewritten on a case by case basis, with the same solution being proposed for the next building.

At the present time Fire Safety Engineering is being used to produce cost savings to Developers by removing the built in redundancies inherent within the BCA. That is, the “belts or braces” are being removed from the building without thought to community expectations or Collateral Damage to building occupants and businesses, which can compound under the solutions outlined in this report.

If you require any further information regarding the above, please don’t hesitate to contact me.

Yours faithfully,

Allan Harriman
***BCA Logic Pty Ltd***