Queensland Floods Commission of Inquiry

September 2011

CROWN LAW–(DERM-Glen Brumby)
Response to Requirement #1709609
File 540415/1Statement #1723158
Attachments 1723160 - 1723181
Volume 1 of 1 ORIGINAL

Statement of Glen Brumby

Executive Director
Building Codes Queensland
Department of Local Government and Planning

Vol. 1 of 1

QFCI

Date: 28/09/11 JM

Exhibit Number: 666

Queensland Government
Department of Infrastructure and Planning

QUEENSLAND FLOODS
COMMISSION OF INQUIRY

STATEMENT OF GLEN THOMAS BRUMBY

I, **GLEN THOMAS BRUMBY**, of c/- 63 George Street Brisbane in the State of Queensland, Executive Director, Building Codes Queensland, Growth Management Queensland, Department of Local Government and Planning, solemnly and sincerely affirm and declare:

1. I am the Executive Director of the Building Codes Queensland Division (BCQ), Growth Management Queensland, Queensland Department of Local Government and Planning.

2. Although the formal position title has changed over the years, I have been in the role as the leader of BCQ since 13 September 2006.

3. My qualifications include a Bachelor of Arts and Bachelor of Laws (with Honours) from the University of Adelaide. My qualifications and experience are further outlined in **Attachment 1.**

4. As the Executive Director of BCQ, I have overall responsibility and accountability for the Building Legislation and Standards Branch, the Plumbing Legislation and Standards Branch, Reform and Legislative Services Branch and the Building and Dispute Resolution Branch.

5. BCQ administers the:
    - *Building Act 1975* (BA) and the *Plumbing and Drainage Act 2002* (PDA) along with the associated regulations;
    - The Queensland Development Code (QDC) and the Queensland Plumbing and Wastewater Code (QPWC);
    - Plumbing Industry and Pool Safety Councils and the associated licensing regimes;
    - Water treatment system approvals under the PDA; and

- Building and Development Dispute Resolution Committees.

6. BCQ provides advice about applying building and plumbing regulations to:
   - Building and plumbing industry practitioners;
   - Councils;
   - State government departments; and
   - The general public.

7. As the Executive Director, BCQ, DLGP, I report to the Government Planner and I regularly brief the Minister responsible for the *Building Act 1975* and the *Plumbing and Drainage Act 2002* on building and plumbing matters. An organisational chart outlining my reporting structure is provided at **Attachment 2.**

8. As the Executive Director of BCQ, I represent the Queensland Government on the Australian Building Codes Board (ABCB) and also support the Minister (mentioned in paragraph 7) in his role as a member of the national Building Minister's Forum (BMF).

9. I also chair Queensland's Plumbing Industry and Pool Safety Councils and BCQ's Building and Plumbing Industry Consultative Groups.

10. With a significant regulatory workload, BCQ attempts to take on building standards projects only where there is an urgent need to develop a State specific solution and national options have been exhausted.

Background

<u>The Australian Building Codes Board</u>

11. As previously advised, I represent the Queensland Government on the ABCB.

12. The ABCB is responsible for:
    - Maintaining and updating the Building Code of Australia (BCA) and the Plumbing Code of Australia (PCA);
    - Providing the community with cost-effective and efficient regulations to aid the design, construction and use of buildings throughout Australia;
    - Ensuring the regulation of building matters is proportional to the issues being regulated to facilitate and not inhibit business activity; and
    - Supporting the Council of Australian Government (COAG) in the pursuit of its National Reform Agenda that aims to address issues relating to climate change, human capital, competition and regulatory reforms to lift Australia's prosperity.

13. The ABCB is a national body that is required to adhere to the COAG principles for best practice regulation and balance the needs of all Australian States and Territories (**Attachment 3**).

14. An Intergovernmental Agreement (IGA) has been signed by all relevant Ministers for the administration and governance of the ABCB. The IGA includes reference to the need for matters to be addressed at a national level and State variations to the national building requirements to be minimised wherever possible (**Attachment 4**).

1. Any steps taken by Building Codes Queensland since 2009 to implement changes to building standards in Queensland relating to impacts of flooding on buildings.

15. I began following the progress of, and advocating for the ABCB to develop specific national building standards relating to floods after I was appointed to the board on 16 October 2007.

16. A project was already included on the ABCB's work program titled 'Buildings in Flood Prone Areas'. It included a consultation paper on developing standards which is provided as **Attachment 5**. It was first included in the

ABCB's work plan in 2006/7 after the ABCB office submitted an information paper resulting from the outcomes of COAG's April 2007 meeting concerning the ABCB's future involvement under the national Climate Change Adaptation Framework (**Attachmcnt 6**).

17. A paper was prepared by the ABCB office and it was considered by the Building Codes Committee in October 2007 (**Attachment 7**). The Building Codes Committee is a technical policy committee that reports to the ABCB. A history of the Buildings in Flood Prone Areas project (the "Flood Standards project") provided to me by the ABCB office is **Attachment 8.**

18. Over the following years, the ABCB kept the Flood Standards project on its work plan although little reported progress was made. My impression was that it was not considered a high priority by the ABCB office or by other Board members in the context of the high volume of work being progressed by the ABCB. At the time the ABCB had a very high workload with limited resources. For example, it needed to revise bushfire standards, prepare new energy efficiency provisions for all classes of buildings, review wind loadings and develop revised disability access provisions. Each of these projects created significant workloads on top of the need to maintain all existing building standards covered by the BCA.

19. I recall that I continued to ask for progress on the Flood Standards project at each ABCB meeting prior to the meeting in July 2009 as the project remained visible to Board by virtue of it being on the work plan. I recall that key matters of discussion at ABCB meetings where the Flood Standards project was discussed related to the role of planning in preventing flood damage to buildings and whether a regulatory approach was appropriate (**Attachment 9**).

20. However, I considered that progress at the ABCB remained slow and that the support of the Minister responsible for the *Building Act 1975* and the *Plumbing and Drainage Act 2002* would be needed to make headway with the Flood Standards project on the ABCB's work program given the continual amount of new work being referred to the ABCB.

21. On my recommendations, the Honourable Stirling Hinchliffe, former Minister for Infrastructure and Planning (from 26 March 2009 to 21 February 2011), asked for the ABCB project titled 'Building in Flood Prone Areas' to be prioritised in the ABCB's work program at the BMF meeting on 21 May 2009 (**Attachment 10**).

22. At the July 2009 ABCB Board meeting, the ABCB General Manager advised a Preliminary Impact Assessment for the 'Building in Flood Prone Areas' project was being developed.

23. At the September 2009 ABCB Board meeting, the Board agreed to develop a handbook for building in flood prone areas, in a performance based format, for use by jurisdictions. However as far as I was aware progress was still being hampered by other work priorities, including work on bushfire, energy efficiency and disability access standards (**see Attachment 9**).

24. With the February 2008 Mackay and other Queensland floods in mind, I briefed Minister Hinchliffe on the Queensland priorities for the upcoming November 2009 BMF meeting. He subsequently wrote to the BMF on 30 September 2009 requesting this matter be included on the agenda for discussion at the November 2009 BMF meeting (**Attachment 11**).

25. I then oversaw preparation of an agenda paper requesting that BMF note the significant impact of flooding on buildings in Australia and the current lack of national building standards to address this issue (**Attachment 12**). The paper asked Ministers to agree that the ABCB should develop a national standard for building in flood prone areas within 12 months that is suitable for adoption by jurisdictions.

26. At the BMF meeting on 13 November 2009, the majority of States and Territories agreed to the development of a standard for building in flood prone areas. It was agreed that no further work would be done on the handbook and the matter would be referred back to the ABCB to report back to BMF on

whether a standard could be developed and in what timeframe, given the ABCB's approved work plan (**see Attachment 10**).

27. On 1 July 2010, the BMF noted a scoping study prepared by the ABCB on developing a standard for building in flood prone areas and agreed that a regulatory project was to be finalised by the ABCB applying processes consistent with the IGA for the ABCB and COAG guidelines (**Attachment 13**).

Response to 2010/11 Queensland floods

28. As part of the direct response to the 2010/11 Queensland floods, I oversaw the implementation of urgent amendments to Queensland's building and plumbing legislation to help ensure homeowners can repair their homes as quickly and cost effectively as possible. Amendments were made to the:
    - QDC so a house could be raised without a plumbing approval and without having to be upgraded to current energy efficiency standards
    - BA via the *Queensland Reconstruction Authority Act 2011* (QRAA) to:
        - provide a six month exemption for leases of properties with non-shared pools without a pool safety certificate and also provide a six month extension for pool owners to ensure their pools are registered on the online pool register by 4 November 2011; and
        - to expand the scope of works allowed to be performed by certain local government building surveying technicians to assist flood recovery efforts in regional areas
    - QPWC to permit home owners in natural gas reticulated areas to replace natural disaster affected electric hot water systems with another electric hot water system

29. BCQ also undertook a range of communication activities, including newsflashes, guideline, editorials, website information and Departmental e-lerts relating to repairing and rebuilding after the floods.

30. An example of the newsflashes (**Attachment 14**) released by BCQ relating to repairing and rebuilding after the floods include the following:

- Building Newsflash Number 460 (issued 19 January 2011) – Re-occupying buildings affected by flood;
- Building Newsflash Number 461 (issued 21 January 2011) – Flooding impacts on fire safety systems;
- Building Newsflash Number 462 (issued 21 January 2011) – Flood recovery work – plumbing, drainage and on-site waste water management systems;
- Building Newsflash Number 463 (issued 24 January 2011) – Building information for flood affected property owners, Queensland Plumbing Wastewater Code and plumbing forms;
- Building Newsflash Number 464 (issued 21 February 2011) – Legislative changes on pool safety, Amendments to *Building Act 1975* for building surveying technicians;
- Building Newsflash Number 465 (issued 10 March 2011) – Engineering services in flood and cyclone affected areas, Guideline on repairing/rebuilding sheet metal roofs after a cyclone;
- Building Newsflash Number 470 (11 May 2011) – Revised pool registration, spa pool heating requirements and guidelines, and new accreditation body for building certifiers.
- Building Newsflash Number 472 (7 July 2011) – Exemptions for raising houses, extended registration period for pools and combination hand basin/cisterns;
- Building Newsflash Number 474 (26 July 2011) – Early adoption of standard for construction of buildings in flood hazard areas.

31. A factsheet entitled "Repairing your house after a flood" relating to repairing and rebuilding after the floods was released by BCQ (**Attachment 15**).

32. With respect to flooding impacts on plumbing systems in buildings, BCQ presented a paper to the Plumbing Industry Council (PIC), at its eighth general meeting held on 2 February 2011, about reflux valves to prevent sewerage

surcharge from sewerage mains for properties located within low lying areas subject to possible flooding. The paper outlined: "problems arising from recent flooding in Queensland indicated that sewerage infiltration from sewer mains caused significant damage to properties not inundated with flood water. It also stated that overflow relief gullies failed to provide adequate protection against the infiltration of sewerage during the recent Queensland flood event (**Attachment 16**).

33. The paper recommended that: "properties located within low lying areas subject to possible flooding install a reflux valve at the boundary connection to prevent sewerage surcharge from sewer mains. BCQ will consult with the plumbing industry on whether changes are required to the plumbing legislation to mandate the inclusion of reflux valves and, if considered favourably, whether it should apply to all sewered properties." The PIC considered this paper and agreed that this issue be taken to the Plumbing Industry Consultative Group (PICG) for its consideration.

34. BCQ subsequently presented a paper for discussion by the PICG at its meeting held on 30 March 2011 (**Attachment 17**). I am advised that the DLGP officer acting in my position (I was on leave from 25 January 2011 up to and including 6 April 2011 for family reasons) advised the PICG that BCQ was recommending for low lying areas that a reflux valve be installed to both the sewer and stormwater drain within the property.

35. However, I understand that the DLGP officer acting in my position also advised there were no plans at that stage to amend legislation to mandate these installations. The PICG agreed with this recommendation on the basis that the Local Governments where flooding had occurred were conducting an investigation of how best to have a reflux valve requirement apply for new and existing homes.

2. **The progress the Queensland Government has made in implementing the proposed national standard for construction of buildings in flood hazard areas ("Draft Standard") into the Queensland Development Code (QDC) (please include copies of all relevant briefing notes and drafts of the amendments to the QDC).**

36. In mid-2011, two of my staff members represented BCQ on the ABCB reference group and provided advice on the development and implementation of the draft Standard. The draft Standard is expected to undergo a national regulatory impact statement in late 2011, and is scheduled to be finalised in early 2012. It is anticipated that the draft Standard will be included in the 1 May 2013 version of the Building Code of Australia (**Attachment 18**).

37. I also led an analysis of current policy gaps and solutions to address issues relating to flooding impacts on buildings in Queensland. Based on my recommendations, the Deputy Premier approved for public consultation to occur on the early adoption of the draft Standard as a new part to the QDC prior to its inclusion in the BCA. A copy of the Departmental briefing note is **Attachment 19**.

38. The proposal to adopt the draft Standard early in Queensland as a new part to the QDC was the subject of a building newsflash issued by BCQ on 26 July 2011 titled "Building Newsflash Number 474 - Early adoption of standard for construction of buildings in flood hazard areas". This newsflash (see **Attachment 14**) included a copy of the draft Standard and requested feedback during a month-long consultation period on both the draft Standard and the Queensland proposal for early adoption.

39. On 14 September 2011, the Building Industry Consultative Group, which includes members of a wide range of key building industry organisations including the Housing Industry Association, the Queensland Master Builders Association, the Property Council of Australia, the Building Designer's Association of Queensland and the Local Government Association of Queensland, was also consulted on the proposal.

40. BCQ is currently preparing for the introduction, subject to Government approval, of the new QDC part for buildings in a designated flood hazard management area in late 2011. The QDC will refer to the requirements currently included in the draft Standard (see **Attachment 18**), thereby making them a mandatory requirement in Queensland.

41. It is proposed that the new QDC will apply to new buildings and potentially to additions to existing buildings, but not generally to other building alterations (for example, internal alterations to a building such as a new bathroom or the removal of a wall). The new QDC will also set a minimum freeboard of 300mm that will apply unless otherwise set by a Local Government.

42. The scope of the proposed QDC will be limited to class 1 (houses and townhouses), class 2 (units and flats), class 3 (hotels, motels and backpackers), class 4 (caretakers dwelling), class 9a (health care) and class 9c (aged care) buildings.

43. Building codes are generally drafted as performance documents with broad statements that elements of buildings are required to meet and corresponding specific recipes of how the broad performance requirement is 'deemed' to be met. These 'deemed' to satisfy statements are also known as 'acceptable solutions'. Therefore, the proposed QDC will provide more specific performance requirements and acceptable solutions (also know as 'deemed-to-satisfy' provisions) for the design and construction of new buildings, in a 'flood hazard area', i.e. an area that has been designated by the Local Government under section 13 of the *Building Regulation 2006* (BR).

44. Although I understand only some Local Governments have previously designated flood hazard areas in accordance with s13 of the BR, BCQ has been working with the Queensland Reconstruction Authority (QRA) on a draft guideline entitled – *Planning for stronger, more resilient floodplains* (**Attachment 20**). The purpose of the project is to identify both interim and long term planning solutions, including a mapping product, to promote a greater correlation between land use planning and floodplain management at a

river sub-basin level. The QRA has previously advised me that an important aim of this draft guideline is to help Local Governments introduce consistent and specific planning controls to manage flood risks in the floodplain assessment areas.

45. The performance requirements of the proposed QDC will provide that new buildings and potentially addition to existing buildings in a flood hazard area must be, to the degree necessary, designed, constructed, connected, and anchored to resist flotation, collapse or permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the defined flood event.

46. The acceptable solutions of the draft QDC are limited to cases of likely flooding that involve a maximum average flow rate of 1.5 metres per second (5.4 km/hr).

47. Where flow rates are expected to exceed the design level of 1.5 metres per second, an engineer would need to design the building based on first principles. This means that an engineer would need to undertake an analysis of all the relevant forces related to the defined flood event and ensure the building's design could withstand the loads so the structure was safe. The ABCB has advised that the flow rate of 1.5 metres per second has been applied in the USA (Federal Emergency Management Agency) using existing engineering principles.

48. The acceptable solutions of the draft QDC require the elevation of habitable floors above the flood hazard level. The elevation of a habitable floor level must be above the height of the defined flood level plus a freeboard as set by the Local Government. If a Local Government does not provide a defined flood hazard level then for buildings to be located in a designated flood hazard area the designers would need to get a hydrologist report indicating the likely flood level for the defined flood event specific to the site. Building services such as electrical and mechanical systems must be either located above the flood level or designed in a waterproof manner.

49. The acceptable solutions of the draft QDC also outline that enclosed non-habitable rooms must receive no more than 1 metre inundation during the defined flood event. This is because the enclosing walls are likely to transfer additional forces to the structure during inundation and it is necessary to set specific design parameters in 'deemed to satisfy' solutions.

50. It is also proposed that additional non-mandatory provisions, which are currently outside the scope of the draft Standard, will also be included in the QDC. For example, this may include requirements for water resistant materials of a non-structural nature below the defined flood hazard level to help improve flood resilience of areas that are inundated. However, it may not be cost effective to set requirements for water resistant materials such as wall linings. This is because it may in fact be more cost effective to simply replace wall linings given that the intra wall spaces need to be cleaned and dried out after inundation. This is a matter that some Local Governments have already indicated that they wish to cover in building standards.

51. It is also proposed to make some non-mandatory provisions for commercial buildings in order to minimise losses in a designated flood hazard area. A Local Government may decide to adopt the non-mandatory parts on a voluntary basis through a planning scheme, temporary local planning instrument, or by resolution. It is intended these parts will become mandatory if adopted by a Local Government.

52. These non-mandatory provisions have been proposed in order to address a need identified by certain Local Governments in the period after the 2010/11 floods. For example, Brisbane and Ipswich City Councils attempted to address some of these matters, such as the use of flood resilient materials, through their planning requirements via the introduction of Temporary Local Planning Instruments (**Attachment 21**). It is always considered preferable to incorporate building matters into the State or national building regulations wherever possible, as this creates a more consistent approach and allows building certifiers, who are best qualified and experienced to assess building

matters, to assess the merits of the building application. It also helps to avoid duplication in process where certain building requirements must be assessed at the planning approval stage, and then again at the building approval stage.

53. Industry feedback on the draft QDC has indicated there is general support for more detailed building standards in flood prone areas. Industry feedback also suggested the proposed standard should specify that at least one bathroom should be located above the defined flood level to ensure homes remain habitable after flood events. However, industry has raised some concerns with a lack of flood mapping in some Local Government areas, the lack of detailed knowledge about cost impacts of the new requirements, and the ability for Local Governments to adopt additional building requirements that are outside the scope of the draft Standard. The Housing Industry Association has provided feedback to the effect that they consider the QDC should not be called up in building law until the ABCB's regulatory impact statement process has been finalised.

3. How the draft Standard will apply in circumstances where a local government has not designated a 'flood hazard area' in its planning scheme.

54. Land use planning and the ability to build in a flood hazard area in Queensland are determined by Local Governments. Section 13 of the BR provides that a Local Government may, under a planning scheme, a temporary local planning instrument, or by resolution, designate a natural hazard management area (flood).

55. The building requirements under the draft QDC, as well as the national Standard once it has been introduced into the BCA as scheduled in May 2013, will only apply to areas designated by a Local Government as a 'flood hazard area'. If a Local Government does not designate an area under its control as being a 'flood hazard area', then the building requirements will not be triggered.

56. This is necessary because Local Governments, first and foremost, have specific local knowledge about past flooding events and have the ability to decide whether certain uses are appropriate in a flood affected area. The proposed changes to the building requirements, like all building requirements under national and State building codes and standards, work under the assumption that the use has been approved for that site.

57. I also understand that the part of the QRA's work program has involved developing flood hazard mapping, in collaboration with other key State agencies such as the Department of Environment and Resource Management, for all Local Government areas to be able to adopt on a voluntary basis. This means that all Local Governments across the State will soon have access to mapping to assist them to identify flood affected areas. BCQ is currently working towards having Government consider introducing the new QDC part for buildings in flood hazard areas. This is also expected to involve regulatory amendments to enable Local Governments to use the mapping that the QRA has developed as a basis for designating a flood hazard area for the purposes of building matters, including the proposed QDC, under s13 of the BR.

4. Other matters relevant to the Commission of Inquiry

58. Adoption of the draft standard for buildings in flood prone areas can not be expected to alter the risks of flood damage for buildings already constructed in flood plains.

59. The proposed QDC could only reasonably be applied to new building work, potentially including additions to existing buildings. There are a number of changes that owners of existing buildings could implement however, that could potentially be of some future benefit. Although outside the scope of the mandatory requirements of the proposed QDC, building owners could elect to elevate some of the building's services above the defined flood level when undertaking other repairs to the building. In addition, raising homes with lightweight construction, where this is practical, can be expected to provide a benefit.

I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

Signed . . . [redacted] . . . .

Glen Thomas Brumby

Taken and declared before me, at Brisbane this 15 day of September 2011.

. . [redacted]

Solicitor/~~Barrister/Justice~~ of the

~~Peace/Commissioner for Declarations~~

BRISBANE CITY COUNCIL

TEMPORARY LOCAL PLANNING INSTRUMENT – 01/11

BRISBANE INTERIM FLOOD RESPONSE

BRISBANE CITY

Dedicated to a better Brisbane

BRISBANE CITY COUNCIL

TEMPORARY LOCAL PLANNING INSTRUMENT - 01/11

BRISBANE INTERIM FLOOD RESPONSE

1. Short title

This temporary local planning instrument (TLPI) may be cited as Temporary Local Planning Instrument 01/11 - Brisbane Interim Flood Response.

2. Purpose

The purpose of this TLPI is to introduce the Interim Residential Flood Level (IRFL) and facilitate the following:

1. Application of the Interim Residential Flood Level.
2. Where on standard lots, allow Self Assessment of Houses up to 9.5m above ground level where affected by waterway or Brisbane River Flooding (as described in Table A below).
3. Change the Level of Assessment for a House on a Small Lot to Code Notifiable where a new House or raising an existing House, and not meeting the requirements of Table 1 Building Envelope Requirements of the Residential Design Small Lot Code and affected by waterway or Brisbane River flooding.
4. Allow Houses to be raised or extended with habitable floor levels below the Interim Residential Flood Level with requirements for resilient building design and materials.
5. Introduce additional requirements for filling and excavation for Houses.
6. Allow for waterway and Brisbane River Flooding to be taken into account when assessing maximum building height for a House, Multi-Unit dwelling and Single Unit Dwelling.
7. Identify additional technical standards and requirements to complement those in the Subdivision and Development Guidelines for properties affected by waterway and Brisbane River Flooding, including building basements and essential services for commercial and residential buildings.

3. Application

The land to which this TLPI applies is those lots, any part of which, are affected by the Interim Residential Flood Level and/or Creek/Waterway Flooding. The terms "Interim Residential Flood Level" and "Creek/Waterway Flooding" are defined in Section 5.

Relationship with planning scheme

1. To the extent of any inconsistency between the planning scheme and the TLPI, the TLPI prevails.
2. Exempt development as listed in Chapter 3 of the City Plan is unaffected by this TLPI.
3. Building work listed under section 1 of the Residential Design Small Lot Code, Residential Design Character Code and Residential Design Single Unit Dwelling Code is unaffected by this TLPI.
4. This TLPI overrides the provisions in City Plan 2000 to the extent of matters that this instrument relates to as outlined in section 6.
5. Where raising a house to comply with the IRFL and where located within a Demolition Control Precinct, Performance Criteria 2 and Acceptable Solution A2.1 of the Residential Design – Character Code do not apply.

4. Duration

This TLPI has effect for a period of 1 year from the date of commencement.

5. Definitions

1.1 Terms used in this TLPI have the same meaning as in the *Sustainable Planning Act 2009*, unless otherwise defined in this TLPI or the planning scheme.

1.2 The Interim Residential Flood Level (IRFL) is the surface of floodwater in one or both of the following flood events, whichever is the highest at any point:

1. Brisbane River - January 2011 event, as described in table A
2. The Defined Flood Level (DFL) based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the City Gauge, as described in table A.

1.3 Creek/waterway flooding is all land affected by a 100 year (Average Recurrence Interval) flood event, as described in table A

1.4 Table A below refers to the source of the mapping and data relied on for the purpose of this instrument.

Table A	
TLPI extent:	**Described in:**
The January 2011 estimated Brisbane River flood extent	Temporary Local Planning Instrument – Brisbane Interim Flood Response Map Number LGA 1000-0025-1 Sheet 1 to Sheet 22 dated 19/4/2011
Waterway/creek flood inundation extent for a 100 year ARI waterway/creek flood event; and Defined Flood Level based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the Brisbane City Gauge	"Flood Flag Maps" and *FloodWise* Property Report, copyright Brisbane City Council as at the date of gazettal.
Flood level:	**Described in:**
The estimated January 2011 Brisbane River flood levels; and Defined Flood Level based on a Brisbane River Defined Flood Event of 3.7m AHD at the Brisbane City Gauge; and Waterway/creek 100 year ARI flood level	The *Brisbane Interim Flood Response* database, and referenced in the *FloodWise* property report copyright Brisbane City Council as at the date of gazettal.

* The TLPI does not relate to land affected solely by overland flow or tidal flooding (storm tide)

6. Effect of this Temporary Local Planning Instrument

Development specified in Table 1, Column 1 on lots, any part of which are affected by the Interim Residential Flood Level and/or creek/ waterway flooding as described in Table A, have the level of assessment specified in Table 1, Column 2 and must comply with the applicable City Plan Codes specified in Column 3 and the additional Purpose, Performance Criteria and Acceptable Solutions specified in Table 1, Columns 4, 5 and 6.

In the event of any inconsistency between the purpose, performance criteria and acceptable solutions of the applicable City Plan codes specified in column 3 and the additional purpose, additional performance criteria and additional acceptable solutions specified in columns 4,5 and 6 of table 1 the additional purpose, the additional performance criteria and additional acceptable solutions shall prevail.

Development specified in Table 3, Column 1 on lots, any part of which are affected by the Interim Residential Flood Level and/or creek/waterway flooding as described in Table A, must comply with the requirements specified in Table 3, Column 2.

Development specified in Table 4, Column 1 on lots, any part of which are affected by the Interim Residential Flood Level and/or creek/waterway flooding as described in Table A, must comply with the requirements specified in Table 4, Column 2.

Development for demolition where the work is raising a house, except where on a small lot, where the resultant height does not exceed 9.5 metres above ground level, is exempt development. (Note: does not include any building work to enclose under the house).

Table 1: Assessment table for specific development where affected by creek/waterway and Brisbane River Flooding

Column 1 Type of Development	Column 2 Level of Assessment	Column 3 Applicable Codes	Column 4 Additional Purpose	Column 5 Additional Performance Criteria	Column 6 Additional Acceptable Solution
House where not on a Small Lot	Self Assessment where meeting the Acceptable Solutions of the House Code as varied by the additional Acceptable Solutions in Column 6	House Code	Ensure new houses, where raising a house and extensions to existing houses achieve acceptable flood immunity. Ensure houses are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood level and creek/waterway flooding. Building components and flood resilient design: • preserve structural performance during and after a flood event • prevent further post flood deterioration • minimise repair costs following a flood • ensure ease of cleaning New building work improves flood immunity and ensures safety for all persons. Filling or excavation must not impact adversely on visual amenity or local drainage. *Note: Retaining wall construction and embankment gradients will also need to comply with the Building Regulations*	Except where on a Small Lot; where an existing house is raised, extended or a new house is erected, the building height above ground level must not be greater than 9.5 metres. The minimum level for habitable and non–habitable areas (including utility areas, garage, laundry and storage room) are not less than those set out in Table 2 Where development involves raising an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels andany building work below the IRFL utilises water resistant materials* Where development involves enclosing under or extending an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels; and • Any enclosure below the IRFL must have openings that are at least 1% of the enclosed area for automatic exit of flood water for the design flood or lesser floods. Any openings are a minimum of 75mm. • floor levels are elevated above ground level, such as on stumps or fill; and • the new building work below the IRFL uses water resistant materials*; and • essential services are located above IRFL and any electrical services, including photovoltaic panels, are easily disconnected; and • the new building work below the IRFL uses corrosion free building components such as galvanised steel or aluminium.

					**Editor's Note: For a list of water resistant materials please refer to table 1- Higher water resistance - Growth Management Queensland Factsheet January 2011 – Repairing your House After a Flood* A retaining wall is set back at least half the height of the wall from any boundary of the site; and Retaining walls over 1.5m are stepped 0.75m for every 1.5m in height, terraced and landscaped; No filling, excavation or retaining works shall be carried out that cause stormwater to be concentrated or redirected from pre-development conditions, unless the stormwater is directed to a lawful point of discharge such as kerb and channel. Where in the Brisbane River Corridor: Where an existing house is raised, extended or a new house is erected, the building height above ground level, must not be greater than 9.5 metres.
House in the Demolition Control Precinct	Self Assessment	House Code Character Code	Ensure new houses, where raising a house and extensions to existing houses achieve acceptable flood immunity Ensure houses are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding. Building components and flood resilient design: • preserve structural performance during and after a flood event • prevent further post flood deterioration • minimise repair costs following a flood • ensure ease of cleaning	The minimum level for habitable and non–habitable areas (including utility areas, garage, laundry and storage room) are not less than those set out in Table 2 Where development involves raising an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels andany building work below the IRFL utilises water resistant materials* There development involves enclosing under or extending an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing

				New building work improves flood immunity and ensures safety for all persons. Filling or excavation must not impact adversely on visual amenity, the stability of land or local drainage. *Note: Retaining wall construction and embankment gradients will also need to comply with the Building Regulations*	habitable floor levels; and • Any enclosure below the IRFL must have openings that are at least 1% of the enclosed area for automatic exit of flood water for the design flood or lesser floods. Any openings are a minimum of 75mm. • floor levels are elevated above ground level, such as on stumps or fill; and • the new building work below the IRFL uses water resistant materials*; and • essential services are located above IRFL and any electrical services, including photovoltaic panels, are easily disconnected; and • the new building work below the IRFL uses corrosion free building components such as galvanised steel or aluminium. **Editor's Note: For a list of water resistant materials please refer to table 1- Higher water resistance - Growth Management Queensland Factsheet January 2011 – Repairing your House After a Flood* A retaining wall is set back at least half the height of the wall from any boundary of the site; and Retaining walls over 1.5m are stepped 0.75m for every 1.5m in height, terraced and landscaped; No filling, excavation or retaining works shall be carried out that cause stormwater to be concentrated or redirected from predevelopment conditions, unless the stormwater is directed to a lawful point of discharge.
House on a Small Lot	Self Assessment where meeting the	House Code Residential	Ensure new houses, where raising a house and extensions to existing houses	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and	The minimum level for habitable and non–habitable areas (including utility areas, garage, laundry and storage rooms) are not less than those set out in Table 2

	Acceptable Solutions of the House Code as varied by the additional Acceptable Solutions in Column 6 Code Notifiable where not meeting the Acceptable Solution relating to the building height element of the Residential Design Small Lot Code Impact Assessment where not meeting the Acceptable Solutions of Part 1 of the Residential Design Small Lot Code	Design Small Lot Code	achieve acceptable flood immunity Ensure houses are not subject to unreasonable hazard due to flooding.	creek/waterway flooding. Building components and flood resilient design: • preserve structural performance during and after a flood event • prevent further post flood deterioration • minimise repair costs following a flood • ensure ease of cleaning New building work improves flood immunity and ensures safety for all persons. Filling or excavation must not impact adversely on visual amenity, the stability of land or local drainage. *Note: Retaining wall construction and embankment gradients will also need to comply with the Building Regulations*	Where development involves raising an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels andany building work below the IRFL utilises water resistant materials* There development involves enclosing under or extending an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels; and • Any enclosure below the IRFL must have openings that are at least 1% of the enclosed area for automatic exit of flood water for the design flood or lesser floods. Any openings are a minimum of 75mm. • floor levels are elevated above ground level, such as on stumps or fill; and • the new building work below the IRFL uses water resistant materials*; and • essential services are located above IRFL and any electrical services, including photovoltaic panels, are easily disconnected; and • the new building work below the IRFL uses corrosion free building components such as galvanised steel or aluminium. **Editor's Note: For a list of water resistant materials please refer to table 1- Higher water resistance - Growth Management Queensland Factsheet January 2011 – Repairing your House After a Flood* A retaining wall is set back at least half the height of the wall from any boundary of the site; and

					Retaining walls over 1.5m are stepped 0.75m for every 1.5m in height, terraced and landscaped; No filling, excavation or retaining works shall be carried out that cause stormwater to be concentrated or redirected from predevelopment conditions, unless the stormwater is directed to a lawful point of discharge.
House on a Small Lot and in the Demolition Control Precinct	Self Assessment where meeting the Acceptable Solutions of the House Code as varied by the additional Acceptable Solutions in Column 6 Code Notifiable where not meeting Acceptable Solution 2 of the Residential Design Small Lot Code Impact Assessment where not meeting the	House Code Residential Design Small Lot Code Residential Design Character Code	Ensure new houses, where raising a house and extensions to existing houses achieve acceptable flood immunity Ensure houses are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding. Building components and flood resilient design: • preserve structural performance during and after a flood event • prevent further post flood deterioration • minimise repair costs following a flood • ensure ease of cleaning New building work improves flood immunity and ensures safety for all persons. Filling or excavation must not impact adversely on visual amenity, the stability of land or local drainage. *Note: Retaining wall construction and embankment gradients will also need to comply with the Building Regulations*	The minimum level for habitable and non–habitable areas (including utility areas, garage, laundry and storage room) are not less than those set out in Table 2 Where development involves raising an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels andany building work below the IRFL utilises water resistant materials* There development involves enclosing under or extending an existing house and the modified building does not meet the requirements of Table 2, the following requirements are met: • The new habitable floor levels are above the existing habitable floor levels; and • Any enclosure below the IRFL must have openings that are at least 1% of the enclosed area for automatic exit of flood water for the design flood or lesser floods. Any openings are a minimum of 75mm. • floor levels are elevated above ground level, such as on stumps or fill; and • the new building work below the IRFL uses water resistant materials*; and • essential services are located above IRFL and any electrical services, including photovoltaic panels, are easily disconnected; and • the new building work below the IRFL uses corrosion

	Acceptable Solutions of Part 1 of the Small Lot Code				free building components such as galvanised steel or aluminium. **Editor's Note: For a list of water resistant materials please refer to table 1- Higher water resistance - Growth Management Queensland Factsheet January 2011 – Repairing your House After a Flood* A retaining wall is set back at least half the height of the wall from any boundary of the site; and Retaining walls over 1.5m are stepped 0.75m for every 1.5m in height, terraced and landscaped; No filling, excavation or retaining works shall be carried out that cause stormwater to be concentrated or redirected from predevelopment conditions, unless the stormwater is directed to a lawful point of discharge.
Single Unit Dwelling in the Low Density, Character and Low Medium Density Residential Area	No change to Level of Assessment	Residential Design Single Unit Dwelling Code	Ensure all new single unit dwellings achieve acceptable flood immunity. Ensure all new single unit dwellings are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	
Single Unit Dwelling in the Medium Density and High Density Residential Area and	No change to Level of Assessment	Residential Design Single Unit Dwelling Code	Ensure all new single unit dwellings achieve acceptable flood immunity. Ensure all new single unit dwellings are not	Buildings may be higher than this to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	

Centres Area			subject to unreasonable hazard due to flooding.		
Multi Unit in the Low Density, Character and Low Medium Density Residential Area	No change to Level of Assessment	Residential Design – Low Density, Character and Low Medium Density Code	Ensure all new multi-unit-dwellings achieve acceptable flood immunity. Ensure all new multi-unit dwellings are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	
Multi Unit in the Medium Density Area	No change to Level of Assessment	Residential Design – Medium Density Code	Ensure all new multi-unit dwellings achieve acceptable flood immunity Ensure all new multi-unit dwellings are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	
Multi Unit in the High Density Area	No change to Level of Assessment	Residential Design – High Density Code	Ensure all new multi-unit dwellings achieve acceptable flood immunity Ensure all new multi-unit dwellings are not subject to unreasonable hazard due to flooding.	Buildings may be higher than adjoining properties to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	
Mixed Use in the Centres	No change to Level of	Centre Design	Ensure all new residential or mixed	All new residential development or the residential component of Mixed Use	

Area	Assessment	Code	use development including residential development achieves acceptable flood immunity. Ensure all new multi-unit dwellings are not subject to unreasonable hazard due to flooding.	development may be higher than adjoining development to the extent required to achieve flood immunity for Interim Residential Flood Level and creek/waterway flooding.	
For infill development for lots smaller than 1000m2 in the Residential Area	No change to Level of Assessment	Subdivision Code			All lots below 1000m2 in size are located entirely above the minimum design levels for flood immunity in accordance with Council's Subdivision and Development Guidelines and this instrument. For infill development for lots smaller than 1000m2 affected by Interim Residential Flood Level and creek/waterway flooding, filling may not be required where a house could otherwise reasonably be constructed to comply with the Subdivision and Development Guidelines and this instrument. *Editor's note: It is expected that flood immunity will be achieved by a combination of limited filling, buildings on stumps or other building techniques. Over reliance on filling can lead to adverse impacts on the amenity of adjoining lands and local drainage.*

Table 2: House Flood Immunity Levels

Type of Flooding	Minimum Ground Level for House Pad after filling (where permitted)	Habitable Floor Level	Non–habitable Areas (i.e. utility areas, garage, laundry and storage room)
Brisbane River	IRFL + 300mm	IRFL + 500mm	50 year ARI + 300mm
Creek or Waterway	100 year ARI + 300mm	100 year ARI + 500mm	100 year ARI + 300mm

Table 3: Local Plan or Neighborhood Plan and Brisbane River Corridor Planning Scheme Policy

Column 1	Column 2
Residential development and the basements of commercial development included in any Local Plan or Neighbourhood Plan Area as described in Chapter 4 of the City Plan.	Where residential development, commercial development (including filling and reconfiguration for the same purpose) or mixed use development including a residential component is regulated in respect of : • Building height of houses, single unit dwellings or Multi-unit dwellings; and or • Flood immunity requirements for Interim Residential Flood Level and creek/waterway flooding the applicable Local or Neighbourhood Plan shall be read as having the following additional intent: 1. Buildings may be higher than 8.5 metres to the extent required to achieve acceptable flood immunity. These buildings must be designed to minimize the height of the side and rear walls in relation to adjoining properties and the overall height of the building. 2. Ensure all new residential development achieves acceptable flood immunity, by complying with tables 4 and 5; or The DFL whichever is the greater level of immunity
Structures in Precinct 1 and 2 – Residential Parkland of the Brisbane River	Building height may vary to the extent required to achieve flood immunity

Table 4: Subdivision and Development Guidelines

Column 1	Column 2
Any development requiring compliance with table A1.1 of the Subdivision and Development Guidelines	The minimum lot level for residential subdivision is IRFL + 300mm Filling of lots affected by Interim Residential flood Level and creek/waterway for flood immunity may produce undesirable outcomes with respect to the streetscape and boundaries to existing lots. Filling may not be required for infill subdivision affected by Interim Residential flood Level flooding where a house otherwise could be reasonably constructed to comply with this requirement. Notes; The Interim Residential Flood Level (IRFL) is the surface of floodwater in one or both of the following flood events, whichever is the highest at any point: 1. Brisbane River - January 2011 event, as mapped in table A 2. The Defined Flood Level (DFL) based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the City Gauge, as mapped in table A. Creek/waterway flooding is all land affected by a 100 year (Average Recurrence Interval) flood event, as mapped in table A. The January 2011 Brisbane River flood event is described in the Queensland Reconstruction Authority "Interactive Reconstruction Map" 2010-2011 Interim Flood Lines. The creek/waterway flood inundation extent and level for a 100 year ARI creek/waterway flood event and the Defined Flood Level based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the City Gauge is described in the database and mapping described as "Flood Flag Maps" and "Floodwise Property Report, Brisbane City Council".

Any development requiring compliance with table A1.2 of the Subdivision and Development Guidelines	The Minimum design floor or pavement levels for Category A is IRFL + 500mm. The Minimum design floor or pavement levels for Category B is IRFL + 300mm. Refer to Table 5 for assignment of these categories Notes; The Interim Residential Flood Level (IRFL) is the surface of floodwater in one or both of the following flood events, whichever is the highest at any point: 1. Brisbane River - January 2011 event, as mapped in table A 2. The Defined Flood Level (DFL) based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the City Gauge, as mapped in table A. Creek/waterway flooding is all land affected by a 100 year (Average Recurrence Interval) flood event, as mapped in table A. The January 2011 Brisbane River flood event is described in the Queensland Reconstruction Authority "Interactive Reconstruction Map" 2010-2011 Interim Flood Lines. The creek/waterway flood inundation extent and level for a 100 year ARI water/creek flood event and the Defined Flood Level based on a Brisbane River Flood Event using a flood height profile of 3.7m AHD at the City Gauge is described in the database and mapping described as "Flood Flag Maps" and "Floodwise Property Report, Brisbane City Council".
Development requiring compliance with table A 1.3 of the Subdivision and Development Guidelines	Refer to Table 5

Table 5: Building Categories

BCA Building Classification*	Development Type & Design Levels	Category (3) (Refer Table 4 for applicable immunity)
Class 1 - 4	Habitable room*	Category A
	Non-habitable room - including garage, patio, private open space and courtyard	Category B
		except for Class 1a building where the 50y ARI + 0.3m applies to Brisbane River.
	Non-habitable part of a Class 2 or Class 3 building - excluding the essential services@	Category B
		Risk management approach to Brisbane River flooding is permitted. (refer Section 4)
	Parking located in the building undercroft of a multi unit dwelling	Category C
	Carport1, unroofed carpark, Vehicular manoeuvring areas	Category D
	Essential electrical services@ of a Class 2 or Class 3 building only	Category A
		Risk management approach to Brisbane River flooding is permitted (4)
	Basement parking entry#	Category C +300mm
Class 5, Class 6, Class 8	Building floor level	Category C
		Risk Management approach to Brisbane River flooding is permitted.
	Garage or carpark# located in the building undercroft	Category C
	Carport1 or unroofed carpark	Category D
	Vehicular access and manoeuvring areas	Category D
	Essential electrical services@	Class 8 - Category C Class 5 & 6 – Category A
		Risk management approach to Brisbane River flooding is permitted (4)

	Basement parking entry#	Category C
Class 7a	Refer to the relevant building class specified in this table	
Class 7b	Building floor level	Category C
		Risk Management approach to Brisbane River flooding is permitted.
	Vehicular access and manoeuvring areas	Category D
	Essential electrical services@	Category C
Class 9	Building floor level - including essential services@	Category A
	Garage or carpark# located in the building undercroft	Category C
	Carport1 or unroofed carpark	Category D
	Vehicular access and manoeuvring areas	Category D
Class 10a	Carparking facility	Refer to the relevant building class specified in this table.
	Shed2 or the like	Category D
Class 10b	Swimming pool	Category E
	Associated mechanical and electrical pool equipment	Category C
	Other structures	Flood immunity standard does not apply.

* Refer Section 2.3.3 of the Subdivision and Development Guidelines for definitions.
@ Essential services include any room used for fire control panel, telephone PABX, sensitive substation equipment including transformers, low voltage switch gear, high voltage switch gear, battery chargers, protection control and communication equipment, low voltage cables, high voltage cables, and lift controls etc.
# Basement carparks must be suitably waterproofed and all air vents, air conditioning ducts, pedestrian access and entry/exit ramps at the carpark entrance have flood immunity in accordance with this table.
1. A shelter for a motor vehicle, which has a roof and one or more open sides, and which can be built against the side of a building.
2. A slight or rough structure built for shelter and storage; or a large strongly built structure, often open at the sides or end.
3. Where a building includes a combination of uses that includes a component of classes 2, 3 or 9, the essential services for that building shall comply with the requirements of the building class with the greatest flood immunity requirement.
4. Where essential services are proposed in a basement below the specified flood immunity level in Table 5 as part of a risk management approach to Brisbane River Flooding or Creek/waterway flooding, the flood immunity of all air vents, air conditioning ducts, pedestrian access, lift shafts and entry/exit ramps at the basement entrance and any other openings into that basement must conform to Category A for Residential development, and the relevant basement entry level of all other uses. This will require a fully watertight basement design to prevent floodwaters entering the basement to ensure flood immunity.

Queensland Reconstruction Authority

Planning for stronger, more resilient floodplains

Part 1 - Interim measures to support floodplain management in existing planning schemes

FITZROY BASIN ASSOCIATION

Banana SHIRE

Australian Government
Geoscience Australia

Queensland Government

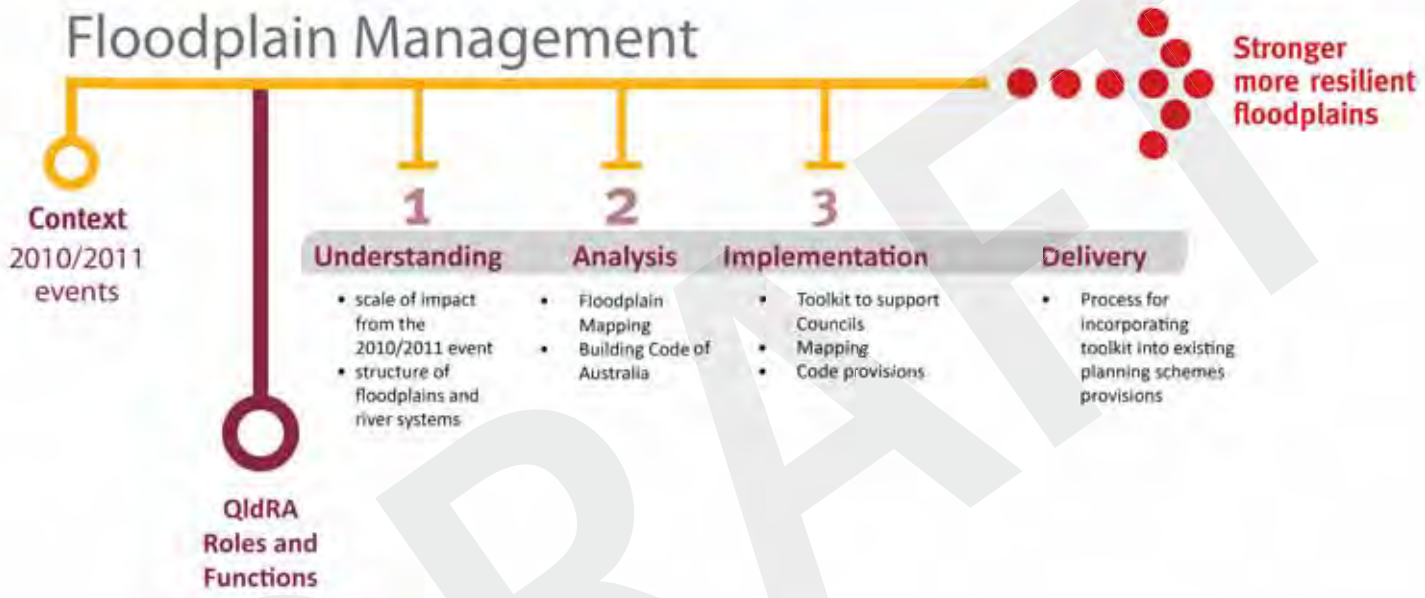
Vision for Queensland's Floodplain Areas

Queensland is a State of meteorological extremes, with floods in particular occurring regularly across many parts of the State. During July to December 2010, this was no better demonstrated as Queensland experienced its wettest spring on record. In total, 13 major river catchments reached their highest recorded peak levels and 210 townships and suburbs were affected by flooding.

Seeing significant change in Queensland's floodplains will be generational – the full implementation of this vision will be seen over time through specific shifts in local land use planning policy and development assessment decision-making that take account of the vulnerabilities of development in the floodplain. However, through interim changes to the way development is addressed in these risk areas, real steps can be taken now to ensure new development in Queensland's floodplains considers and responds to adverse flood events.

The key to ensuring our State copes with these flood events is improving the resilience of our communities.

The Floodplain Management Project



The Authority acknowledges the following organisations that have provided their support to this important program of work:-

- GeoSciences Australia
- Banana Shire Council
- Fitzroy Basin Association
- Bureau of Meteorology
- CSIRO

Key information is provided throughout this Guideline . They are marked with this symbol. They have been provided courtesy of the *Office of the Queensland Chief Scientist's Understanding Floods - Questions and Answers. A full copy of this document can be downloaded from:- http://www.chiefscientist.qld.gov.au/*

Introduction

During Summer 2010/2011 Queensland experienced unprecedented events that resulted in the entire State being disaster activated. Whilst flooding in Queensland is not rare by any means, between November 2010 and April 2011 91% of the State was disaster activated as a result of flooding. The scale of the event of summer 2010/2011 has never before been seen.

There is no doubt that floods and the management of our floodplains is complex. The broader understanding of balancing the role of the floodplain from protection of agriculture and the environment to stimulating economic growth and supporting new population growth is a difficult process to manage. Each has their role and arguably each is as important as the other.

To ensure that Queensland learns from the recent natural disasters the Queensland Reconstruction Authority (the Authority) has partnered with the Department of Local Government and Planning (DLGP) including Building Codes Queensland (BCQ), the Department of Environment and Resource Management (DERM) and the Department of Community Safety (DCS) to deliver a body of work supporting greater resilience and understanding of our floodplains and to better inform and influence the land use planning process.

An outcome of this partnership is the development of this Guideline , entitled ***Planning for stronger, more resilient floodplains***. This is a two part Guideline aimed at raising awareness and represents the start of a journey to improve floodplain management through the land use planning process.

To support this process, the Authority has partnered with Banana Shire Council , a Council who was so deeply impacted by events in December 2010/ January 2011. The journey will involve a number of steps to help improve the management of our floodplains through the land use planning process.

Part 1 - ***Interim measures to support floodplain management in existing planning schemes*** delivers a toolkit that includes interim planning scheme measures and supporting mapping to those Councils who currently do not have any mapping. The mapping has been produced with the support of DERM and the mapping product provided represents an Interim Floodplain Assessment Overlay (Floodplain Maps). The Guideline also identifies a clear implementation path for those Councils who choose to adopt the interim code provisions and mapping.

Part 2 Guideline – ***Standard Planning Scheme Provisions and Flood Study Template*** will provide more detailed floodplain assessment guidance to Councils who are looking to prepare their new Planning Schemes under the *Sustainable Planning Act 2009*.

This toolkit is provided to Council s to raise awareness. It represents the start of a journey to improve the correlation between land use planning and floodplain management.

About this Guideline

This Guideline has been developed to support Councils by offering interim fit for purpose measures to ensure that potential flooding impacts can be considered as part of the development assessment process. The Guideline is divided into four key sections:-

1- Understanding

- scale of impact from the 2010/2011 event
- structure of floodplains and river systems,

2- Analysis

- floodplain management practices
- new national code for construction

3- Implementation

- Interim Floodplain Assessment Overlay
- Interim Floodplain Assessment Overlay Code provisions

4- Delivery

- Proposed amendment process for existing planning schemes

Part 1 principally focuses on providing Councils with an assessment trigger allowing consideration of a development proposal's potential impact on the floodplain. As an interim solution, this Guideline does not offer a comprehensive solution for managing new or existing development in floodplain areas. It does however offer those Councils and indeed applicants, additional scheme provisions to ensure that there is due consideration as to what and how the development proposes to respond to a potential flood impact. This toolkit does not replace or override any existing engineering development standards, such as local road design manuals or the Queensland Urban Drainage Manual. Critically, it also does not replace or diminish the need for disaster warning and response plans or evacuation procedures. Even after adopting the recommendations in this Guideline , people should not become complacent to the risk of flood.

Objectives

The main objectives of the Guideline are to:

- Promote a greater understanding of floodplains and their management
- Promote a greater correlation between floodplain management and land use planning
- Provide those Councils with an information toolkit which they can adopt in a timely manner to provide interim measures for development assessment
- Support a more resilient built form outcome in flood prone areas through additional interim planning scheme measures.

What will Part 2 contain?

Queensland is in a unique position as the majority of Councils are resolving to prepare their new SPA compliant planning schemes. As Part 1 is an interim measure supporting existing planning schemes, Part 2 will build upon Part 1 to work towards a consistent approach of floodplain management into the new planning schemes. To support this approach, Part 2 will address the following matters:

- Fit for purpose flood study template to help inform the strategic planning process developed in partnership with CSIRO and Bureau of Meteorology.
- Standardised floodplain management provisions; and
- Advice on transition strategies for land uses, zoning recommendations and other key land use policy matters which effectively translates flood studies and floodplain management plans into land use plans using the Queensland Planning Provisions (QPP).

1 UNDERSTANDING

Overview of events

During July to December 2010, extremely heavy rainfall was experienced across large parts of eastern Australia, with Queensland experiencing its wettest spring on record. This rain pattern was influenced by the strongest La Niña effect in the Pacific Ocean since the mid-1970s and as a result, Queensland's catchment areas were significantly saturated before major rain events occurred during November 2010 to January 2011.

- On 25 December 2010, the Category 1 Tropical Cyclone Tasha crossed the Queensland coast between Gordonvale and Ravenshoe.
- Pre-existing weather conditions and sustained high rainfall between 23–28 December 2010 resulted in flooding in many parts of central and southern Queensland.
- On 29 December 2010 - Theodore was the first town to be fully evacuated in the history of Queensland. Condamine became the second township and was evacuated twice.
- On 10 January 2011, the townships of Maryborough, Bundaberg and Gympie were impacted by rising floodwaters, leading to the widespread inundation of houses and businesses. Additionally, the Bruce Highway was cut in several locations.
- On 10 January, exceptionally heavy rainfall intensified in Toowoomba, culminating in unprecedented flash flooding within Toowoomba's Central Business District.
- On 10 January 2011, a further torrent of water hit the Lockyer Valley where the towns of Grantham, Murphy's Creek, Postman's Ridge, Withcott and Helidon were severely affected.
- On 11 January 2011 heavy rain contined in the Brisbane River catchment with flooding of Laidley and Forest Hill.
- On 12 January 2011, the Bremer River in Ipswich had reached 18 metres while some low-lying Brisbane suburbs had already started to be inundated.
- On 13 January 2011, the Brisbane and Bremer Rivers peaked at 4.46 metres and 19.5 metres respectively. These were lower than

Flooding snapshot 2010/2011

210 towns and suburbs were affected by flooding

13 river catchments recorded their highest peak levels

Total evacuation of a township, Theodore and Condamine (twice)

Critical infrastructure was affected

Rockhampton airport was closed

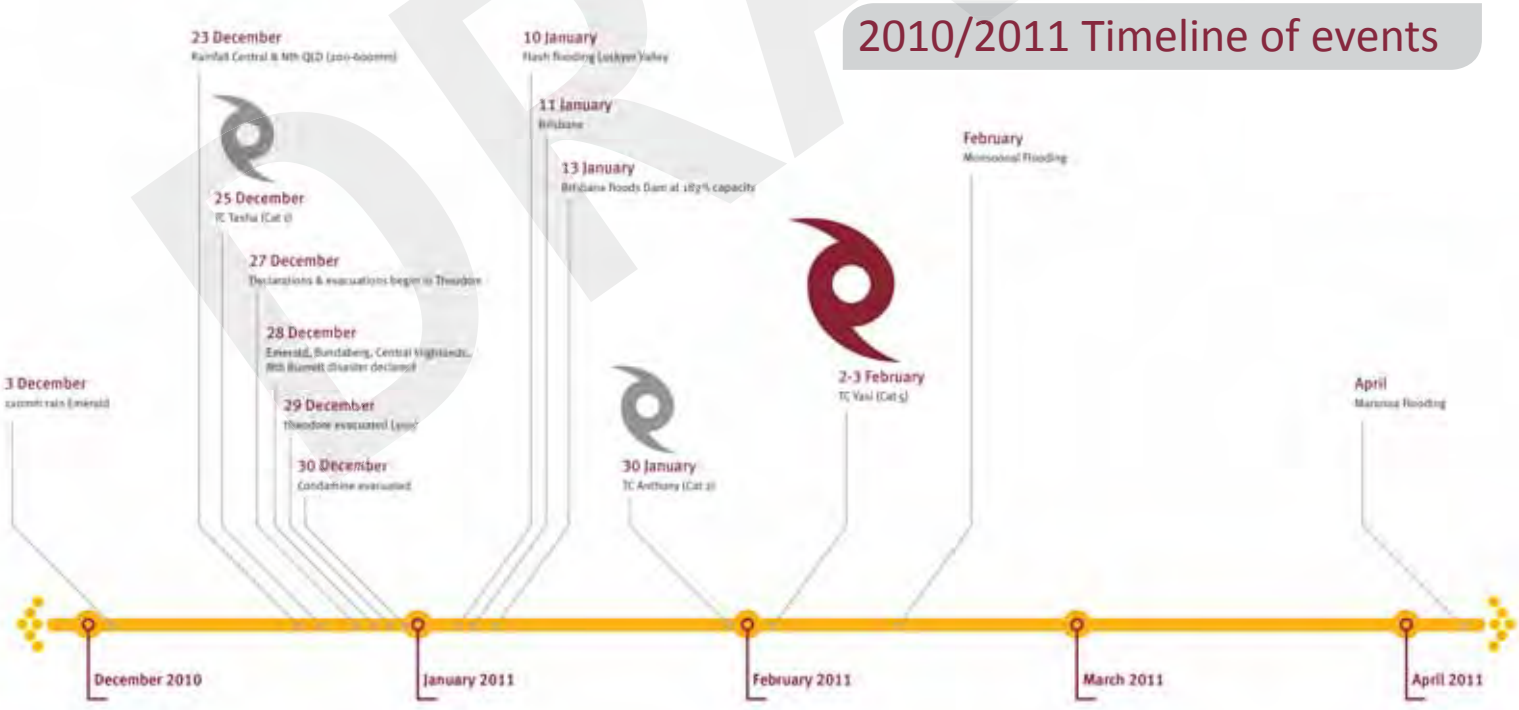
Water purification systems were flooded hampering clean up efforts and access to safe drinking water

19,000km² of road requires rebuild or repair

Damage bill from flooding impact is $5.8B

- On 30 January 2011, Category 2 Tropical Cyclone Anthony crossed the coast close to Bowen, battering the coastal strip between Townsville and Mackay, depositing significant rainfall on already saturated areas.
- On 3 February 2011 Category 5 Severe Tropical Cyclone Yasi struck. The largest severe cyclone to hit Queensland in recent times, it comprised a damaging core some 400 kilometres across with associated severe weather activity stretching 1000 kilometres of coastline, including a storm tide of over 5 metres peaking near Cardwell.

2010/2011 Timeline of events



Establishment of the Queensland Reconstruction Authority

The Authority was established through state legislation on 21 February 2011 as a statutory authority for the efficient and effective coordination of the reconstruction effort.

The Authority's mission is to reconnect, rebuild and improve Queensland, its communities and economy. This recognises that reconstruction starts house by house, street by street, community by community, industry by industry and results in a more resilient Queensland.

One of the core functions of the Authority is to respond to the disaster events of summer 2010/2011 and address both short term and longer term goals. The Authority has recognised a need for a greater understanding of the management of our floodplain specifically as it relates to land use planning outcomes.

Flooding and floodplains

Australia's floodplains are the commercial, social and ecological arteries of the nation. As such they constitute a national asset: an asset subject to damage when floods occur.

Most of our towns and cities are in fact located on floodplains, both inland and coastal. This is an historical fact, principally for reasons associated with water supply, transportation, waste disposal, advantageous points for river crossings, access to productive soils or recreation purposes. Hence, these towns are subject to flooding.

Over time uses in these areas become entrenched and in more recent times lifestyle, mobility and consumer sentiment has meant that these areas remain used for a range of commercial, social and ecological purposes. While these uses remain, so too will the potential risks when floods occur.

Put simply, if we are to use floodplains for these purposes, we need to acknowledge and plan for flood in a way that provides resilience for our built form and development and safety and well being for our communities and individuals.

In Australia, flooding can be caused by four different mechanisms: heavy rainfall, storm surge, tsunami and dam failure. Rainfall and storm surge flooding create the most common and significant threats to social and economic well being of flood-prone communities. Tsunami and dam failure can result in catastrophic damage and likely loss of life. The probability of this type of flooding in Australia is low.

Thus, as devastating as recent events have been, they are not unique: 77 floods were recorded in Australia in the last 35 years of the 20th century; eight major floods were recorded in Australia in the 19th century and six in the first decade of the 21st century. And nature will undoubtedly continue to surprise us into the future.

Floodplains are generally the more fertile areas of the continent. A significant proportion of Australia's agricultural output is produced on floodplains including irrigated agriculture. Regular flooding of these areas enhances agriculture by increasing soil moisture.

A floodplain is an essential component of a catchment, and floodplain management is a critical part of overall catchment management.

Cost of flooding

In Australia, floods are the most expensive type of natural disaster with direct costs for the period from 1967 to 2005 estimated at an average of $377 million per year (calculated in 2008 dollars).

Until recently, the most costly year for floods in Australia was 1974, when floods affecting New South Wales, Victoria and Queensland resulted in a total damage bill in today's figures of $2.9 billion. The Queensland Government estimates costs for the 2011 floods will exceed this figure with the damage to local government infrastructure estimated at $2 billion and the total damage to public infrastructure across the State at $6.8billion. Conversely and as discussed in section xx flooding should be the most manageable

History of floodplain management

Floodplain management in Australia has evolved through four successive phases:-

1. structural works
2. planning
3. flood emergency management
4. all-embracing management

During the structural phase, predominantly in the 1970s, structural works (typically levees) were used to protect existing properties at risk. Little consideration was given to the use of levees and their potential impact on the environment, risk management planning or even land use planning. However, in 1974, a series of severe floods in New South Wales, Victoria and Queensland caused widespread and significant damage. The aftermath was that a better correlation and regulation of levees was required.

In the 1980s and 1990s the importance of flood emergency management was brought into focus predominantly by the New

What factors contribute to floods?

Rainfall is the most important factor in creating a flood, but there are many other contributing factors. When rain falls on a catchment, the amount of rainwater that reaches the waterways depends on the characteristics of the catchment, particularly its size, shape and land use. Some rainfall is 'captured' by soil and vegetation, and the remainder enters waterways as flow. River characteristics such as size and shape, the vegetation in and around the river, and the presence of structures in and adjacent to the waterway all affect the level of water in the waterway.

South Wales Bogan River flood in April 1990 which required the forced evacuation of the town of Nyngan.

Finally, from the early 1990s the importance of an all-embracing approach to floodplain management has been apparent. States/ Territories are far more advanced than previously in an integrated approach to floodplain management.

So what exactly is floodplain management?

The objectives of floodplain management as determined by the Standing Committee on Agriculture and Resource Management (SCARM) are to:

- limit to acceptable levels the effect of flooding on the well-being, health and safety of flood-prone land, individuals and communities
- limit to acceptable levels the damage caused by flooding to private and public property
- ensure that the natural function of the floodplain - to convey and store floodwaters during a flood - is preserved
- encourage the planning and use of floodplains as a valuable and sustainable resource capable of multiple, but compatible, land uses of benefit to the community.

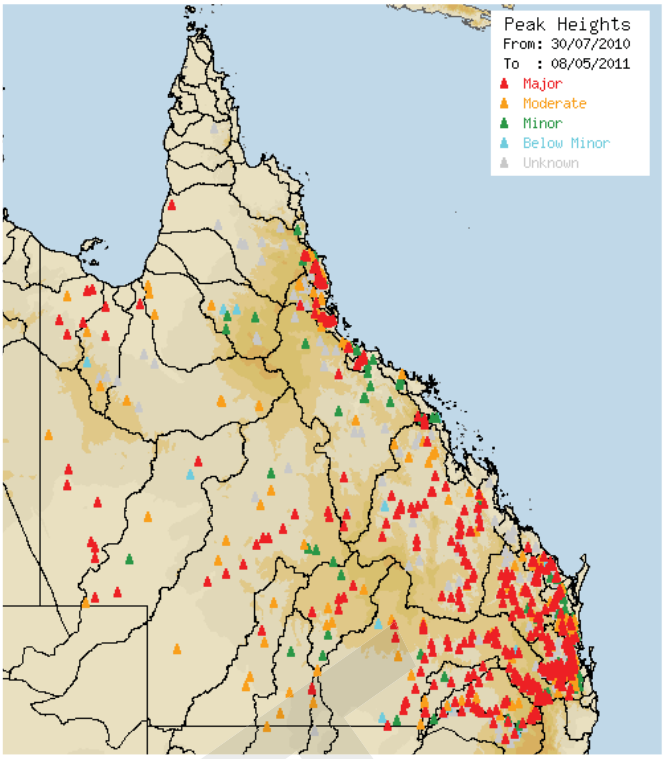


Figure 1 - Peak heights during the 2010/2011 summer event. Source: *Bureau of Meteorlogy1*

Photo 1:- Flooded road. Source: *Michael Marston*

Six major floods occurred in Brisbane between 1885 and 1910, followed by more than 60 years without a major flood

How do we estimate the chance of a flood occurring?

Understanding the chance of different sized floods occurring is important for managing flood risk. The chance of a flood event can be described using a variety of terms, but the preferred method is the Annual Exceedance Probability (AEP). A flood with a 1% AEP has a one in a hundred chance of being exceeded in any year. Currently, the 1% AEP event is designated as having an 'acceptable' risk for planning purposes nearly everywhere in Australia. However, good planning needs to consider more than just the 1% AEP flood.

Size of Flood (Chance of occurence in any year) ARI/ (AEP)	Probability of Experiencing the Given Flood in a Period of 70 Years	
	At least once	At least twice
1 in 10 (10%)	99.9%	99.3%
1 in 20 (5%)	97.0%	86.4%
1 in 50 (2%)	75.3%	40.8%
1 in 100 (1%)	50.3%	15.6%
1 in 200 (0.5%)	29.5%	4.9%

Probabilities of experiencing a given size flood once or more in a lifetime.
Modified from Floodplain Development Manual: the management of flood liable land, NSW Government, 2005

Understanding the River Systems

Understanding Australia's rivers systems is integral to developing an appropriate interim land use planning and mapping solution. This exercise has been instrumental to guide and direct how to best map, plan and therefore manage appropriate land use responses.

In Australia there are twelve drainage divisions (Figure 1). Drainage divisions do not stop at state or territory boundaries and they continue until they terminate at the sea, ocean or inland lake.

Queensland hosts part of five (5) of these drainage divisions including:

- Northeast Coast
- Gulf of Carpentaria
- Murray Darling Division
- Bulloo – Buncannia Division
- Lake Eyre Division

Within each drainage divison there are several major river basins. Like the national drainage division, there are no river basins in Queensland that correlate with Local Government Areas. Therefore the majority of Local Government Areas will contain several major river basins. There are 246 major river basins nationally, 75 of which are in Queensland (Figure 2).

- Northeast Coast Division – 46 River Basins
- Gulf of Carpentaria Division – 19 River Basins
- Murray Darling Division – 5 River Basins
- Bulloo – Buncannia Division – 1 River Basin
- Lake Eyre Division – 4 River Basins

Major river basins usually comprise multiple rivers that converge on the river after which the river basin is name. For example, the Fitzroy River Basin includes the prominent rivers of the Dawson and Nogoa, which drain into the Fitzroy River. Therefore each river basin is usually comprised of one or more sub-basins. Again, for example, the Fitzroy River Basin is further divided into the following sub-basins:

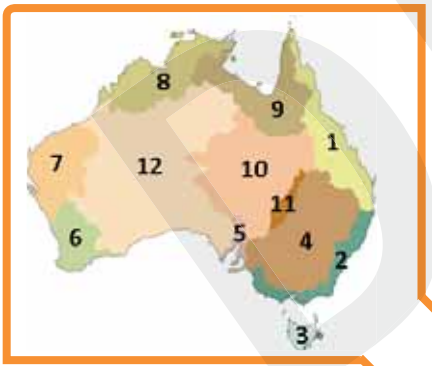
- Issac River Sub-Basin
- Nogoa River Sub-Basin
- Comet River Sub-Basin
- Dawson River Sub-Basin
- Mackenzie River Sub-Basin
- Fitzroy River Sub-Basin

Just like the major river basins, sub-basins do not correlate with Local Government Area boundaries. Figure 3 shows the Dawson River Sub-Basin in context of Banana Shire Council LGA boundary.

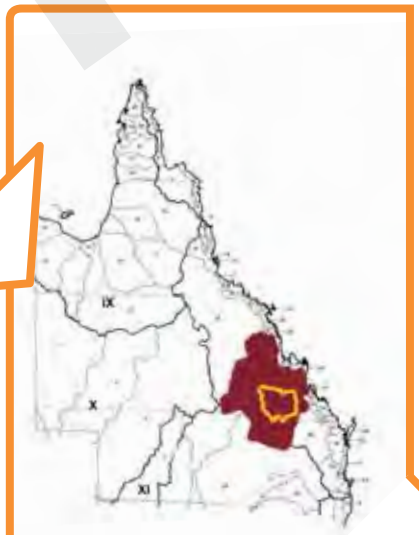
By understanding how our major river systems are governed, it can help in identifying the best way to adopt a standardised approach to land use planning provisions. Given the importance of what happens within a sub-basin it is recommended that the best management of floodplains is for planning to be undertaken at a sub-basin level. This means that several LGAs will have more than one sub-basin within its boundaries and to varying extents and that Floodplain Management Plans show be prepared as a collaborative exercise. This issue will be further addressed in Part 2 - ***Standard Planning Scheme Provisions and Flood Study Template.***

Local Government boundaries do not correlate with river systems.

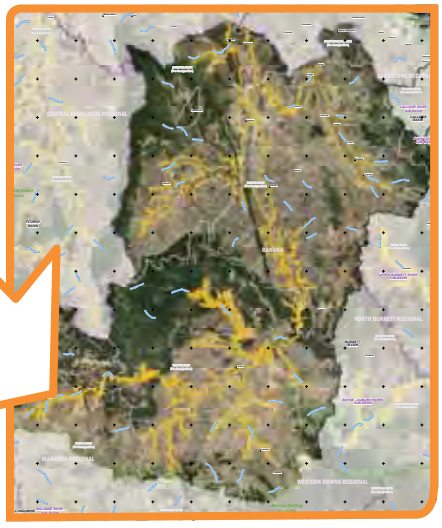
Drainage Divisions



River Basins



Sub-basins



Dawson River - Sub-basin

Drainage Division	1 - NorthEast Coast
River Basin	30 - Fitzroy
Sub-basin	Dawson River
Applicable LGAs	Banana Shire
	Central Highlands
	Maranoa Regional
	Western Downs Regional
	Rockhampton Regional
	Woorabinda Aboriginal

2 ANALYSIS

Australia, and in particular Queensland, is prone to a long list of natural hazards, including flooding, cyclones, severe storms, bushfire, landslide and earthquakes.

The recent flood events seen across the State have highlighted the importance of considered land use planning that responds to the risks presented by flooding in particular.

Understanding how our rivers systems work here in Queensland acknowledges that an integrated approach to land use planning on floodplains is required to bring together the diverse issues and stakeholders that affect or are affected by floodplain management. This approach takes flooding behaviour, flood risk and flood hazard into account, along with all other relevant planning factors.

The end product of this process is a floodplain management plan that facilitates the use of the floodplain for appropriate purposes, that limits flood hazard, and damage to socially acceptable levels, enhances the waterway and floodplain environment and fosters flood warning, response, evacuation, clean-up and recovery in the onset and aftermath of a flood.

Floodplain Management in Australia - Best Practice Principles recommends the adoption of an approach to floodplain management at a total catchment (sub-basin) level beyond the boundaries of a LGA.

This sub-basin perspective is needed in order to manage effectively the result of existing development and the cumulative effects of future development on stormwater and mainstream flooding. This perspective includes both the upstream and downstream implications of proposed land use developments and floodplain management activities.

This approach will require collaboration from many stakeholders to support the ultimate goal of integrated management of our floodplains. This needs approach will extend beyond the development assessment process.

To support this thinking the Authority together Department of Environment and Resource Management (DERM) commenced a mapping exercise to propose an area within which an LGA may wish to test a range of activities for compatibility to withstand the affects of flooding.

The dataset to inform the mapping product to be identified as *Interim Floodplain Assessment Overlay* (floodplain maps) was developed using the following overall principles:

- suitability for a Statewide approach
- a consistent approach
- repeatable if more accurate data is available in the future
- evidential and justifiable

The following is an overview and summary of each dataset used in the compliation of the floodplain maps:-

Land zone 1

general term:- estuarine (tidal flats and beaches)

Quaternary estuarine and marine deposits subject to periodic inundation by saline or brackish marine waters. Includes mangroves, saltpans, off -shore tidal flats and tidal beaches. Soils are predominantly Hydrosols (saline muds, clays and sands) or beach sand. Soils are predominantly Hydrosols (saline mud, clays and sands) or beach sand.

Land zone 3

general term:- alluvium (river and creek flats)

Quaternary alluvial systems, including floodplains, alluvial plains, alluvial fans, terraces, levees, swamps, channels, closed depressions and fine textured palaeo-estuarine deposits. Also includes estuarine plains currently under fresh water influence, inland lakes and associated dune systems (lunettes). Excludes talus slopes, colluvial deposits and pediments.Includes a diverse range of soils, predominantly Vertosols and Sodosols, also with Hydrosols in higher rainfall areas.

SALI Soil Limitation Mapping

Refers to a soil type which has a limitation of flooding. Soil qualities and limitations are properties that can be assessed on an individual soil material basis and can affect the viability and sustainability of land uses.

Contours

Contour data with 10 metre vertical intervals available over the whole State has been used. In some selected cases to aid the visual interpretation, other available contour information has been used.

What are Land Zones?

Land zones represent major differences in geology and in the associated landforms, soils, and physical processes that gave rise to distinctive landforms or continue to shape them (Sattler and Williams 1999). Land zones are generally derived by amalgamating a range of geological, land system and/or soil mapping units at 1:100 000 to 1:250 000 scale. Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland. Version 3.1. Updated September 2005. Queensland Herbarium

Stream Orders

Starting at the headwater the stream is assigned number one to be made 1st order. As several 1st order streams converge the resultant stream becomes 2nd order. Two 2nd order streams converging form a 3rd order, etc. This is known as the Strahler Method. The number of orders in Queensland's sub-basins vary. The Dawson River sub-basin for example is classified to a 9th order. Flooding can occur in the headwater streams (ie. 1st order), but is more likely to be significant in higher order streams. For each sub-basin the appropriate stream orders have been selected to use in developing the Interim Floodplain Assessment Overlay.

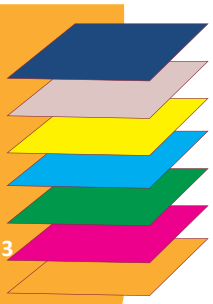
Imagery

Aerial imagery across the State is captured using different modes. The most common is through Landsat 5. Landsat 5 is the fifth satellite of the Landsat program. It was launched on March 1, 1984, with the primary goal of providing a global archive of satellite images. The program is managed by United States Geological Survey, and data from Landsat 5 is collected and distributed from the USGS's Center for Earth Resources Observation and Science. Australia like many countries has an agreement with the USGS where new satelitte imagery is downloaded every 16 days and provided to Geoscience Australia. The imagery has a pixel resolution of 30 metres. In addition to Landsat more detailed aerial photography captured at the time of a flood over a township has been used where available. During the summer 2010/2011 events around 100 towns were captured with high resolution aerial imagery.

This is the largest mapping exercise currently underway in Australia. The mapping has been undertaken at a sub-basin level. Many LGAs may have more than one sub-basin within their boundaries.

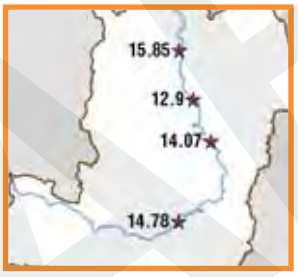
The Interim Floodplain Assessment Overlay for the Dawson River Sub-basin was developed using:-

- **10 metre contours**
- **Stream orders 5 - 9**
- **Landsat imagery**
- **Aerial photography taken at or near flood peak**
- **Flood extent for 2011 generated from aerial photography**
- **Pre-clear vegetation mapping of Landzones 1 & 3 combined with soil flooding limitation mapping**
- **Gauging stations**



Contours

Landsat

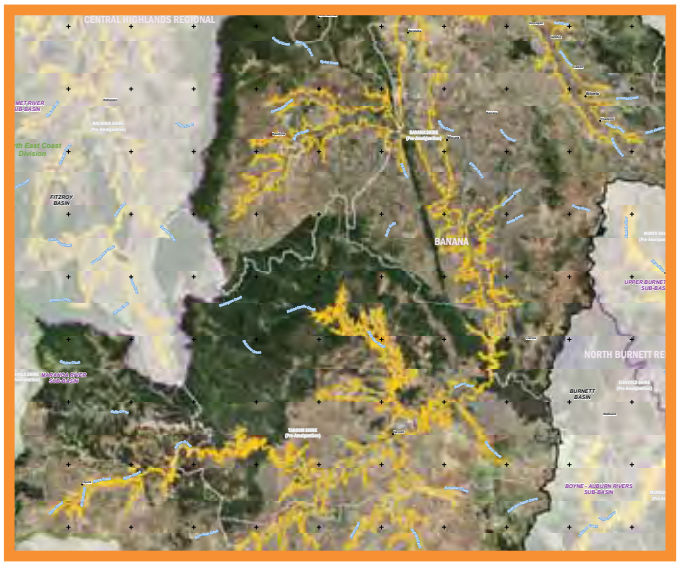


Gauging Heights

Stream Orders

Pre Clear Mapping

Aerial Taken - Theodore



3 IMPLEMENTATION

Planning for stronger, more resilient floodplains is a journey towards fulfilling better floodplain management through the land use planning process. Whilst not all Council s require assistance some do and may benefit from the use of this Guideline .

Floods are the most manageable of all natural disasters. Unlike other natural disasters, generally there is an understanding of where floods will occur and estimates of the likelihood of flooding, flood behaviour and the consequences of flooding to a degree of reliability. In contrast, Severe Tropical Cyclone Yasi left questions being asked as to where it would ultimately make landfall to only hours before the event. Therefore, through a continued better understanding of flooding through analysis and building upon lessons learnt, improvements can be made to how we plan for and respond to strengthen resilience into regions, towns, places and to the built form.

New Construction Standards

The Australian Building Codes Board has developed a draft national Standard for Construction of Buildings in Flood Hazard Areas (draft Standard), which is scheduled to be introduced in the 2013 version of the Building Code of Australia (BCA) from 1 May 2013, following appropriate consultation. The scope of the draft Standard is limited to class 1 (houses and townhouses), class 2 (units and flats), class 3 (hotels, motels and backpackers), class 4 (caretakers dwelling), class 9a (health care) and class 9c (aged care) buildings. It provides specific performance requirements and deemed-to-satisfy (DTS) provisions for the design and construction of new buildings in a flood hazard area, as designated by the relevant authority, for example Local Government.

The Department of Local Government and Planning is proposing early adoption of the draft Standard as a new mandatory part of the Queensland Development Code (QDC). Additional non-mandatory provisions, which are currently outside the scope of the draft Standard, are also proposed to be included in the QDC to be adopted by Local Governments on a voluntary basis through a planning scheme, Temporary Local Planning Instrument, or by resolution. It is proposed that the new QDC will apply to new buildings and additions to existing buildings, but not to other building alterations.

However, unless there is appropriate mapping to indicate a building is within a flood prone area, these new provisions may not be triggered.

Temporary State Planning Policy

To assist in this process the Authority has lead with the Department of Local Government and Planning (DLGP) the implementation of a new Temporary State Planning Policy (TSPP)- ***Planning for stronger, more resilient floodplains*** which creates the statutory mechanism by which a Local Government may look to adopt the Interim Floodplain Assessment Overlay as part of their existing planning scheme.

The TSPP suspends the effect of paragraphs A3.1 and A3.2 of Annex 3 of *State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* which identifies they process by which a Local Government may designate a Natural Hazard Management Area (Flood) (NHMA).

The TSPP therefore gives effect to options for how a Local Government may choose to designate a NHMA (Flood) including the option for the floodplain maps to be adopted either in the current form provided by the Authority or as amended by the Local Government following a visual assessment.

Interim Toolkit supporting the TSPP

Part 1 of this Guideline provides a voluntary interim toolkit which consists of: .

- Interim Floodplain Assessment Overlay Maps (Floodplain Maps) prepared by the Authority in both digital and hard copy; and the
- Interim Floodplain Assessment Overlay Model Code (Model Code).

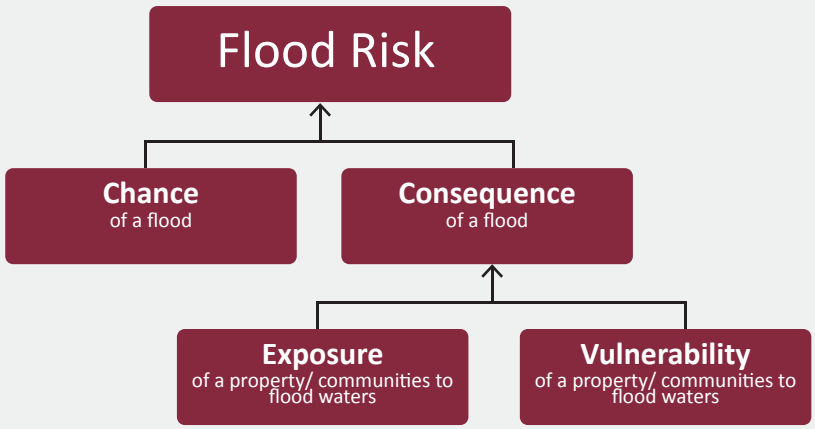
It is acknowledged that not all local governments require the interim tool. Council s with adequate provisions and mapping will not need this Guideline . The response needs to be fit for purpose recognising the differing needs of each local government. However, even for those Council s who feel that there are adequate provisions within the existing scheme, the floodplain maps may help to:

- inform the strategic planning process for the preparation of their new QPP compliant planning scheme; and
- identify an area for the purpose of triggering the relevant building assessment provisions, if their existing flood mapping does not already perform this function.

For those Council s wishing to adopt the interim provisions, the Floodplain Mpas can be incorporated into the existing Planning Scheme as a new chapter titled “Interim Floodplain Assessment Overlay” which will include the floodplain maps which trigger assessment of Assessable Development against the model code. Further advice in relation to the interim tool and how it can be implemented is provided in Part 4 of this Guideline .

How do we manage flood risks?

Flood risk includes both the chance of an event taking place and its potential impact. Land use planning informed by floodplain management plans can reduce risk for new development areas. Flood risk is harder to manage in existing developed areas; however modification measures such as dams or levees can change the behaviour of floodwaters. Similarly, property modification measures can protect against harm caused by floods to individual buildings, and response modification measures help communities deal with floods.



Components of Flood Risk

The floodplain mapping provided (as well as an adopted flood level) can also be used by Council s to trigger the relevant building assessment provisions for construction of buildings in flood hazard areas. This applies to both the current suite of building provisions and those soon to be implemented through the proposed amendments to the Queensland Development Code.

It is also important to note the floodplain maps is not proposed to alter the level of assessment for development within the Overlay Area; it simply utilises the existing levels of assessment prescribed in the Table of Development for an area. Therefore, the adopted floodplain maps will be used as trigger for Assessable Development to be assessed against the model code.

Mapping

The Interim Floodplain Assessment Overlay (Floodplain Maps) are being produced across the State. As per the Analysis section of the Guideline the Floodplains Maps have been derived from from overlaying available state-wide information sources, including:

- The best available drainage location information (typically 1:100,000 or 1:250,000)1
- A standard drainage classification system to determine similar orders of importance
- The best available contour information (typically 10 metre contours)2
- The best available satellite imagery (typically Landsat 5)

Where other datasets exist and can aid visual interpretation, the following has also be used:

- Datasets that provide evidence of historical flooding.
- Interpreted or actual flood information from 2010/2011 events
- DERM gauging station information http://watermonitoring.derm.qld.gov.au/host.htm

Other data layers as available over the various drainage basins or river sub-basins to provide further informative information for visual interpretation:

- - Pre-clear Vegetation Mapping of Landzone 3 (Alluvium) and Landzone 1 Estuarine) and SALI Soil Flooding Limitation Mapping

The product will be provided to local authorities (subject to any licensing conditions under which the department acquired the data) to assist LGAs in the visual assessment of the accuracy of the maps.

The product has been produced at a 1:50,000 scale to ensure that the cadastre is identified ensuring that individual properties or parts of properties can be determined as being located within Interim Floodplain Assessment Overlay area.

A programme of mapping is being developed across the State. By October 2011 xx of the State will be mapped representing xx of the population. By mid 2012 the entire State will be captured.

[1] Positional accuracy of this data is typically 1mm at map scale (eg 100m +/- at 1:100,000 scale)

[2] Horizontal contour accuracy is typically +/- half a contour interval (relevant to gradient at any given location)

Example:- Interim Floodplain Assessment Overlay for the town of St George

Example: Interim Floodplain Assessment Overlay for the town of Biloela

Mapping will also available at www.qld.gov.au/floodcheck

The mapping product will be provided to Councils as:

- **a Mapbook (a series of A3 Mapsheets covering the whole sub-basin) in both electronic and hard copy format;**
- **digital dataset compatible with ArcView and MapInfo and**
- **interactive lot and plan search**

Planning scheme provisions - Model Code

To support the overlay maps an Interim Floodplain Assessment Overlay Model Code (Model Code) can be applied in assessing any assessable development on land wholly or partially within the area shown on the Interim Floodplain Assessment Overlay.

A Model Overlay Introductory Statement which sets out the Intent for the Overlay Area is provided in Schedule 1 of this Guideline . The Model Code itself is provided in Schedule 2.

Council may decide on the types of development to which the Model Code applies.

The purpose of the code is to manage built form outcomes in the floodplain so that risks to life and property during future flood events are minimised, and to ensure that development does not increase the potential for flood damage on site or any other property.

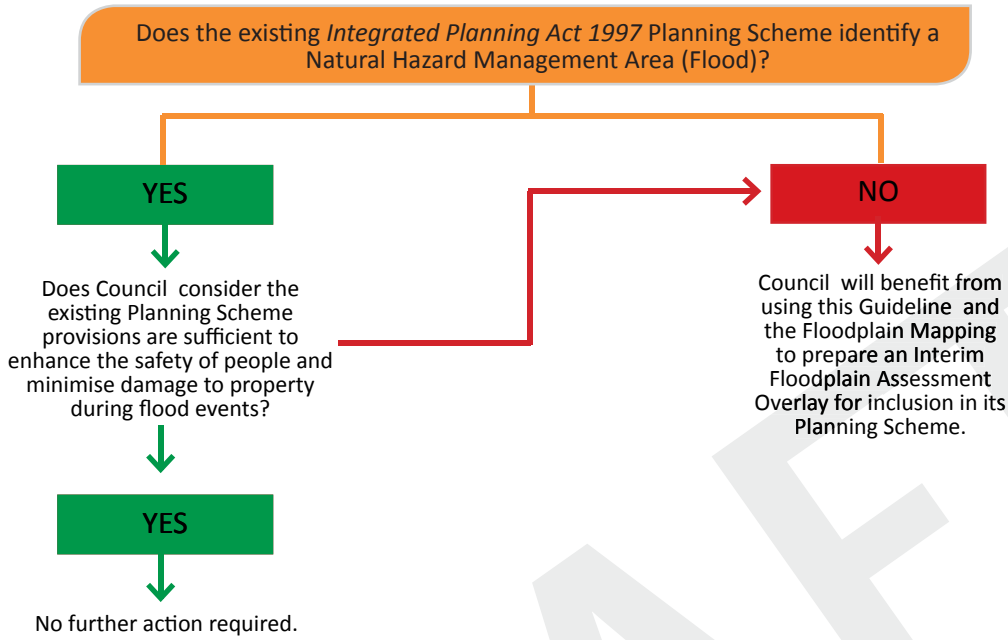
For clarity and consistency, all development-related terms defined elsewhere in other Queensland legislation (such as the *Sustainable Planning Act 2009, Dangerous Goods Safety Management Act 2001*) have the same meaning in this Guideline and its Schedules.

To demonstrate the practical application of the Overlay in a development assessment context, a number of case studies are provided in **Appendix 1** of this Guideline . This identifies how certain types of assessable development would be assessed against the Model Code.

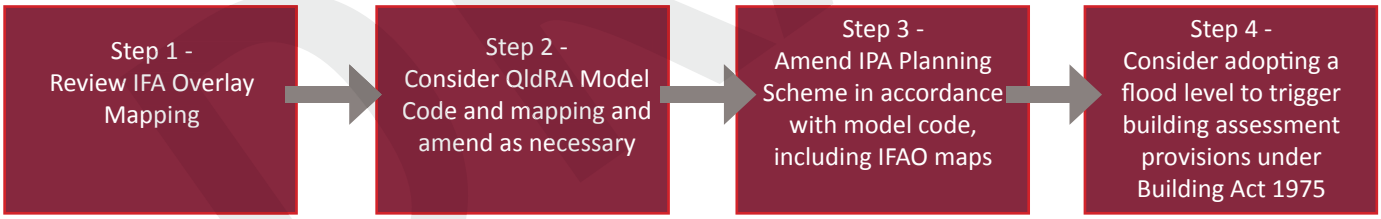
The traditional 'Queenslander' style home was designed to allow the cool breezes to circulate through the house in the hot summer and to let flood waters underneath.

4 DELIVERY

The following flow chart has been prepare to help Council 's decide if the interim solution should be considered and adopted within the existing planning scheme.



If Local Government's decide this Guidelines are applicable to their local government area, Councils can follow the steps below to adopt an Interim Floodplain Assessment Overlay within their existing Planning Scheme.



Step 1 Interim Floodplain Assessment Overlay

The Authority will provide all local governments with a copy of the Floodplain Maps for the relevant Local Government Area. Whilst the mapping has been developed using the best data available to the Authority, more detailed data, information, local knowledge and records may be readily available to local governments. Accordingly, while Local Governments can choose to adopt the Floodplain Mapping in its current form, the Authority strongly encourages local governments to consider the Floodplain Mapping and ascertain whether it identifies all of the areas within the local government area that are potentially subject to flooding.

Local governments can amend the Floodplain Mapping prior to inclusion in a planning scheme.

In particular, it is important to recognise that larger, rarer floods may be experienced which exceed the adopted floodplain maps, which might require further consideration by Council s particularly if more detailed local information is available. In reviewing and adopting the IFA Overlay, Council should have regard to the:

- the extent of inundation experienced during the summer 2010 / 2011 flood event; and
- the extent of inundation experienced during other flood events; and
- other available data sources such as historic records, flood studies or flood plain modelling.

Step 2 The Model Code

The IFA Model Code has been prepared by the Authority to provide a standard tool for Assessment Managers to ensure suitable measures are adopted by development in areas potentially at risk of flooding.

The IFA Code may be adopted without amendment by Council s as an interim measure for floodplain management. This will be the case particularly for those Council s who currently have no planning scheme measures to regulate flooding or floodplain management in their existing planning schemes.

Alternatively, Council may decide to enhance the Model Code with additional or alternative provisions that better reflect their area's local topographical or hydrological circumstances prior to adoption. This is particularly relevant for those Council s that may already have an assessment code in their planning schemes that deals with flood hazard.

As the Code has been oriented to local government areas without flood mapping, Council s with existing planning scheme provisions related to flood may in fact have more robust planning provisions than the Model Code for the assessment of flood hazard. It would be prudent for those Council s to consider how the Model Code would integrate into that existing suite of flood hazard provisions. It will be important for those Council s to ensure that the adoption of the Model Code does not in fact reduce the capability of Council s to assess and decide development applications in flood hazard areas.

Step 3 Amending the Planning Scheme

The IFA Overlay can be incorporated into the planning scheme as a new chapter titled "Interim Floodplain Assessment Overlay", which includes the IFA Overlay Maps that trigger assessment of Assessable Development against the IFA Code.

To adopt these measures and incorporate them into the planning scheme, Council must resolve to:

1. Adopt the Interim Floodplain Assessment Overlay Maps;
2. Adopt the Interim Floodplain Assessment Code; a
3. Adopt the IFAO Map as a NHMA (Flood); and
4. Make an Amendment to the Planning Scheme to include:
   - A new chapter titled "Interim Floodplain Assessment Overlay" including the Interim Floodplain Assessment Overlay Maps and the Model Code; and
   - The Model Statement (See Schedule 1) within the Introductory Chapter describing the application of the Interim Floodplain Assessment Overlay Maps and Model Code.

The amendment to the Planning Scheme must be undertaken in accordance with the Guideline prepared by the Minister under Section 117 of the Sustainable Planning Act 2009 (Making and Amending a Local Planning Instrument).

Minor Vs Major Amendment

It is intended that the amendment to the Planning Scheme will be classified as a "Minor Change" where the scope of the amendment is limited to those outlined in this Guideline . Accordingly, following the consultation period of this Guideline , those Council wishing to adopt the amendments are likely to be able to do so following the Minor Change process which can be quickly incorporated into the Planning Scheme.

Where a Council seeks to undertake further amendment to the Planning Scheme beyond the scope of those outlined in this Guideline the amendment will be classified as a "Major Change."

Accordingly, the Amendment to the Planning Scheme must follow the Major Change process before being adopted into the Planning Scheme.

Step 4 Adopting a Flood Level

Council s may consider adopting a flood level based on historical highest recorded flood levels (or other level that may be more locally appropriate) across their local government area to give greater regulatory coverage to development in flood-prone areas. The adoption of a flood level, and the adoption of the Overlay mapping, will trigger the relevant building assessment provisions under the Building Act 1975 related to flooding – the proposed 'deemed to satisfy' QDC amendments in particular have very detailed flood hazard building requirements that specifically relate to building in relation to set habitable room levels.

Therefore, Council's may adopt a flood level (plus a 'freeboard' level – the additional height between the flood level and the level of habitable rooms) in order to set a 'habitable floor level' that can be used to assess building applications against the proposed 'deemed to satisfy' provisions of the QDC. This will ensure that all structures within the Overlay area will be built to the latest standards.

If a flood level is not or cannot be adopted, it is still important to adopt the Overlay mapping as this mapping will still trigger the relevant building provisions. In this case, building applications will need to prove, through engineering first principles, that structures are fit for purpose in these flood areas.

The following table may assist in determining how to adopt a level within a planning scheme area.

DATA	APPLICATION
Historical Flood Data	Where historical flood data exists, it may be possible to use this information to identify the IFA Overlay. Historical data may include: • formally recorded gauge height records for a number of floods; • formally surveyed peak flood levels throughout the area of interest; • photographs of a historical flood; • 'high-water' marks recorded on public or private property; and • interviews with long-term residents.
Existing Flood Studies	A number of river systems in Queensland have been the subject of a flood study. In many cases, these studies were either limited in their scope or performed a number of years ago. Ideally, they should be updated with current data and techniques and/or extended to cover the full range of floods and incorporate catchment development changes as well as future scenarios.
Topography	There may be circumstances where the topography suggests floods are not an issue (i.e. large elevated areas such as plateaus with no significant watercourses). Care should be taken in making such a determination, as land subject to flood hazards is not always obvious.

SCHEDULE 1 – MODEL OVERLAY INTRODUCTORY STATEMENT

Interim Floodplain Assessment Overlay Intent

The Interim Floodplain Assessment Overlay is intended as an interim measure to ensure the potential impacts of flooding on development are appropriately considered.

The short term intent for existing settlements within the floodplain is for new development to be sensitively designed in accordance with the applicable provisions of the Interim Floodplain Assessment Code.

The Overlay includes mapping which identifies land on which Assessable Development requires assessment against the Interim Floodplain Assessment Code. The Overlay may also be used to trigger additional design requirements related to flooding for building work assessable under the building assessment provisions, as set out in the Building Act 1975.

The Code provides technical provisions that apply to Assessable Development on land wholly or partially located within the Interim Floodplain Assessment Overlay.

The Code must be considered together with other relevant Planning Scheme Codes that are applicable to the subject development.

SCHEDULE 2 – MODEL INTERIM FLOODPLAIN ASSESSMENT CODE

1. Application

This Code is an applicable code for assessable development involving land wholly or partially within the Interim Floodplain Assessment Overlay Map.

Where there is an inconsistency with other sections of the Planning Scheme, this Code prevails.

2. Purpose

The purpose of the code is to manage development outcomes in the floodplain so that risk to life, property, community and the environment during future flood events is minimised, and to ensure that development does not increase the potential for flood damage on site or to other property.

3. Overall Outcomes

The purpose of the code will be achieved through the following overall outcomes:

a) Development maintains the safety of people on the development site from flood events and minimises the potential damage from flooding to property.

b) Development does not result in adverse impacts on people's safety, the environment or the capacity to use land within the floodplain.

4. Performance Outcomes and Acceptable Outcomes

Council's may choose the type of development to which each Performance Outcome/Acceptable Outcome below applies .

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
PO1. Development siting and lay-out responds to flooding potential and maintains personal safety at all times.	For Material Change of Use and Building Work AO1.1. Buildings are: a. located outside the overlay area, or b. located on the highest part of the site to minimise entrance of floodwaters; and c. provided with clear and direct pedestrian and vehicle evacuation routes off the site. *Note: If part of the site is outside the IFA Overlay area, this is the preferred location for all buildings.* For Reconfiguring a Lot AO1.2. Lots are: a. located outside the overlay area; or b. where possible, located on the highest part of the site to minimise entrance of floodwaters. *Note: If part of the site is outside the IFA Overlay area, this is the preferred location for all lots (excluding park or other relevant open space and recreation lots).* AO1.3. Road and/or pathway layout provides a safe and clear evacuation path: a. if a flood level is adopted[1], by locating entry points into the reconfiguration above the flood level and avoiding culs-de-sac or other non-permeable layouts; or b. by direct and simple routes to main carriageways. AO1.4. Signage is provided on site (regardless if land will be publicly or privately- owned): a. indicating the position and path of all safe evacuation routes off the site; and b. if the site contains or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
PO2. Development is resilient to flood events by ensuring design and construction account for the potential risks of flooding.	**For Material Change of Use and Building Work (Residential Uses)** **AO2.1.** Residential dwellings are not constructed as single-storey slab on ground. *Note: The highset 'Queenslander'-style house is a resilient low-density housing solution in floodplain areas. Higher density residential development should ensure only non-habitable rooms (e.g. garages, laundries) are located on the ground floor. If desired, a covenant reflecting AO2.1 on new proposed lots may address this Acceptable Outcome for reconfiguring a lot.* **For Material Change of Use and Building Work (Non-Residential Uses)** No Acceptable Outcome specified. *Note: The relevant building assessment provisions under the Building Act 1975 apply to all building work within the IFA Overlay area and must take account of the flood potential within the area.* *Note: Resilient building materials for use within the IFA Overlay area should be determined in consultation with Council, in accordance with the relevant building assessment provisions.*
PO3. Development avoids any increase in water flow velocity or flood level, and does not increase the potential for flood damage either on site or on other premises*.	**For All Development** **AO3.1.** Works in urban areas associated with the proposed development do not involve: a. any physical alteration to a watercourse or floodway including vegetation clearing; or b. a net increase in filling. **AO3.2.** Works in rural areas either: a. do not involve a net increase in filling greater than 50m3; or b. do not result in any reductions of on-site flood storage capacity and contain within the subject site any changes to depth/duration/velocity of flood waters of all floods up to and including the IFA Overlay; or c. do not change the flood characteristics at the IFA Overlay outside the subject site in ways that result in: • loss of flood storage; • loss of/changes to flow paths; • acceleration or retardation of flows; **or** • any reduction in flood warning times elsewhere on the floodplain.
PO4. Development avoids the release of hazardous materials into floodwaters.	**For Material Change of Use and Building Work** **AO4.1.** Materials manufactured or stored on site are not hazardous in nature, **OR** **AO4.2** If a flood level is adopted[1], material manufacturing equipment and containers are located above this level, **OR** **AO 4.3** If a flood level is not adopted, material manufacturing equipment and containers are located on the highest part of the site to enhance flood immunity. *Note: Refer to the* Dangerous Goods Safety Management Act 2001 *and associated Regulation, the* Environmental Protection Act 1994 *and the relevant building assessment provisions under the* Building Act 1975 *for requirements related to the manufacture and storage of hazardous substances.*
PO5. Community Infrastructure is able to function effectively during and immediately after flood events.	**For Material Change of Use** No Acceptable Outcome specified.

* Councils may choose to require the submission of a Flood Report that investigates the impact of the development on the floodplain and demonstrates compliance with P03, and other Performance Outcomes if Council requires.

[1] Council has adopted a habitable floor level of Xm AHD (Xm AHD flood level + 0.3m freeboard) for the purposes of this Code and the relevant building provisions of the Building Act 1975.

Case Study 1 - Material Change of Use - Residential (Six Townhouses)

Site Location:

Wholly within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages higher density residential development

Proposed Development:

6 x 3-storey townhouses with ground floor car accommodation

Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Development located on highest part of site
- Development has a simple direct evacuation route off site
- Habitable Rooms are elevated through ground floor being used as car accommodation
- Site is in urban area and no alteration to watercourse or filling is proposed
- No hazardous materials to be stored on site
- Not a Community Infrastructure item

Recommendation:- Approval

Case Study 2 - Material Change of Use (Service Station)

Site Location:

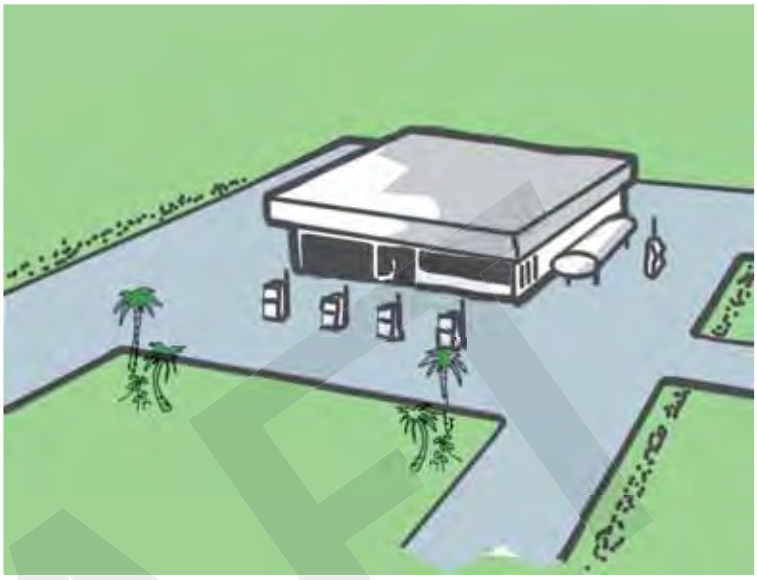
Wholly within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages service station development

Proposed Development:

Service Station



Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Development located on highest part of site
- Development has simple & direct evacuation route off site
- Site is in urban area and no alteration to watercourse or filling is proposed
- Hazardous materials elevated above flood level

Recommendation:- Approval

Case Study 3 - Reconfiguring a Lot - Residential (1 into 8)

Site Location:

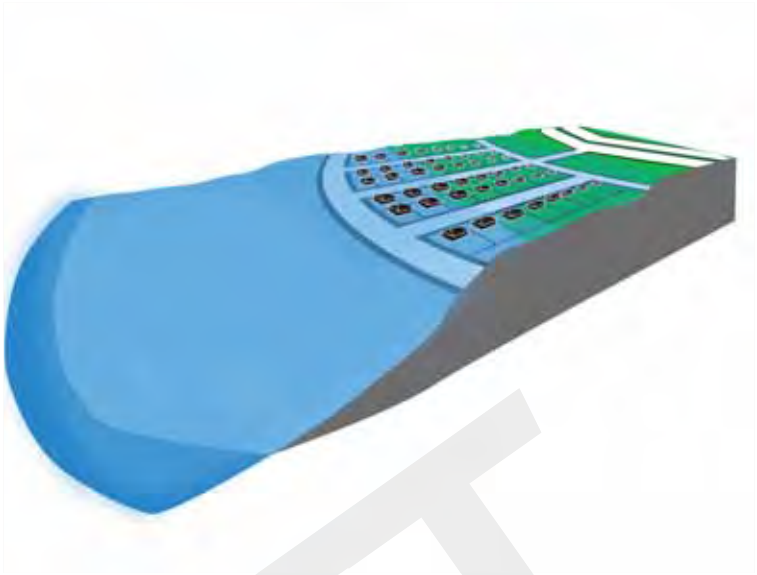
Part of site within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages residential reconfiguration of a lot

Proposed Development:

Residential Subdivision 1 into 8 lots



Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- All proposed new lots located outside of IFA Overlay Area
- Road layout is direct & simple to allow evacuation during flood
- Appropriate signage is provided indicating evacuation routes
- Site is in urban area and no alteration to watercourse or filling is proposed

Recommendation:- Approval

Case Study 4 - Building Work (New Residential Dwelling)

Site Location:

Wholly within IFA Overlay Area

Other Planning Considerations:

Within relevant Zone in Planning Scheme that envisages low density residential development

Proposed Development:

New residential dwelling that is subject to assessment under the planning scheme

Assessment against IFA Overlay Code:

This proposed development complies with the Model Code, as:

- Development located on highest part of site
- Development has a simple direct evacuation route off site
- House is not slab on ground construction – it is a 'Queenslander'-style home
- Site is in urban area and no alteration to watercourse or filling is proposed
- No hazardous materials to be stored on site
- Not a Community Infrastructure item

Recommendation:-
Approval

Notes

DRAFT

Queensland Government

Attachment 7 - Proposed options for adopting the Standard in Queensland

Option 1 (**recommended**): Adopt the Standard as a new mandatory part to the Queensland Development Code (QDC), subject to Executive Council approval, as soon as possible (proposed for July/August 2011). In addition, include additional provisions outside the scope of the Standard (discussed further in **Attachment 5**) that can be adopted by Local Governments on a voluntary basis, for example:

- Including a requirement for commercial buildings to be built to the Performance Requirements of the Standard and with measures to allow for safe storage of chemicals and other toxic substances
- requiring the use of flood resilient materials below the flood hazard level (FHL), and
- setting a minimum freeboard of 0.3 metres (unless otherwise specified by the local authority having jurisdiction).

Advantages

- This option takes a proactive approach and provides clear design guidance and a uniform approach to building in flood hazard areas across the State. In addition it will also address the immediate needs associated with rebuilding of flood-damaged buildings in the near term.

- This is particularly pertinent given that two Temporary Local Planning Instruments (TLPI) from Brisbane and Ipswich City Councils, which recently received your approval and took effect in May/June 2011, have included provisions relating to building work (such as setting non-habitable floor levels and use of flood resilient materials below the FHL). It is anticipated other TLPIs, from Local Governments with flood/cyclone affected areas will be submitted seeking your approval.

- The Queensland Reconstruction Authority (QRA) has provided Building Codes Queensland (BCQ) with anecdotal evidence that there are a number of Local Governments considering a similar approach to address immediate planning and building issues in relation to flood risk. Considering the approach of the previous TLPIs it is considered some future TLPIs are also likely to include building provisions.

- The cost of rebuilding public infrastructure and supporting businesses and the community following the recent floods and Cyclone Yasi is estimated by Queensland Treasury to be approximately $6.8 billion. This option supports the rebuilding focus of the Government and its commitment to improving the flood resilience of individuals and Queensland communities.

- Providing additional measures that can be adopted by Local Governments on a voluntary basis will provide flexibility to address these issues where they are deemed necessary due to regional considerations, e.g. it may be desirable to include requirements for commercial buildings in some parts of Brisbane where manufacturing facilities have been located in flood hazard areas.

Disadvantages

- Early adoption of the Standard and additional non-mandatory provisions prior to the release of the Queensland Floods Commission of Inquiry's (CoI) final report will mean that the provisions are introduced without the benefits of key findings of the CoI's final report, anticipated early 2012.

- Implementation of the new mandatory part would be without an understanding of the cost benefit analysis of the Australian Building Codes Board (ABCB) Regulation Impact Statement (RIS) process for the Standard, including likely costs for Queensland home owners and the building/design sector.

Option 2 – Adopt the Standard as a new mandatory part to the QDC, subject to Executive Council approval, as soon as possible (proposed for July/August 2011) without any additional optional provisions.

Advantages

- As per Option 1.

Disadvantages

- As per Option 1.

- This option will not provide Local Governments with the ability to address matters outside scope of the Standard, e.g. measures for commercial buildings.

Option 3 – Adopt the Standard as a new mandatory part to the QDC once the national RIS process is finalised (proposed by mid 2012).

Advantages

- The results of the national Standard RIS may result in a refinement of the deemed-to-satisfy provisions of the Standard. The RIS will also provide a clearer understanding of any costs of implementing the Standard specific to Queensland.

- This time frame is closely aligned with the expected January 2012 release of the CoI's final report on the recent Queensland floods. The findings of the CoI may inform Queensland-specific amendments to the Standard that will contribute to building more flood resilient buildings.

Disadvantages

- The Queensland Government could be perceived as missing a significant opportunity to provide clear guidance and a uniform approach to building in flood hazard areas across the State, particularly at a time when many property owners are in the process of rebuilding.

- More Local Governments will be seeking Ministerial approvals for TLPIs with advisory provisions relating to building work included to compensate for the lack of clear flood specific codes. Supporting an ad hoc approach rather than a uniform and consistent approach for improving flood resilience of buildings built and upgraded in flood hazard areas.

Option 4 – Adopt the entire Standard as a non-mandatory part of the QDC for voluntary uptake by Local Governments.

Advantages

- No costs or resource implications for the Department associated with publishing a model code.

Disadvantages

- Voluntary uptake, rather than mandatory performance requirements, for new buildings and upgrades to buildings in flood hazard areas may result in inconsistent building practices across the State until the Standard is included in the Building Code of Australia (BCA) (1 May 2013).

Option 5 – Do nothing and wait until the Standard is incorporated into the BCA and takes effect from 1 May 2013.

Advantages

- No costs or resource implications for the Department as the Standard is adopted as part of the BCA.

Disadvantages

- The Standard being included under the 1 May 2013 version of the BCA may not be supported, for example by the Building Codes Committee and or the ABCB Board. If this scenario did occur then the Standard would only be an advisory code.

- Queensland will miss a significant opportunity to provide clear design guidance and a uniform approach to building in flood hazard areas across the State, at least for approximately a two year period (late 2011 to May 2013). In addition, this approach will not make use of the immediate opportunity to improve flood resilience of buildings and communities from future flooding events.

Attachment 6 - Flood risks for buildings and occupants – policy analysis (Draft only)

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
Water level	Flood data and mapping	Building Regulation 2006 (BR) allows Local Governments (LGs) to designate flood prone areas in accordance with SPP1/03 and set floor levels of habitable rooms. SPP1/03 requires the designation to be for at least a 1 in 100 year event.	Relies on accurate mapping data to be provided by the relevant authority. Standard includes reference to flow rates of flood waters, if the LG can provide this information. Qld has also proposed a minimum freeboard (i.e. a "buffer" over and above the expected flood level) of at least 0.3m, unless otherwise determined by the relevant authority, be included as part of the Standard	Is SPP1/03 appropriate for designating flood prone areas? Should the SPP1/03 be reviewed to a represent a lower flood risk level (i.e. 1:150)? Are LGs appropriately designating flood prone areas in accordance with SPP1/03? Do LGs have resources to undertake flood mapping and provide data to property owners? Should LGs or State be making designations and undertaking mapping? Should LG's be required to provide property based information on expected flow rates during a flood event?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
	Flotation, movement or collapse of foundations	Actions that a building must resist are outlined in part 2.1, Volume 2 of the BCA and Part B1, Volume 1 of the BCA. This criterion states that a building, during construction and use, must perform adequately under all reasonably expected design actions and withstand extreme or repeated design actions, by resisting the actions to which it may reasonably be expected to be subjected. Flood actions are not specifically regulated under the BCA.	Includes design requirements relating to geotechnical considerations, foundation depths, foundation walls, piers/posts/columns, use of fill and use of slabs on ground to ensure foundations do not permanently move, collapse or float during a flood event.	
	Inundation of habitable rooms	BR allows LGs to declare floor levels of habitable rooms in designated flood prone areas	Requires habitable rooms to be elevated above FHL	Are LGs declaring heights of habitable floor levels in flood prone areas? Are levels of habitable floors in flood prone areas consistent across the State?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
	Inundation of non-habitable room	Non-habitable rooms are not regulated	Requires non-habitable rooms to be elevated above FHL, or receive no more than 1m of inundation above floor level. Also requires enclosed non-habitable areas below the FHL to be designed to be subjected to a maximum inundation of 1m from floor level during a flood event. Includes requirements for materials used for structural purposes (e.g. columns, bracing members, wall framing members) to be capable of resisting damage and deterioration associated with flood water.	
	Inundation of utilities (electrical, air-conditioning and HVAC, mechanical etc)	Not currently required to be located above flood level	Requires utilities to be either raised above FHL or constructed in a flood resistant manner. Electrical meters and switches must be located above the FHL and accessible during a flood event.	Is Standard most appropriate place for these provisions or should relevant Australian Standards (e.g. AS3000 - Wiring rules) be amended to require electrical utilities to be located and/or designed to account for likely impacts of floodwaters?
	Plumbing/waste water installations	Not regulated. Non-mandatory provisions for reflux valves in PCA.	Requires plumbing and drainage systems (including sewage and wastewater systems and hot/cold water supply) to be either raised above FHL or constructed in a flood resistant manner	Should reflux valves be required at the property boundary to prevent floodwaters entering the property through pipework?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
	Stormwater installations	Not a mandatory inspection for building work	Not regulated	Should stormwater installations from the base of the downpipe be re-classified as Plumbing work and inspected by LG plumbing inspectors?
	Egress (escape/rescue of building occupants)	Not specifically regulated with regard to flood events	Requires egress to be available from a balcony, window, deck, window or the like to allow for rescue of occupants during a flood event.	
	Termite management	Building Code of Australia (BCA) B1.4 in Volume 1 for class 2-9 buildings and 3.1.3 in Volume 2 for class 1 and 10 buildings covers termite management systems. This is not regulated for flood areas.	Handbook that will accompany Standard (non-mandatory) refers to checking termite management systems after flood events to ensure they have not been breached (e.g. dilution of chemical barriers, or breach of physical barriers by silt etc)	Are further steps required to ensure termite management systems are operational after flood events? Are there any types of termite management systems that can withstand impacts of flood water?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
Water forces	Flood actions	Actions that a building must resist are outlined in part 2.1, Volume 2 of the BCA and Part B1, Volume 1 of the BCA. These criteria state that a building must perform adequately under all reasonably expected design actions and withstand extreme or repeated design actions, by resisting the actions to which it may reasonably be expected to be subjected. Flood actions are not specifically regulated under the BCA, Although it does cover action of liquids, ground water and rainwater ponding. Individual site assessments may be undertaken by a hydraulic engineer to determine likely flood actions a building may be subjected to.	The flood actions in the Standard include: • Hydrostatic actions • Hydrodynamic actions • Debris actions • Wave actions • Erosion and scour There are two pathways for compliance with the Standard – 1) building is designed based on Deemed-to-Satisfy design requirements in Standard 2) Building is designed as an alternative solution to DTS using engineering practice based on first principles. The DTS provisions are limited to flooding where the flow rate is no more than 1.5m/s (anything above this would require an alternative solution)	Should expected flow rates be included in Local Government flood mapping and data? Should individual hydrology site assessments be required for all structures in flood prone areas? Should standards be developed to address impacts of storm surge (as recommended in JCU Cyclone Yasi report), and is it possible to do so?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
Duration of inundation	Saturation of soil	The BCA requires structures to consider site soil classifications in determining structural requirements for buildings. The BCA does not specifically require consideration of how the structure will perform where soils are saturated from flood inundation. However, it could be considered a reasonably expected design action (refer above).	Standard requires footings etc to be designed to withstand saturation of the soil during a flood event	
	Exposure of materials to water	The BCA requires materials to be fit for the purpose for which they are intended. It is not clear that materials should be flood resilient in flood prone areas.	Standard requires materials used for structural components below the FHL to be able to withstand exposure/saturation of water. It was deemed that non-structural component will need to be removed to allow for proper cleaning, and are generally not expensive to replace.	Should there be requirements for flood resilient materials to be used for non-structural purposes below FHL, or should this be optional for property owners to upgrade as desired, based on likely occurrence of future flooding?
Water quality	Debris	These risks are not assessed as part of the building's design under the BCA. However under the PCA there are non-mandatory provisions for the installation of reflux valves.	Actions of debris are included in draft Standard. Standard does not cover water quality issues related to chemicals, sewage (although does require sewage treatment systems to be	
	Chemicals			Should Standard be expanded to include commercial type buildings and require storage of chemicals above FHL?

Dimension	Issues/risks for buildings	How is it regulated now?	How will it be regulated under draft national standard?	Policy questions
	Sewage		either raised above FHL or constructed in a flood resistant manner), or disease	Should reflux valves be required at premises boundaries on sewer discharge pipes to prevent the dispersal of sewerage from inundated sewers?
	Disease			Should additional water quality factors (such as chemicals and disease) be considered in the scope of the Standard? If so, how could this be achieved?

Attachment 5 - Limits and other considerations of the draft Standard

Maximum of 1m inundation and a flow rate of 1.5m/s

- The proposed deemed-to-satisfy provisions (DTS) are limited to cases of likely flooding that involve a maximum of 1.0 metre inundation on non-habitable rooms (above lowest non-habitable floor level, unless open) and a flow rate of 1.5 metre per second (5.4 kilometres per hour).

- The ABCB has advised that the 1.0 metre inundation and the flow rate of 1.5 metres per second have been applied in the USA (Federal Emergency Management Agency), and use existing engineering principles. There is general support for these limits by the flood standard reference group, including Brisbane City Council (BCC) and the Gold Coast City Council (GCCC).

- Under the Brisbane Subdivision Guideline (for the Brisbane City Council area) a flow velocity of less than 2 metres per second characterises an acceptable degree of hazard. The adopted hazard parameters, under the Guideline are generally based on criteria set out in the SCARM Report - *Floodplain Management in Australia - Best* Practice Principles and Guidelines (Commonwealth of Australia, 2000).

- The New South Wales Department of Planning and Infrastructure (DPI) does not support the limitation of 1.5 metres per second as it believes it is unacceptable to build in areas where flow velocities are 1.5 metres per second. DPI also relies on the SCARM Report that identifies wading, by able bodied adults becoming difficult and dangerous when the depth of still water exceeds 1.2metres and the velocity exceeds 0.8 metres per second (and for various combinations of depth and velocity between these limits). This is considered a narrow focus of the SCARM Report and better used to inform evacuation policies.

- The proposed limits of 1metre inundation and a flow rate of 1.5 metres per second are supported by the GCCC. The GCCC sees defining flow velocity as essential to managing flood risk in its area. The proposed flood code under its draft planning scheme sets a maximum flow velocity of 1.5 metres per second and considers flow rates above this limit to constitute an extreme hazard and are not acceptable, for any kind of development.

- BCQ supports the approach of the draft Standard and considers that the limits are a reasonable minimum for construction in a flood hazard area that will not significantly change conventional construction practices.

Elevation of habitable floors

- The draft Standard proposes floors of habitable rooms must be above the flood hazard level (FHL) - the defined flood level (DFL) plus freeboard, and floors of enclosed non-habitable rooms must be no more than 1.0 metre below the DFL.

- A freeboard allows for an element of uncertainty, provides protection from floods marginally above the DFL and is typically used to provide a factor of safety, for example, to compensate for effects of wave action (small boat) and localised hydraulic behaviour. A freeboard does not provide protection for flood events larger than the defined flood event.

- BCQ has consistently advocated that the draft Standard include a minimum freeboard (e.g. 0.3 metres or 0.5 metres) unless otherwise specified by the authority having jurisdiction (e.g. Local Government).

- Currently a non-mandatory part of the QDC sets a minimum freeboard of 0.3 metres that can be adopted by Local Governments. Queensland's experience is that the setting of freeboards is not applied consistently across Local Government areas and, if set varies between .3 metres to .5 metres areas (refers to **Attachment 4** that shows approaches by selected Local Governments including BCC and GCCC).

Flood resilient materials below the flood hazard level (FHL)

- The DTS provisions of the draft Standard allows for building materials used for the structural performance of a building, for example load bearing columns and outline requirements for wall framing members, and bracing, up to the FHL. The DTS provisions do not apply to the use of building materials below the FHL in the draft Standard

- A view of some members of the flood standard reference group is that it is inappropriate for the BCA to extend to non-structural materials used below the FHL as this is to be a to property protection issue.

- The flood standard reference group's Housing Industry Association and Master Builders Association representatives support non-structural materials below the FHL to be included in the Handbook rather than in the Standard. Primarily, it may be more cost effective to use non-water resistant non-structural materials (eg ordinary plasterboard), as such material can readily be removed to allow draining and clearing of any cavities and the structural members can fully dry out after inundation. This is then relatively cheap to be later replaced with new material.

- BCQ advocated that the draft Standard should provide for all building materials below the FHL (non-habitable rooms) to help build flood resilience into buildings built in flood hazard areas and minimise damage to non-structural materials caused by water, debris and mud. However, this was not supported by the ABCB and some of the members of the reference group.

Commercial buildings

- Commercial buildings subjected to floods with characteristics outside the scope of the draft Standard must still be built to structurally withstand the likely actions and loads imposed upon them.

- BCQ has provided feedback to the flood standard reference group for a preference for commercial buildings to be included within the scope of the draft Standard, or at least the Performance Requirements of the draft Standard with respect to structural adequacy.

- In addition, BCQ also considers commercial buildings could be required to have measures to allow for safe storage of chemicals and other toxic substances. For example, Rockhampton Regional Council requires commercial buildings, in the designated flood hazard area to have 30 per cent of gross floor area 500mm above DFE (see **Attachment 4**).

- The location of commercial buildings is a planning matter and should be considered in relation to the risk of flooding and the potential damage to goods, property and health of surrounding residents. However, the recent Queensland floods highlighted water quality issues, including the clean-up of flood contaminated buildings and real concerns for health of building owners post floods.

- It is considered that including some measures for commercial buildings, such as requiring a certain percentage at the floor area to be elevated above the FHL, would enable building owners and occupants to more appropriately manage the risk of chemical and other contaminates of floodwaters during a flood event.

Objectives of the BCA – Property Protection and Resilience

- The scope of the draft Standard is restricted to the current NCC objectives of health, safety, amenity and sustainability. However, the ABCB is applying a strict hierarchy of application of the objectives. Discussion on some key aspects of the flood risks to buildings is primarily being focused on structural safety and life safety, rather than protection of property.

- As with bushfires and cyclones, the impacts of a large scale natural disaster such as the floods that were experienced across Australia can severely test community resilience. Therefore a more expansive policy, for example one that incorporates some property protection may be preferable to increase flood resilience of buildings built in flood hazard areas to help protect the community from future devastating impacts, including economic and health impacts from flood events.

- BCQ requested that property protection issues (such as performance of materials below the FHL, health impacts (scope to include commercial buildings considering the health issues in relation to water quality) and community costs be directly addressed in the regulation impact statement to fully assess the cost benefit ratio of the draft Standard.

- The reference group identified the above issues in relation of amenity and property protection as needing further clarification from the ABCB in relation to the scope of the objectives of the BCA. At the 30 June 2011 ABCB meeting Board members will consider the Inter-Government Agreement Principle of the minimum necessary for performance-based codes to achieve health, safety, amenity and sustainability of buildings, including the scope of the draft Standard.

Draft Standard and flood mapping

- A flood matrix, developed in consultation with Planning Policy, Growth Management Queensland and the Queensland Reconstruction Authority (QRA) has been prepared to highlight flood risks to buildings in a designated flood hazard area (refer to **Attachment 6**), current regulation of these risks, the implications of the draft Standard and any outlying policy questions. Planning Policy and the QRA are yet to provide feedback.

- The draft standard relies on accurate regional flood mapping, including ongoing maintenance of flood mapping/data is also required to properly inform building design and construction, and limit development and redevelopment in designated flood hazard areas. For example, new buildings in a designated flood hazard area, under the draft standard are proposed to have habitable rooms to be elevated above the FHL (DFL plus freeboard).

- The ABCB refers to the American Society of Civil Engineers Standard ASCE/SEI 24-05 on Flood Resistant Design and Construction which identifies that scour of foundations becomes a problem at above 5 feet per second (around 1.5 metres per second) and that structures should not be constructed in high velocity flow areas (i.e. greater than 10 feet per second) and 5 feet per second is described as a moderate flow.

- The draft Standard references a 1.5 metre per second flow rate of flood waters and unless the design/building/engineering can rely on accurate mapping/flood data for a building site, for example provided by the relevant authority housing costs could be impacted by additional hydrological modelling at the design stage.

Attachment 4 – Snapshot of some Local Government flooding Requirements

Glossary:
DFE – Defined Flood Event
AEP – Annual Exceedance Probability or ARI / Average Recurrence Interval (probability of reoccurrence)
AHD – Australian Height Datum, a geodetic datum for altitude measurement in Australia

Local Government	Freeboard
Brisbane City Council	Habitable floor levels 500mm above the DFE. Non-habitable floor levels 300mm above DFE.
Gold Coast City Council	Habitable floor levels 300mm above the DFE. Non-habitable floor levels are located above the DFE.
Sunshine Coast Regional Council	***Maroochy and Noosa*** The greater of: 1. 2.5m AHD (to provide protection from storm surge events) 2. 400mm above the 100 year ARI flood level 3. 600mm above the highest recorded flood level ***Caloundra*** Floor levels for essential community uses (e.g. hospitals and emergency services) are a minimum of 1m above the DFE. Floor levels for residential, business, commercial and industrial buildings are a minimum of 500mm above the DFE.
Moreton Bay Regional Council	***Caboolture*** Habitable floor levels 300mm above the DFE. Non-habitable floor levels at, or above, the DFE. Pine Rivers and Redcliffe have not designated flood prone areas.
Rockhampton Regional Council	***Rockhampton*** Habitable floor levels 500mm above the DFE. For commercial buildings, minimum of 30 per cent of the gross floor area of the building is at least 500 mm above the level of the DFE for the storage of goods. ***Fitzroy*** Habitable floor levels 600mm above the DFE. Non-habitable floor levels 300mm above DFE.
Bundaberg Regional Council	300mm above DFE (1 in 50 year ARI)

(BRC)	(There are four planning schemes in BRC due to amalgamations and only Bundaberg appears to set a freeboard).
Mackay Regional Council (MRC)	Habitable floor levels 300mm above the DFE. (There are other planning schemes in MRC due to amalgamations and only Mackay appears to have set freeboard).
Townsville City Council	Habitable floor levels 300mm above the DFE (1 in 50 year ARI).
Cairns Regional Council	Floor levels 150mm above 1 in 100 year ARI.
Central Highlands Regional Council	Habitable floor levels 300mm above the DFE.
Mount Isa City Council	Habitable floor levels 300mm above the DFE. In the case of an extension to a building existing at the date of commencement of this planning scheme, where the floor area of the extension does not exceed 50 per cent of the floor area of the existing building, at least 600mm above the level of the 15 year ARI flood.
Logan City Council	Habitable floor levels 500mm above the DFE Non-habitable floor levels 300mm above DFE.
Ipswich City Council	Habitable floor levels 500mm above the DFE.
Toowoomba Regional Council	Does not set a freeboard.
Charters Towers Regional Council	Does not set a freeboard.

Attachment 3 - Sate and Territory regulation of building in flood hazard areas	
State or Territory	**Regulatory System Currently in Place**
Australian Capital Territory	Land use planning for Canberra results in development for building on land NOT subject to flooding
	Consequently there are no legislative requirements for flooding in ACT
New South Wales	*Environmental Planning and Assessment Act 1979* (EPAA) section 54 allows Local Governments to make plans which cover flood affected land
	Habitable floors **should be** set 0.5m above 100 year flood level
	Councils are required to be consistent with Ministerial directions under section 117 of the EPAA, and *Direction 15-Flood Prone Land* requires plans to be consistent with the principles of the *Floodplain Development Manual* (accessed at http://www.dnr.nsw.gov.au/floodplains/pdf/a_flood_manual.pdf) and a guideline (accessed at http://www.planning.nsw.gov.au/planning_reforms/p/fpl_guideline.pdf).
	The manual was gazetted under the *Local Government Act 1993*
	Guideline Councils are responsible for determining the appropriate flood planning levels (FPL) for land within their local government area. While the flood used to determine the residential FPL is a decision of the local council, the Manual highlights that FPLs for typical residential development would generally be based around the 100 year flood plus an appropriate freeboard (typically 0.5m). This Guideline confirms that, unless there are exceptional circumstances, councils should adopt the 100 year flood level as the FPL for residential development. In proposing a case for exceptional circumstances, a Council would need to demonstrate that a different FPL was required for the management of residential development due to local flood behaviour, flood history, associated flood hazards or a particular historic flood. Unless there are exceptional circumstances, councils should not impose flood related development controls on residential development on land with a low probability of flooding, that is, land above the residential FPL (low flood risk areas).
Northern Territory	Sections 37 – 39 of the *Building Regulation 1998* regulate flooding
	s37 refers to schedule 4 which shows flood prone area maps
	s38 states flood prone areas are to have the flood level set at the 1 in 100 year flood level
	s39 sets conditions which apply to buildings in flood prone areas: • Height of the lowest floor level, or lowest part of the floor level, of a habitable room to be 300mm above 1 in 100 year flood level • Buildings' structural design to be adequate to withstand flooding. Special consideration shall be given to: ▪ the site, size and shape of the building ▪ the effect of buoyancy on the sub-structure of the building ▪ the stresses that the depth and velocity of water and the impact of water borne debris may have on the structure
Queensland	The *Sustainable Planning Act 2009* provides that a planning scheme must not include provisions about building work, to the extent the building work is regulated under the *Building Act 1975* (BA). Section 31 of the BA provides a head-of-power to allow Local Governments to include building provisions in a planning scheme if permitted by a regulation. *Building Regulation 2006* section 13 states a Local Governments may in a planning

	scheme or by a temporary local planning instrument under the *Planning Act* or a resolution- a) Designate part of its area as a natural hazard management area (flood); and b) Declare the level to which the floor levels of habitable rooms as defined under the BCA of buildings on the land must be built The State Planning Policy 1/03 (SPP) sets out the State's interest in ensuring the natural hazards of flood, bushfire and landslide are adequately considered when making decisions about development. The SPP is currently under review and will consider the outcomes recommended from both the Victorian Bushfires Royal Commission and the Queensland Floods Commission of Inquiry. The SPP informs the way in which planning schemes are to address areas of natural hazard. The provisions in planning schemes are to control development to the extent it impacts on land use. Planning schemes are not permitted to specifically address the construction of buildings with the exception of alternative siting provisions allowed for through the BA.
	Local Governments may designate flood areas
	Local Governments must, when designating a flood area, comply with 'State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.'
	Local Governments must keep a register of the when and where flood areas designated
	Building legislation in the State adopts the Building Code of Australia as the construction standard, which requires any proposed building work to comply with the performance requirements as stated in the Code
	The Queensland Development Code contains Non Mandatory Part (NMP) 1.5 which stipulates free boards to be 300mm above the 100 year flood level or highest flood mark designated by that Local Government. However, this is only enforceable if adopted in accordance with s13 of the *Building Regulation 2006*.
South Australia	The *Development Act 1993* (DA) and its regulation requires Local Governments to prepare and publish Development Plans that outline the planning and development objectives for their particular areas
	Some of the plans and well known flood areas contain control and management for local flooding
	Some Local Governments include mapping of flood prone areas
	The DA contains provisions for building control but not specifically in relation to flooding
	The *Natural Resource Management Act 2004* defines a 'floodplain'
	Generally the 68 Council Development Plans across the state use the 100 year flood level which requires floor levels in habitable rooms to be at least 300mm above
Tasmania	The *Land Use Planning and Approvals Act 1993*, the *Building Act 2000* and the *Building Regulations 2004* regulate land subject to flooding
	Local Governments issue building and planning permits
	Any floor levels of habitable rooms are required to be 300mm above the prescribed flood level
	The prescribed flood level is determined as 600mm above the highest known flood level which has a 1% probability of being exceeded this also includes the high tide mark for coastal regions
	Tasmania has 10 water course flood plains
Victoria	Victorian Planning Provisions introduced Land Use Planning Controls, which along with the *Building Act 1993* and *Regulation 2006* regulate flooding
	Planning permit applications are generally required for any development in an area liable to flood, these applications are generally referred to the local flooding authority
	Assessment is based on the relevant considerations applicable to each case

	Flood areas apply to all except class 10 buildings, unenclosed floor areas of buildings or alterations/additions which increase the original building by less than $20m^2$
	Land liable to flooding is determined under the *Water Act 1989,* the *Planning and Environment Act 1987* or designated by a Local Government or land upon which water concentrates, usually or occasionally flows including land affected by flow from a drainage system
	Consent and report from Local Government is to be obtained for any building application on land liable to flood
	Free board levels are generally set at 300mm above the 100year flood level
	Local Governments will generally set the free board level 300mm above the declared flood level as per the Water Act unless the Floodplain Management Authority determines it otherwise
Western Australia	The *Planning and Development Act 2005* allows local government to create planning schemes to and adopt polices that would restrict the use of land subject to flooding
	The Department of Water provides advice on these matters and advises that development in the 100year floodway should not occur
	Building legislation in the State adopt the Building Code of Australia as the construction standard, which requires any proposed building work to comply with the performance requirements as stated in the code
	Free board levels are to be set 500mm above the 100 year flood level

CONSTRUCTION OF BUILDINGS IN FLOOD HAZARD AREAS

INFORMATION HANDBOOK

VERSION 4

JUNE 2011

Australian Building Codes Board

Committee-in-Confidence

Important Notice and Disclaimer

The Australian Building Codes Board (ABCB) and the participating Governments are committed to enhancing the availability and dissemination of information relating to the built environment. Where appropriate, the ABCB seeks to develop non-regulatory solutions to building-related issues.

This Handbook on Construction of Buildings in Flood Hazard Areas (the Handbook) is provided for general information only and should not be taken as providing specific advice on any issue. In particular, this Handbook is not mandatory or regulatory in nature. Rather, it is designed to accompany the ABCB Standard for Construction of Buildings in Flood Hazard Areas and to assist in making information on this topic readily available.

However, neither the ABCB, the participating Governments, nor the groups which have endorsed or been involved in the development of the Handbook, accept any responsibility for the use of the information contained in the Handbook and make no guarantee or representation whatsoever that the information is an exhaustive treatment of the subject matters contained therein or is complete, accurate, up-to-date or reliable for any particular purpose.

The ABCB, the participating Governments and groups which have endorsed or been involved in the development of the Handbook expressly disclaim all liability for any loss, damage, injury or other consequence, howsoever caused (including without limitation by way of negligence) which may arise directly or indirectly from use of, or reliance on, this Handbook.

Users should exercise their own skill and care with respect to their use of this Handbook and should obtain appropriate independent professional advice on any specific issues concerning them.

In particular, and to avoid doubt, the use of this Handbook does not–

- guarantee acceptance or accreditation of a design, material or building solution by any entity authorised to do so under any law;
- mean that a design, material or building solution complies with the National Construction Code (NCC); or
- absolve the user from complying with any Local, State, Territory or Australian Government legal requirements.

Preface

The Inter-Government Agreement (IGA) that governs the ABCB places a strong emphasis on reducing reliance on regulation, including consideration of non-regulatory alternatives such as non-mandatory guidelines, information handbooks and protocols.

This Information Handbook is one of a series produced by the ABCB. The series of Information Handbooks is being developed in response to comments and concerns expressed by government, industry and the community that relate to the built environment. The topics of Information Handbooks expand on areas of existing regulation or relate to topics which have, for a variety of reasons, been deemed inappropriate for regulation. The aim of the Information Handbooks is to provide construction industry participants with best practice, non-mandatory advice and guidance on specific topics.

Construction of Buildings in Flood Hazard Areas has been identified as an issue that requires consistent uniform guidance.

The Construction of Buildings in Flood Hazard Areas Information Handbook has been developed to foster a greater understanding of provisions in the ABCB Standard for Construction of Buildings in Flood Hazard Areas and to provide additional advisory information outside the scope of the Standard. This Information Handbook addresses the issues in generic terms. It is expected that this Information Handbook will be used to develop solutions relevant to specific situations in accordance with the generic principles and criteria contained herein.

This Information Handbook should be read in conjunction with the ABCB Standard for Construction of Buildings in Flood Hazard Areas.

It must also be emphasised that the Guideline either independently or in combination with the Standard, does not provide a stand-alone solution to mitigating life safety risk due to flooding. Reducing life safety risk due to flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, flood warning and emergency response strategies for flooding, and building standards.

Therefore, with application of this Guideline, whether independent from or in combination with the Standard within flood hazard areas, in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with these requirements will eliminate the risk of serious injury or fatality even in the defined flood event (DFE).

In addition, larger floods than the DFE can and will occur and even floods of the scale of the DFE can be variable and could exceed the design parameters and limitations in the Standard. Availability of assistance from emergency services or other avenues are

important considerations that are not treated in the Standard.

Acknowledgements

The ABCB acknowledges the valuable contributions of members of an expert Reference Group that assisted the development of the Information Handbook.

The following organisations were represented on the Reference Group –

- Australian Government Attorney-General's Department
- Brisbane City Council
- Bureau of Meteorology
- Geoscience Australia
- Gold Coast City Council
- Hawkesbury City Council
- Housing Industry Association
- Insurance Australia Group
- Master Builders Association
- NSW Department of Planning and Infrastructure
- NSW Office of Environment and Heritage
- Queensland Department of Local Government and Planning
- Risk Frontiers
- Tasmania Department of Justice

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Introduction

Reminder:

This Handbook is not mandatory or regulatory in nature and compliance with it will not necessarily discharge a user's legal obligations. The Handbook should only be read and used subject to, and in conjunction with, the general disclaimer at page ii.

The Handbook also needs to be read in conjunction with the building legislation of the relevant State or Territory, and the ABCB Standard for Construction of Buildings in Flood Hazard Areas. It is written in generic terms and it is not intended that the content of the Handbook counteract or conflict with the legislative requirements, any references in legal documents, any handbooks issued by the Administration or any directives by the Building Control Authority.

Background

In Australia, floods cause more damage on an average annual basis than any other natural disaster. From 1967 to 1999, the total cost of floods has been estimated at $10.4 billion or 29% of the average proportional annual cost of natural disasters. In addition, during the same period, floods were responsible for 18% of fatalities caused by natural hazards[Error! Bookmark not defined.].

Historically our towns developed on riverbanks to facilitate the shipping of goods to and from the settlements, and where fertile soil existed, but this also left them vulnerable to flooding.

Mitigating risk to life in flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce residual flood risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, flood warning and emergency response strategies for flooding, and building standards.

At present, requirements for flood resistant design and construction in the National Construction Code (NCC) are limited to ensuring the building or structure does not collapse when subjected to flood actions. Flood risk is generally regulated by the authority having jurisdiction. This could be an individual local government which uses planning controls to either restrict the location of buildings in flood hazard areas. These restrictions keep buildings away from areas where development may affect flood behaviour (including floodways), away from the most hazardous areas (characterised by high velocities and/or depths). These are supported by building controls that require the building or certain floors to be located above an established minimum flood level, such as the flood hazard level. The flood hazard level considers both for the design flood level (DFL) from the DFE plus a freeboard to provide above floor areas with protection from the DFE event considering uncertainty in the DFL and other phenomenon such as wind and wake waves and local hydraulic affects.

This Handbook has been prepared to accompany the ABCB Standard for Construction of Buildings in Flood Hazard Areas (the Standard). The Handbook provides commentary on the provisions in the Standard together with additional advisory information.

Therefore, with application of this Guideline to flood hazard areas whether independent from, or in combination with, the Standard and in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with these requirements will eliminate the risk of serious injury or fatality even in the defined flood event (DFE).

In addition, larger floods than the DFE can and will occur and even floods of the scale of the DFE can be variable and could exceed the design parameters and limitations in the Standard. Availability of assistance from emergency services or other avenues are important considerations not treated in this Standard.

It is important to understand that flood is a local hazard whose parameters, including depth and velocity, vary significantly within the flood hazard area. Modelling of the DFE generally provides information on average velocities within an area at the peak of the flood for the DFE rather than velocities at a specific location. Velocities and depths will generally increase in larger floods.

In addition, there are significant variations in the information available on flooding between areas within a local authority and between local authorities within Australia. This may result from the age of studies, the type of modelling undertaken, the information available to understand flood behaviour, or the reliance of historical flood information or estimates to provide an understanding of flood risk.

Flood investigations may have also resulted in mitigation works which may alter flood behaviour. These are local by nature and their benefits would generally be considered in studies on flooding for the area and considered by the local authority in determining its flood hazard area.

In some cases the local authority may require the proponent to engage a suitably qualified professional to determine the defined flood event and/or to gain a more detailed understanding of flood behaviour at the location. This may include ascertaining the specific design criteria necessary for this standard and meeting other requirements established by the local authority.

In addition, flood behaviour can change with climate change, either due to sea level rise or increases in the intensity and frequency of flood producing rainfall events. In some cases this change will be significant, whilst in other cases it will be relatively minor. Sea level rise and increases in the intensity and frequency of flood producing rainfall events can alter flood flow velocities, water depths and levels in the design flood event (DFE). This could impact upon the flood hazard level (FHL) and therefore the flood hazard area and the minimum floor levels set for buildings and the locations within this area where development is allowable given the flood hazard and potential impacts upon other properties.

Managing changing flood risks due to climate change requires a combination of: effective land use planning considering changing flood hazard; flood mitigation measures that consider climate change impacts on flooding; emergency response strategies for flooding that are robust and can adapt for changes in flood behaviour; and building standards (such as minimum floor levels for new buildings) that can be adapted to allow for climate change over time.

The degree of these changes will vary with the location and the timeframe over which changes are managed and different jurisdictions and authorities may have different requirements. The relevant authority having jurisdiction can advice on how climate change impacts on flooding should be dealt with for the project in question.

Work has been undertaken both in Australia and overseas aimed at reducing the impacts of flooding on buildings through structural design and using compatible structural and non-structural building materials.. However, as most of Australian works are local in character, most Australian building professionals are not familiar with the issue and there is no other national guidance on the subject.

Since the discussion of this issue may touch on planning, building and non-building topics, the development of a Handbook is seen as the most appropriate vehicle for approaching the subject. This approach also satisfies the Council of Australian Governments principles for best practice regulation.

Other Handbooks by the ABCB

The ABCB has produced a range of Information Handbooks and other educational material including:

- Information Handbook – Energy Efficiency Provisions for BCA 2010 Volume One.
- Information Handbook – Energy Efficiency Provisions for BCA 2010 Volume Two.
- Information Handbook – Applying Energy Efficiency Provisions To New Building Work Associated With Existing Class 2 To 9 Buildings.
- BCA Awareness Resource Kit – Module 3: Understanding Energy Efficiency Provisions for Class 1 and 10 Buildings.
- BCA Awareness Resource Kit – Module 4: Understanding Energy Efficiency Provisions for Class 2 to 9 Buildings.

COMMENTARY ON THE STANDARD 'CONSTRUCTION OF BUILDINGS IN FLOOD HAZARD AREAS'

1 SCOPE AND GENERAL

C1.1 General

The scope of the ABCB Standard on Construction of Buildings in Flood Hazard Areas (the Standard) is restricted to the current NCC objectives of health, safety, amenity and sustainability. Therefore the Standard primarily focuses on structural safety and life safety, rather than protection of property or building contents.

The current NCC does not contain detailed construction practice for buildings in flood hazard areas. However, although not targeted at flooding, the NCC does require buildings to have structural resistance to the action of liquids, ground water, and rainwater ponding by requiring compliance with Australian Standards for structural design. The aim of the Standard is to provided more specific requirements for construction in flood hazard areas

The construction measures contained in the Standard are not the only measures that should be considered to address issues arising for buildings in flood hazard areas. There are other measures that are outside the scope of the Standard. The scope of this Handbook extends further than the scope of the ABCB Standard and provides additional information on these issues.

The ABCB develops minimum technical standards relating to the structural and fire safety, health, amenity and sustainability for inclusion in the NCC. The NCC applies to all new building design and construction work and subject to State and Territory legislation alternations and additions to existing buildings. The NCC does not apply to existing buildings not undergoing work, and is adopted by every State and Territory.

The issue of whether new buildings can be constructed in flood hazard areas is primarily a State/Territory or local government planning issue. Current building and planning regulations in a number of States and Territories enable local governments to define flood hazard areas and determine the height, above ground or defined flood level, to which the floor levels of habitable rooms must be built.

It is important to note that flood events are likely to arise or there will be locations in which the limitations stated in the Standard will be exceeded. Therefore, communities and households must be aware that all houses may not be protected during a major flooding event because of a number of factors. These factors may include-

(a) the flood event exceeds the defined flood event; or

(b) the flood water velocity exceeds 1.5m/s; or

(c) the depth of submersion of the lowest non-habitable floor exceeds 1m; or

(d) the flood level is higher than habitable floor level; or

(e) loss of foundation material due to excessive scour, mudslide or landslip; or

(f) excessive debris impact loading.

C1.2 Scope

The requirements of the NCC are applicable to all buildings. The Standard only specifies additional requirements and is not a comprehensive list of requirements for buildings in flood prone areas.

The Standard is a performance-based document. Buildings to be constructed in flood hazard areas are required to comply with the Performance Requirement in clause 2.3. The Performance Requirement lists various 'heads of consideration' that must be considered during the design process.

The Performance Requirement enables the design of a building to be constructed in flood hazard areas to be developed from first principles to maximise its potential to meet specific client needs for a specific site.

The Standard provides two pathways for compliance. One pathway involves formulating an Alternative Solution which complies with the Performance Requirement. This involves the application of engineering practice from first principles and requires designers to apply professional judgment on all design issues.

The other pathway involves compliance with the Deemed-to-Satisfy Provisions. These provisions only apply if certain limits such as maximum flow velocity and depth of submersion, are not exceeded. This does not mean that buildings cannot be constructed if they fall outside these limits. It means that such a proposal would need to be considered as an Alternative Solution under the relevant Performance Requirements and must be assessed accordingly.

The Alternative Solution pathway involves the application of engineering practice in combination with appropriate design consideration as an alternative to the requirements in Clauses 2.4 to 2.13.

C1.3 Application

C1.3.1 Identification of applicable flood-prone land

The term flood is used to describe the temporary condition of partial or complete inundation of normally dry land. The source of the flood could be the overflow of inland or tidal waters or the rapid accumulation of runoff or surface water from any source.

The identification of applicable flood hazard areas is a planning issue and State/Territory and/or local authorities should be consulted in this determination.

The DFE and DFL used by the authority having jurisdiction (usually the local authority) to manage flood risk to property is generally determined through land use planning in consideration of flood risk management and is often associated with a 1% chance of a flood of that size being exceeded in any given year or an annual exceedance probability of 1 in 100. However, other flood events or information may be used by the local authority to manage flood risk to buildings or the particular flood situation at the location in question and in setting both the DFE and DFL.

There are significant variations in the information available on flooding between areas within a local authority and between local authorities within Australia. This may result from the age of studies, the type of modelling undertaken, the information available to understand flood behaviour, or the reliance of historical flood information or estimates to provide an understanding of flood risk.

Flood investigations may have also resulted in mitigation works which may alter flood behaviour. These are local by nature and their benefits would generally be considered in studies on flooding for the area and considered by the local authority in determining is flood hazard area.

In many cases information about flow velocities may not be known or may be limited. Modelling of the DFE may provide average velocities at the peak of flow within an area rather than peak velocities at a specific location. Therefore it is unlikely that the local authority will have specific information on flow velocities at a particular site in all cases.

Existing development in more active flow areas, including floodways, is more likely to be subjected to higher velocities of flow than permitted by the Deemed to Satisfy Provisions and is also more likely to impact upon flood behaviour elsewhere. Any additional development or redevelopment in these areas is also likely to be exposed to more hazardous conditions it requires careful consideration and assessment. Also note that the flow velocities could also be expected to exceed the limits set in this Standard in many areas subject to local overland flooding.

The local authority may need to rely upon judgement upon where the Standard applies or request specific information from the proponent to determine whether the standard applies and provide key criteria for design. This may limit the application of the Deemed to Satisfy Provisions by the local authority to backwater and inactive flow areas in the DFE where it is less likely the velocity nominated in the Deemed to Satisfy Provision in the Standard would be exceeded.

In many cases detailed information on the depth of inundation at the development in question will rely upon the provision of survey advice from the proponent relative to flood level information determined in the DFE.

In some cases the local authority may require the proponent to engage a suitably qualified professional to determine the DFE and/or to gain a more detailed understanding of flood behaviour at the location. This may include ascertaining the specific design criteria necessary to enable consideration of the development in relation to the Standard and meeting other requirements established by the local authority.

The National Flood Information Database (NFID) shows there are at least 230,000 allotments below the 100-year ARI flood level. Of this figure, approximately 2/3 have a flood depth of less than 1m and approximately 3/4 have a flood depth of less than 1.5m.

C1.3.2 .Identification of applicable buildings

The Standard only applies to new Class 1, 2, 3, 4, 9a health care and 9c buildings and, subject to State and Territory legislation, alterations and additions to existing buildings of these classifications. Note also that the Performance Requirement in 2.3 is also limited to Class 1, 2, 3, 4, 9a health care and 9c buildings. That means buildings of other classes are not subject to any requirements of the Standard, including the Performance Requirement.

Note that a basement carpark under a Class 2 building for instance is usually classified as a Class 7 part of the building. Also, a garage associated with a house can be classified as a Class 10 part of the building. Class 7 and Class 10 parts of the building are not covered by the Standard.

Class 1, 2, 3, 4, 9a health care and 9c buildings under the NCC are defined as-

Class 1: one or more buildings which in association constitute—

(a) Class 1a — a single dwelling being—

(i) a detached house; or

(ii) one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, town house or villa unit; or

(b) Class 1b —

(i) a boarding house, guest house, hostel or the like—

(A) with a total area of all floors not exceeding 300 m2 measured over the enclosing walls of the Class 1b; and

(B) in which not more than 12 persons would ordinarily be resident; or

(ii) 4 or more single dwellings located on one allotment and used for short-term holiday accommodation,

which are not located above or below another dwelling or another Class of building other than a private garage.

Class 2: a building containing 2 or more sole-occupancy units each being a separate dwelling.

Class 3: a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including—

(a) a boarding house, guest house, hostel, lodging house or backpackers accommodation; or

(b) a residential part of a hotel or motel; or

(c) a residential part of a school; or

(d) accommodation for the aged, children or people with disabilities; or

(e) a residential part of a health-care building which accommodates members of staff; or

(f) a residential part of a detention centre.

Class 4: a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

Class 9: a building of a public nature—

(a) Class 9a — a health-care building, including those parts of the building set aside as a laboratory; or

(b) Class 9c — an aged care building.

Aged care building means a Class 9c building for residential accommodation of aged persons who, due to varying degrees of incapacity associated with the ageing process, are provided with personal care services and 24 hour staff assistance to evacuate the building during an emergency.

Health-care building means a building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

(a) a public or private hospital; or

(b) a nursing home or similar facility for sick or disabled persons needing full-time care; or

(c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

There is also an elevation requirement in Clause 2.7 which affects the usage of particular floor areas.

C1.4 Limitations

This Handbook is not intended to:

- override or replace any legal rights, responsibilities or requirements; or
- provide users with the specifics of the NCC.

This Handbook is intended to make users aware of provisions that may affect them, not exactly what is required by those provisions. If users determine that a provision may apply to them, the NCC should be read to determine the specifics of the provision.

C1.5 Normative References

These are the normative references referred to in this Standard. The use of other NCC referenced documents are also necessary in the design of buildings in flood hazard areas.

C1.6 Units

The Standard uses the SI units of kilogram (kg), metres (m), seconds (s), Pascals (Pa) and newtons (N).

C1.7 Definitions

The terms used in this Standard primarily come from the Glossary of Floodplain Management in Australia – Best Practice Principles and Guidelines.

C1.8 Notation

The Standard uses letters and symbols in the calculation of flood actions. These letters and symbols are defined in the Standard.

C1.9 Performance-based standards

Consistent with the NCC, the Standard is performance-based. The Standard contains performance requirements together with solutions which are deemed-to-satisfy the performance requirements.

C1.10 Design pathways

Because the Standard is performance-based, it allows a person to develop a solution which meets the performance requirements as an alternative to the prescriptive or deemed-to-satisfy provisions in the Standard.

2 BASIC DESIGN REQUIREMENTS

C2.1 Objective

This is the NCC structural provision objective restated to cover flood actions, with the inclusion of an objective relating to utility (eg electrical) failure.

C2.2 Functional Statement

This is the same as the NCC structural provision functional statement restated to cover flood actions.

C2.3 Performance Requirement

This is similar to the NCC structural performance requirement restated in terms of flood action.

C2.4 Deemed-to-Satisfy Provisions

Clause 2.5 to 2.13 are the deemed-to-satisfy provisions.

C2.5 Application

This establishes the application of the Deemed-to-Satisfy Provisions. For situations outside these limits, an Alternative Solution in accordance with the Performance Requirements would be necessary.

C2.6 Flood Actions

C2.6.1 General

Within the limiting applications of the Standard, a single process for determining flood actions is used for all types of floods. It is useful however to be aware that there are differences between flood characteristics, flood loads and flood effects in riverine and coastal areas in terms of wave effects, depth, duration, direction of flow and debris.

C2.6.2 Hydrostatic Actions

Hydrostatic actions are those caused by stagnant water either above or below ground surface and are equal to the water pressure multiplied by the surface area on which the pressure acts. They can be divided into vertical downward loads, lateral loads and upward loads (buoyancy).

C2.6.3 Hydrodynamic Actions

Hydrodynamic actions are those induced by the flow of water above ground level. They are usually lateral loads. Accurate estimates of flow speeds during flood are difficult to make. Designers should consult the relevant local government and specialists in this area.

Since the Deemed-to-Satisfy Provisions of the Standard are only applicable to flood hazard areas with maximum velocity of floodwater of 1.5 m/s, and a maximum depth of submersion of non-habitable floors of 1m in the DFE, a general drag coefficient of 1.25 has been nominated for simplicity rather than a table of drag coefficients for different shapes.

Clause 2.6.3 of the Standard provides a simple equivalent hydrostatic formula for the computation of the hydrodynamic forces. This formula is only valid for slow moving water (flow velocity less than 3 m/s) and building aspect ratio (width to height) less than 12. For situations outside these limits, a full engineering analysis should be carried out..

C2.6.4 Debris Actions

Design for debris impact actions is difficult because the nature and size of the potential debris is uncertain. However, there is guidance in specialist literature on this issue. Nevertheless, within the limited application of the Standard, reliance is placed on the general robustness of the building to cope with debris actions.

C2.6.5 Wave Actions from Wind and Wakes (excluding coastal waves)

Design for wave actions is possible and there is guidance in specialist literature on this issue. Within the limited application of the Standard, reliance is placed on the general robustness of the building to cope with wave actions. However, designers should investigate historical damages near a site to determine whether wave force can be significant and ought to be taken into account.

Sections 2.5.4 and 2.5.5 are adequate only if the application is limited to buildings within the currently proposed restrictions (1 metre inundation in slow moving water) but become more complex for buildings and general civil engineering structures subject to more severe conditions.

C2.6.6 Erosion and Scour due to Flood Actions (excluding coastal erosion)

Erosion and scour can affect the stability of the foundation and can increase the flood actions on buildings. The usual methods to mitigate the effects of erosion and scour are to increase the depth of the foundation embedment or to setback buildings from potential danger zones. Erosion protection measures should be undertaken if potential for erosion due to flood actions is serious.

C2.6.7 Combinations of Actions

It is expected that estimates of the flood depth and the flow velocity are made conservatively (95 percentile value estimate with 75% confidence) for the Defined Flood Event (DFE) which is the ultimate design condition. A load factor of 1.0 has therefore been adopted in the Standard.

In the absence of more accurate hydrological analysis, the maximum recorded flood level is a reasonable approximation of the statistically defined DFE provided that the record is at least for 30 years.

The US practice is slightly different from that proposed in the Standard. A load factor of 0.75 is used when combining with wind and other loads (for zone of similar hazard) and a load factor of 1.5 is used when dealing with buoyancy of storage tanks.

C2.7 Elevation Requirements

The Standard requires habitable floors to be above the Flood Hazard Level (i.e. the DFL plus the freeboard) and non-habitable floors to no more than 1m below the DFL (see figure C2.6).

Freeboard allows for wave action, local hydraulic factors, and some level of uncertainty in regard to the flood modelling and identification of the DFE. Freeboard for residential buildings would typically be a maximum of 0.5m unless the specific exposure factors at the location require a higher value. In shallow depths of local overland flow, often resulting from urban piped drainage system bypass, a smaller minimum freeboard of 0.3m is typically used.

The 1m maximum inundation of non-habitable floors only applies to an enclosed room with walls and does not apply where there are no walls (i.e. consists only of columns or posts). The flood action on an open structure is much less compared to a solid wall.

The reference to the floor level is a reference to the uppermost surface of the floor, not including any floor covering such as carpet or tiles.

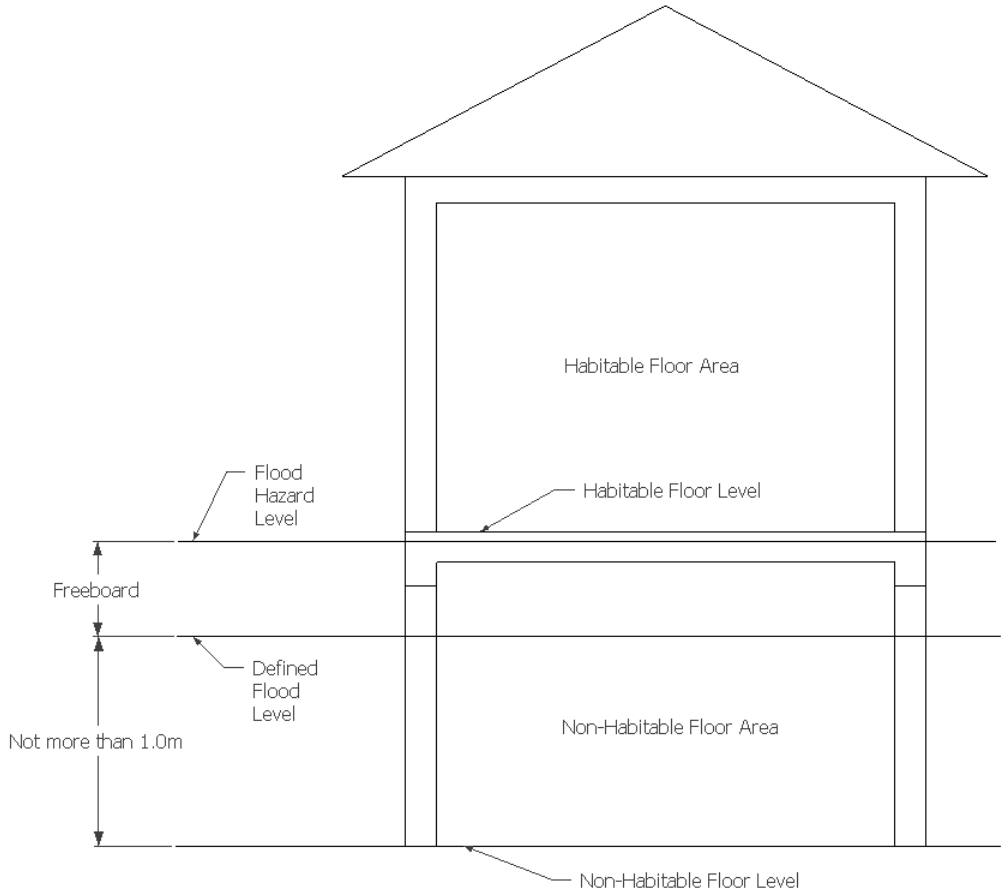

Figure C2.6 Elevation showing DFL

C2.8 Foundation Requirements

C2.8.1 General

Foundations must be designed to maintain the necessary support for the structure during a flood situation and in particular must be designed to prevent flotation, collapse or movement. The deemed-to-satisfy provisions of the Standard are limited to a maximum flow of 1.5m/s. At higher velocities, more engineering input needs to be taken to ensure the foundations remain structurally adequate.

C2.8.2 Geotechnical Considerations

As the flood flow velocity increases, the risk of foundation collapse and undermining of foundations by scour increases.

C2.8.3 Foundation Depth

Footing depth is dependant on a number of factors including foundation material, flood flow velocity, whether the foundation sits on fill or undisturbed soil, slope of land, and potential for landslip.

C2.8.4 Foundation Walls

If possible, dominant foundation walls should be oriented parallel to the direction of flood flow to minimise the flood actions.

C2.8.5 Piers, Posts, Columns or Piles

Use of piles is most appropriate if erosion is an issue. Use of piers, posts, columns and piles lessen the interference with the flow of flood water compared with the use of fill to achieve the required elevation.

C2.8.6 Use of Fill

Whether the use of fill is permitted in flood hazard areas needs to be checked with the authority having jurisdiction. Fill can reduce the capacity of the floodplain, exacerbate the flood risk or cause a nuisance for neighbouring property. Where the use of fill is permitted to elevate the house above the DFL or reduce potential inundation, care needs to taken to ensure the fill remains stable and is not adversely affected by erosion and scour.

C2.8.7 Use of Slabs-on-Grade

Flood hazard areas may restrict the construction option of a single storey house with a concrete slab-on-ground. Particularly where the use of fill is restricted, the elevation requirement means that the slab must be 0.5m above the DFL. Where this is not possible, an alternative construction method, such as an elevated house would need to be considered. Again, care needs to be taken to ensure the flood does not erode or scour the material supporting the slab.

C2.9 Requirements for Enclosures Below the DFL

The Standard only contains deemed-to-satisfy provisions for wet flood-proofing and not dry flood proofing. This means the flood water must be allowed to enter and leave the enclosure below the DFL to equalise the hydrostatic pressure on both sides of the external walls. The holes in the walls must be large enough so as not to become easily blocked by debris.

The openings should meet the following criteria-

(a) doors and windows should not be counted as openings but openings can be installed in doors and windows; and

(b) there should be a minimum of two openings on different sides of each enclosed area; and

(c) the total net area of all openings should be at least 1% of the enclosed area; and

(d) openings should permit a 75 mm sphere to pass through; and

(e) any opening covers should not impede the flow of water; and

(f) consideration should be given to prevent the openings from becoming blocked.

C2.10 Requirements for Structural Connections

Items such as decks and patios must be structurally adequate so as not to cause failure of the main building they are attached to. Any structure either designed to fail or not structurally adequate must be designed to not impact upon the structural adequacy of the building..

C2.11 Material Requirements

All materials used in the construction of the building must conform to the appropriate requirements of the NCC, including its referenced documents. In addition, materials that are exposed to water inundation should be given further consideration of their properties when wet in deciding whether they are suitable for use. These include-

(a) likely duration of exposure to wetness

(b) changes to dimensions and strength when wet

(c) water absorption rate and required drying time, (d) cost and feasibility of replacement of components.

The Deemed-to Satisfy provisions of the Standard are only applicable for wet flood proofing. If dry flood proofing method is used, the proposed solution should be assessed as an Alternative Solution under the NCC requirements

With wet flood proofing, the water is allowed to enter the building to reduce the built-up of hydrostatic pressure between the flood water and the inside of the building. The structural materials used below the DFL must therefore be water resistant to minimise the resulting damage.

Designers and building owners may choose to select water resistant non-structural materials for wall linings etc. However, there is an argument that it may be more cost effective to use non-water resistant non-structural materials (eg ordinary plasterboard), as such material can readily

be removed to allow any cavities to drain and the structural members to fully dry out after inundation, and then later replaced with new material.

The deemed-to-satisfy provisions in the Standard do not include provisions relating to dry flood proofing. For dry flood proofing, the building or relevant parts of the building envelope are made substantially impermeable to flood water. If this method is proposed, it would need to be considered on a case by case basis under the performance requirements. If this method is used, care must be taken to ensure the structural adequacy of the envelope of the dry food proofing part of the building to carry the differential hydrostatic pressure (in addition to the hydrodynamic action) created by the flood water. This pressure is quite severe and could cause major structural damage if not properly accounted for.

For further information on suitability of materials subject to flood inundation refer to Appendix C.

C2.12 Requirements for Utilities

TO BE CONFIRMED AFTER OBTAINING ADVICE FROM RELEVANT REGULATORS

C2.12.1 General

Utilities and associated equipment, if exposed to flood water (i.e. located below the DFL) should be designed, constructed and installed to prevent floodwater from entering and accumulating within the system.

Utilities and associated equipment should also be anchored to resist the forces generated by the flood (such as buoyancy) and should not be mounted on items or structures that could break away during the flood.

C2.12.2 Electrical systems including photovoltaic systems

Electrical service conduits and cables below the DFL should be waterproofed. Underground service conduits and cables should be buried at a depth sufficient to prevent damage caused by erosion and scour. Meters and switches should be mounted above the DFL and made accessible during the flood.

C2.12.3 Plumbing and drainage

Plumbing systems include sewage and waste water disposal facilities, and hot/cold water supply.

C2.13 Requirements for Egress

During a *defined flood event*, it may be necessary for emergency services or other person to rescue people trapped in a house by flood waters. Rescue could be by boat. Therefore, a

means of exiting the house must be available to allow rescue. The exit route could be from a balcony, verandah, deck, door or openable window of sufficient size.

For further information on egress and evacuation before or during a flood, refer to the AEM series documents on Flood Safety.

C2.14 Additional State or Territory requirements

Refer Appendix B.

C2.15 Publications

Various references and publications containing information that may be assistance to designers or relevant authorities are listed in Sections 5 and 6.

3 ADVISORY INFORMATION

C3.1 General

This Section provides supplementary, non-mandatory information to the Standard with the aim of improving resilience (or reducing vulnerability) of buildings when subject to flooding. The Standard was designed mainly to cope with infrequent flooding of the order of 1 in 100 annual probability.

This Section provides:

(a) Background information to the Standard requirements.

(b) Information on performance of types of construction and of materials under flooding conditions.

(c) Guidance on rehabilitation of buildings after a flood event.

(d) Sources for further information.

All references made in this Section are listed in Section C3.5

C3.1.1 Flooding in Australia

In Australia, floods cause more damage on an average annual basis than any other natural disaster. From 1967 to 1999, the total cost of floods has been estimated at $10.4 billion or 29% of the average proportional annual cost of natural disasters. In addition, during the same period, floods were responsible for 18% of fatalities caused by natural hazards[Error! Bookmark not defined.].

Historically our towns developed on riverbanks to facilitate the shipping of goods to and from the settlements, and where fertile soil existed, but this also left them vulnerable to flooding. Many towns have some mitigation works to reduce this risk, but flood risk remains for floods larger that the design floods used for these mitigation works.

C3.1.2 Floodplain management

Floodplain management t is outside the scope of this section and interested readers are referred to ‘Flood plain management in Australia: Best practice principles and guidelines’

SCARM Report 73, AEM Series Documents including 'Managing the Floodplain' or relevant State Manuals, such as the NSW Floodplain Development Manual[1].

Floodplain management is a partnership between government and the community using a range of measures to reduce the risks to people, property and infrastructure and therefore goes well beyond the scope of the standard.

It requires a different mix of measures to manage flood risk to existing developed areas and future developed areas. This mix of measures will vary with location as there is no one size fits all solution to managing flooding.

Best floodplain management practice as outlined in SCARM and the AEM series document Managing the Floodplain recommends the preparation of floodplain management plans to outline how the full range of flood risk faced by a community and its people, property and infrastructure, can be managed at a particular location. In new development areas it provides guidance to inform strategic decisions on where, what and how to develop the floodplain whilst aiming to manage residual flood risk to an acceptable level. Local authorities can use land use planning controls to influence the long term development of an area in consideration of flooding, by restricting the location of development (zonings) and placing conditions (controls) on it.

New development areas can be located away from: floodways, through which the main floodwaters flow; areas where the velocity and depth of floodwaters can be particularly hazardous; and where it is not possible for people to easily self evacuate to flood free areas and there is no practical alternative. Within the remaining developable land, additional conditions can reduce the exposure of the new development to flooding. These controls can include: minimum fill levels for land; minimum floor levels for buildings and other structural requirements (such as identified in the Standard); and the ability to evacuate people to flood free areas (with the latter considering the full range of flood risk).

For existing development areas flood risk is harder to manage due to the scale of development and the practicality, effectiveness and affordability of large scale mitigation measures. Redevelopment or extensions (and there occupants) to existing development in these areas may be exposed to a higher degree of hazard (velocity and depth) in the defined flood event or events up to the probable maximum flood (PMF) than those in new development areas, where planning controls can more effectively be used to reduce risk.

This Guideline and the Standard are only concerned with the construction of buildings in flood hazard areas. The DFE and DFL used by the authority having jurisdiction to manage flood risk

[1] Agriculture and Resource Management Council of Australia and New Zealand, SCARM Report 73, *Flood plain Management in Australia: best practice principles and guidelines*, CSIRO, 2000

to property is generally determined in land use planning in consideration of flood risk management and is often associated with a 1% chance of a flood of that size being exceeded in any given year or an annual exceedance probability of 1 in 100. However, other flood events or information may be used by the local authority for managing flood risk to buildings or the particular flood situation at the location in question and in setting both the DFE and DFL.

A recent survey by National Flood Information Database (NFID) shows at least 230,000 allotments below the 1% AEP flood level. Approximately 2/3 of these have a flood depth of less than 1m and approximately 3/4 have a flood depth of less than 1.5 m.

It is important to note that for the purposes of the Standard and this Handbook, the DFE does not define the extent of flood-prone land which is defined by the Probable Maximum Flood (PMF). The PMF is the largest flood that could conceivably occur at a particular location, resulting from the probable maximum precipitation. Generally it is not physically or financially possible to provide general protection against this event. The AEP for the PMF event is commonly assumed to be in the order of 10^{-4} to 10^{-7}. Therefore buildings built to the Standard may face higher velocities and depths than the DFE may generate.

The Standard proposes that buildings can be constructed with a depth of inundation to the lowest non-habitable floor of 1 m below the 1%AEP flood level. However, it also allows the authority having jurisdiction to select its own DFE which could be higher or lower than the default level in the Standard. Habitable floor levels are all o be at or above the FHL.

C3.1.3 Wet flood proofing principle

The Standard is based on the 'wet flood proofing' principle i.e. the flood water is intentionally allowed to enter and leave the building. The alternative approach is called 'dry flood proofing' i.e. the flood water is prevented from entering the building by either permanent or temporary barriers. 'Dry flood proofing' is considered not suitable for the majority of buildings in Australia because the hydrostatic forces are not equalised on both sides of the external wall, as is the case for wet flood proofing. Also, most houses would allow rising water to enter via gaps around door openings, weep holes, ventilation grilles and the like. Therefore, traditional house construction practice may not be suitable for dry flood proofing. If such a solution is proposed, it will be necessary to assess it under the 'Alternative Solution' provisions of the NCC.

'Wet flood proofing' will reduce the hydrostatic forces on the building elements, but it will require consideration of the effect of water immersion on building materials and assemblies.

The objective of the Standard is to minimise the damage to the structural components of a buildings which is expensive to repair and could lead to structural collapse. The rehabilitation of a flooded building should involve only cleaning, content replacement and minor repairs. However, if flood water can for example enter a wall cavity, wall linings may need to be removed to clean the cavity and allow structural members to dry out.

C3.1.4 Velocity of flood water

The Standard places a limit on its applicability on a maximum average velocity of flood water of 1.5 m/s. This is consistent with the FEMA standard[2]. However, other studies[3] show that wading by adults becomes difficult and dangerous when the depth of still water exceeds 1.2 metres or when the velocity of shallow water exceeds 0.8 metres per second. Safety is further compromised if the occupant is a child, elderly, infirm or fearful.

This means that where high set houses with non-habitable rooms underneath which have floor levels below the FHL are constructed, that if occupants try to evacuate once the DFL has been reached that they will be more exposed to hazardous conditions when evacuating. This highlights the importance of effective evacuation strategies that facilitate the evacuation of all affected residential buildings (including for aged care and health care facilities) before effective evacuation access is lost. Residents and emergency response planning would need to be made aware of such limitations.

The flow of water around a building in a flood event is a complex problem. A building in an open field is subject to a flow velocity similar to the 'Greenfield' velocity of the site (predevelopment). However as the density of buildings increases, the local flow velocity also increases and could be up to four times the 'Greenfield' velocity. Appendix B of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] gives some guidance on the determination of velocity of flood water.

Since the forces on the building increase with the square of the velocity, building in areas subject to fast moving flood water should be avoided because of increasing risk to people and properties. A doubling in velocity means a quadrupling of the magnitudes of the hydrodynamic forces on the building.

C3.2 Structural Design

C3.2.1 Flood actions

Section 3.1, 3.2 and Appendix A of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] contains some explanations of the flood actions that may cause building

[2] FEMA 348 Protecting Building Utilities from Flood Damage: Principles and Practices for the Design and Construction of Food Resistant Building Utility Systems

[3] Summarised in Cox, R. 2011 *People and vehicle safety in flooding waters.* Presentation to NSW Floodplain Management Association Conference, Tamworth 24 February 2011.

[4] Hawkesbury-Nepean Floodplain Management Steering Committee, 2006, *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas*, Parramatta, June 2006

damage. ASCE Standard ASCE/SEI 7-05 also contains useful information on the calculation of flood actions.

There are important differences in flood actions for different kinds of floods in riverine and coastal areas. For example, potential effects of wave actions are greater in coastal areas while flood duration can be much longer in riverine areas etc. The flood actions referred to in the Deemed-to-Satisfy provisions of the Standard are mainly directed at riverine areas with slow moving or stagnant water.

Hydrostatic actions are actions arising from pressure exerted by still water. The hydrostatic pressure at any point is always equal in all directions and acts perpendicular to the surface on which it is applied. The hydrostatic pressure induce horizontal forces which act on vertical and inclined surfaces of buildings such as walls and vertical forces (up and down) which act on horizontal and inclined surfaces of buildings such as floors. Vertical forces include buoyancy which generates an uplift force equal to the weight of the water being displaced. These forces make it difficult to dry proof buildings structurally. A water differential level of 100 mm can cause the plasterboard to break and a differential level of 1000 mm can cause damage to a brick wall. For wet proofed buildings, both of these forces from outside of the building are largely counteracted by those from the inside of the building and only the water differential level between inside and outside needs to be considered. Buoyancy effects however can be important for lightweight buildings and empty storage tanks and these items need to be structurally secured.

Hydrodynamic actions are actions arising from moving water. These induce forces which are proportional to the square of the flow velocity. These forces can be quite large. The SCARM Report**Error! Bookmark not defined.** identifies that wading by able bodies adults becomes difficult and dangerous when the depth of still water exceeds 1.2m, when the velocity exceeds 0.8m/s, and for various combinations of depth and velocity between these limits. The SCARM Report also states that at velocities in excess of 2m/s, the stability of foundations and poles can be affected by scour. Also, at depths in excess of 2m, lightly framed buildings can be damaged by water pressure, flotation and debris impact, even at low velocities. The SCARM Report also identifies the degree of flood hazard depending on a variety of factors including flood depths and velocities. It identifies high hazard (ie fit adults have difficulty in wading to safety) when the maximum flood depth is up to 1m and maximum velocity is up to 1.5m/s. The Hawkesbury-Nepean Guidelines[4] find that a house subjected to flood water flowing at a velocity exceeding 1.5 m/s, half way up the wall (or approximately 1.2 m deep) could suffer damage to the cladding and/or frame.

The calculation of the forces generated by moving water is complex and dependent on the shape and size of the building. The Standard provides a simple equivalent hydrostatic formula which is only valid if the flow velocity is less than 3 m/s and the aspect ratio (width to height ratio) is less than 12. For situations outside these limits, a proper engineering analysis should be carried out.

Debris actions are actions arising from impacts of debris floating in moving flood water. There is wide variation in impact loads depending on the nature of the debris and the velocity of the flood water. ASCE Standard 7-05 Section C5.4.5 provides a detailed discussion on the treatment of debris actions. It is generally considered that most of the currently used cladding systems in Australia are sufficiently robust to resist the impacts of objects 'normally encountered' for design conditions envisaged in the Standard.

Wave actions are actions arising from water wave propagating over surface water striking the building. Forces are generated by wave breaking on the surface of the building, uplift caused by shoaling wave beneath the building, wave run up and wave induced drag and inertia forces. Wave load calculation procedure is available in ASCE Standard 7-05. Wave action should be considered for flooding in the coastal zones. However, for the design conditions where this Standard is applicable, wave action is not considered to be a major factor in design.

Erosion and scour: These terms are used to indicate a general (erosion) or local (scour) lowering of the ground surface because of the flood actions. Erosion and scour can affect the stability of the foundation and lead to footing failures and therefore should be considered in design.

C3.2.2 Foundation design

Earthwork should be carried out in accordance with AS3798 -1996[5] .

Footings should be constructed in accordance with AS2870 – 1996[6]. It should be noted that for expansive soil, AS2870 only considers moisture movement under normal seasonal conditions. More damage therefore could be expected when the foundation is subjected more extreme conditions during and after a flooding event.

Issues concerning foundation design include:

(a) Erosion and scouring caused by flowing water.

(b) Collapse of soil caused by saturation.

(c) Soil piping.

(d) Batter slumping.

(e) Swelling and shrinking of soils following the movement of water.

[5] AS3798 -1996 'Guidelines on Earthworks for Commercial and Residential Developments'

[6] AS2870 -1996 'Residential Slabs and Footings'

Designers should have some knowledge of the site soil properties and site characteristics to assess whether any or all of the above issues are relevant. Section 3.4 and 4.1 of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] provides more discussion on these issues.

C3.2.3 Building types

The Standard requires habitable floors to be placed at least 0.5 m above the DFL. This will put single storey slab-on-ground dwellings at a disadvantage if built on flood-prone land. The two-storey dwelling provides a better option in term of reducing flood damage to both the structure and its content. The elevated (high set) dwelling is another option worth considering. Section 4.2 of Reference [1] provides further discussion on building types.

C3.2.4 Construction materials

Distinction between structural and non-structural components should be made in the selection of construction materials used in parts of the building that subject to inundation. The Standard only requires structural components to be water resistant for the duration of the flood.

There are different levels of material water resistance:

(a) Materials that are weakened when wet.

(b) Materials that are stable but porous that will need drying out after the flood.

(c) Materials that are not porous and not weakened when wet.

Material properties are also affected by the duration of the immersion (that could be as long as a week) and the quality of the flood water. Long term problems may also arise if inadequate attention is given to the cleaning up or in not allowing the structural members to dry out sufficiently (such as corrosion in steel and decay in timber). The selection of appropriate materials is also influenced by the ease and cost of repair and/or replacement. Section 4.3 of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] provides further discussion of the suitability of various materials for construction on flood-prone land. Further information can also be obtained from the FEMA Bulletin on Flood Damage-Resistant Materials[7].

[7] FEMA Flood Damage-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program Technical Bulletin 2 / August 2008

C3.2.5 Construction elements

Construction elements that are affected by water immersion under the terms of the Standard are the foundation, ground floor and walls.

(i) Foundation

The foundation may fail due to erosion of the supporting soil or excessive settlement. Section 5.1 of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] provides information on the advantages and disadvantages of different types of footing design.

(ii) Ground floor

Concrete floors are relatively unaffected by water immersion. Wood-based flooring materials are affected by immersion at varying degrees. Insulation of floors is also affected by flood water. Section 5.2 of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4] provides further discussion on these issues.

(iii) Walls

Walls should be able to resist the additional hydrostatic and dynamic pressures from flood water. The wall should also be robust to resist any debris loading. Issues may also arise from the support settlement while drying out.

Brickwork normally performs satisfactorily but minor cracking could occur if situated on expansive soil. External claddings such as timber, fibre cement, plastic or aluminium are not likely to be affected by flood water.

Silt may be deposited in wall cavities in framed construction and water trapped in the cavities may cause longer term problems. Internal wall lining such as plaster board may need to be removed to clean the cavity and allow the structural members to dry out.

Section 5.3, 5.4, 5.5 and 5.6 of the Guideline on Reducing Vulnerability of Buildings to Flood Damage[4]] provide further information on these issues.

C3.3 Non-Structural Design

C3.3.1 General

Non-structural issues are mainly concerned with the protection of utilities such as electrical, plumbing, and heating, ventilation, and air-conditioning (HVAC) and other mechanical services in the event of flooding.

The protection of utilities is necessary since damage to equipment and disruption of utility services can cause a building to be uninhabitable even if the structure itself is not damaged.

The general rule is to place all these systems, including the control devices, above the DFL if at all possible. The placement of these systems is usually controlled by authorities having jurisdiction in regard to these systems and the authorities should be consulted and/or advised about potential flood problems. Reference [7] provides general advice on the protection of utilities.

C3.3.2 Electrical

Where possible, wiring should be placed above the DFL. A practical option could be to place wiring in the roof space or the floor above and extend down the wall. The meter box, switch board, power points and switches in particular should be elevated above the DFL to gain extra protection. Conduits should be installed to ensure that water will be drained freely if subject to immersion.

Fixed electrical equipments such as air conditioners and hot water systems should be mounted above the DFL to reduce the chance of inundation.

C3.3.3 Sewerage

The main issue with sewerage systems during flooding is to prevent the backflow of sewage into the building. Backflow protection devices should be fitted for this purpose.

C3.3.4 Storage tanks

The main issue with storage tanks is the possibility that they may float or pop out of the ground due to buoyancy and therefore they should be designed to resist the uplift forces. Above ground tanks should be placed above the DFL if possible.

C3.4 Assessment and Repair of Flood Damage Buildings

The assessment and repair of flood damage buildings is an important issue for health and safety reasons as well as to prevent longer term structural problems. The BRANZ Bulletin 455[8] and the Timber Queensland Guide to Assessment and Repair of Flood Damaged Timber and Timber Framed Houses[9] should be consulted for further information.

Additional matters to check after inundation by flood waters include whether the termite management system has been compromised, particularly chemical systems, integrity of flashings, and monitoring of residue moisture and the presence of mould.

[8] BRANZ BULLETIN 455 Restoring A House After Flood Damage, December 2004

[9] Timber Queensland, Guide to Assessment and Repair of Flood Damaged Timber and Timber Framed Houses Technical Guide (Revised 19th Jan 2011)

C3.5 Identification of flood hazard areas

The DFE and DFL used by a local authority to manage flood risk to property is generally determined in land use planning in consideration of flood risk management and is often associated with a 1% chance of a flood of that size being exceeded in any given year or an annual exceedance probability of 1 in 100. However, other flood events or information may be used by the local authority for managing flood risk to buildings or the particular flood situation at the location in question and in setting both the DFE and DFL.

There are significant variations in the information available on flooding between areas within a local authority and between local authorities within Australia. This may result from the age of studies, the type of modelling undertaken, the information available to understand flood behaviour, or the reliance of historical flood information or estimates to provide an understanding of flood risk. This will mean different levels of information availability.

Flood investigations may have also resulted in mitigation works which may alter flood behaviour. These are local by nature and their benefits would generally be assessed in studies for the area and considered by the local authority in determining is flood hazard area.

In many cases information about flow velocities will not be known or will be limited. Modelling of the DFE may provide velocities at the peak of flow within an area rather than peak velocities at a specific location. Therefore it is unlikely that the local authority will have specific information on flow velocities at a particular site in all cases.

Existing development in more active flow areas, including floodways, is more likely to be subjected to higher velocities of flow than permitted by the Deemed to Satisfy Provisions and is also more likely to impact upon flood behaviour elsewhere. Any additional development or redevelopment in these areas is also likely to be exposed to more hazardous conditions it requires careful consideration and assessment. Also note that the flow velocities could also be expected to exceed the limits set in this Standard in many areas subject to local overland flooding.

The local authority may need to rely upon judgement upon where the Standard applies or request specific information from the proponent to determine whether the standard applies and provide key criteria for design. This may limit the application of the Deemed to Satisfy Provisions by the local authority to backwater and inactive flow areas in the DFE where it is less likely the velocity nominated in the Deemed to Satisfy Provision in the Standard would be exceeded.

In many cases detailed information on the depth of inundation at the development in question will rely upon the provision of survey advice from the proponent relative to flood level information determined in the DFE.

In some cases the local authority may require the proponent to engage a suitably qualified professional to determine the DFE and/or to gain a more detailed understanding of flood behaviour at the location. This may include ascertaining the specific design criteria necessary to enable consideration of the development in relation to the Standard and meeting other requirements established by the local authority.

C3.6 Appropriate location of and control of development in flood hazard areas through land use planning

Best floodplain management practices, as outlined in SCARM and the AEM Series Document Managing the Floodplain recommends the preparation of floodplain management plans to outline how the full range of flood risk faced by a community and its people, property and infrastructure, can be managed at a particular location.

In new development areas floodplain management plans provide information to guide strategic decisions on where, what and how to develop the floodplain whilst reducing residual flood risk to an acceptable level. Local authorities can use planning controls to influence the long term development of an area in consideration of flooding, by restricting the location of development (zonings) and placing conditions (controls) on it.

New development areas can be located away from: floodways, through which the main floodwaters flow; areas the velocity and depth of floodwaters can be hazardous; and where it is not possible for people to readily self evacuate to flood free areas and there is no practical alternative. Within the remaining developable land, additional conditions can reduce the exposure of the new development to flooding. These controls can include: minimum fill levels for land; minimum floor levels for buildings and other structural requirements (such as identified in the Standard); and the ability to evacuate people to flood free areas (with the latter considering the full range of flood risk).

In existing development areas flood risk is harder to manage due to the scale of development and the practicality, effectiveness and affordability of large scale mitigation measures. Redevelopment or extensions to existing development and its occupants in these areas may be exposed to a higher degree of hazard (velocity and depth) in the defined flood event or events up to the probable maximum flood (PMF) than those in new development areas, where planning controls can more effectively be used to reduce risk.

This Guideline and the Standard are only concerned with the construction of buildings in flood hazard areas. The DFE and DFL used by a local authority to manage flood risk to property is generally determined in land use planning in consideration of flood risk management and is often associated with a 1% chance of a flood of that size being exceeded in any given year or an annual exceedance probability of 1 in 100. However, other flood events or information may be used by the local authority for managing flood risk to buildings or the particular flood situation at the location in question and in setting both the DFE and DFL.

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Appendix A NCC Extracts

BCA Volume Two (similar provisions in BCA Volume One)

P2.1 Structural stability and resistance to actions

(a) A building or structure, during construction and use, with appropriate degrees of reliability, must—

(i) perform adequately under all reasonably expected design actions; and

(ii) withstand extreme or frequently repeated design actions; and

(iii) be designed to sustain local damage, with the structural system as a whole remaining stable and not being damaged to an extent disproportionate to the original local damage; and

(iv) avoid causing damage to other properties,

by resisting the actions to which it may reasonably be expected to be subjected.

(b) The actions to be considered to satisfy (a) include but are not limited to—

……

(vi) liquid pressure action; and

(vii) ground water action; and

(viii) rainwater action (including ponding action).

P2.2.1 Surface water

(a) Surface water, resulting from a storm having an average recurrence interval of 20 years and which is collected or concentrated by a building or sitework, must be disposed of in a way that avoids the likelihood of damage or nuisance to any other property.

(b) Surface water, resulting from a storm having an average recurrence interval of 100 years must not enter the building.

Limitation:

P2.2.1(b) does not apply to a Class 10 building where in the particular case there is no necessity for compliance.

Appendix B Additional State and Territory requirements

The following provides a summary of relevant State/Territory flood related building and planning provisions. The information was provided by the State/Territory administrations in October/November 2010.

B.1 Northern Territory (NT)

Part 10 (Areas liable to flooding) of the NT Building Regulations under the Building Act regulates buildings in flood prone areas.

Reg 37 (Flood prone areas) specifies that the parts of the Territory included in Schedule 4 are prescribed as flood prone areas.

Reg 38 (Flood levels) specifies that the flood level for a flood prone area is the 1 in 100 year flood level. However, the Director may also determine the flood level.

Reg 39 (Requirements in flood prone areas) specifies that in relation to a building constructed in a flood prone area:

(a) the height of the lowest floor level, or lowest part of the floor level, of a habitable room shall be not less than 300 mm above the flood level;

(b) the structural design of the building shall be adequate to withstand flooding giving consideration to:

(i) the site, size and shape of the building;

(ii) the effect of buoyancy on the sub-structure of the building; and

(iii) the stresses that the depth and velocity of water and the impact of water borne debris may have on the structure.

NT Planning Scheme Clause 6.14 (Land subject to flooding and storm surge) specifies that in a Defined Flood Area (ie the area that is inundated by the 1% Annual Exceedence Probability flood event):

(a) the minimum floor level of habitable rooms should be 300mm above the flood level for the site; and

(b) the use of fill to achieve required floor levels should be avoided.

Local Governments have no powers to develop their own building, planning or other requirements to control the construction of buildings in flood prone areas

B.2 Australian Capital Territory (ACT)

The ACT's main urbanised area is greater Canberra, and as Canberra is comparatively new, and "intensively designed", there are notionally no relevant "flood prone areas" available for construction. Isolated settlements and pre-ACT villages incorporated into the ACT have no flood prone areas available for construction either, (Hall village, Tharwa village, Uriarra settlement, Oaks Estate, etc).

Government controls release of new land for urbanisation and ensures land is not released for construction in flood prone areas.

B.3 Western Australian (WA)

Planning and Development Act 2005

Town Planning (Buildings) Uniform General By-laws 1989

Section 23. Land liable to flooding - A building shall not be constructed on land defined by the council as being liable to flooding or inundation.

Many of the 'at risk' local governments incorporate provisions into their individual Town Planning Schemes (TPS). Each TPS is different but a general overview is that developments require planning approval, council has power to not issue approval in areas at risk flooding, ability for council to liaise with other government departments (such as Department of Water) minimum FFLs may be determined by council.

Examples of WA Local Government Flood Prone Planning Policies

B.3..1 Shire of Beverley TPS No. 2

Clause 4.5 Flood Prone Areas provides the process and conditions for how developments on land identified within the extent of a 1 in 100 year flood for Avon River will be dealt with. Including—

1. Developments will require planning approval

2. Council will consult with the Water Authority of Western Australia

3. Council may determine the FFL for any buildings in the planning application.

B.3..2 Shire of York TPS TPS 2

Clause 5.4 Avon River Flood Fringe provides 8 provisions that deal with the development of land within flood plan areas identified in the Avon River Flood Study. Including no development in these areas if the council or water agency thinks that is appropriate, requirement for planning approval, minimum FFL heights, fencing, and rehabilitation of land.

B.3..3 Shire of Moora TPS 4

4.10 LAND LIABLE TO FLOODING

Notwithstanding anything elsewhere appearing in the Scheme development of land identified in the Moore River Flood Study adopted by the Water and Rivers Commission as within the extent of 100 year flood shall be subject to the following:

a) in addition to a building licence, the Council's planning approval is required for all development including a single house and such application shall be made in accordance with the provisions of the Scheme.

b) in determining an application for planning approval the Council shall consult with the Water and Rivers Commission.

c) development which includes a building or structure shall not be permitted unless in accordance with recommendations of the Water and Rivers Commission.

d) the Council may accept that an applicant consults with the Water and Rivers Commission and demonstrates compliance with the recommendations of the Water and Rivers Commission to the satisfaction of the Council in which case the Council is not required to act in accordance with paragraph (b) of this sub-clause.

B.3..4 Shire of Carnavon TPS 10

Clauses 6.8 and 6.9 deal with flooding and storm surge.

Cyclonic Storm Surge Affected Areas

Areas subject to the potential threat of inundation by cyclonic storm surge are given consideration in respect to floor heights and structural adequacy.

Flood Prone Areas

Where any development is proposed which is in area or location subject to the influence of - flooding (river overflow); flood (localised drainage problems); or storm surge, it is to be assessed for construction systems and floor heights to enable the development to be adequately above the estimated flood level for that location.

B.3..5 City of Mandurah TPS No. 3

5.5.5 Land Subject to Flood Risk, Damage, Hazard or Erosion by Water

Council shall not approve development on land that is subject to flood risk, damage, hazard or erosion by water unless the owner is prepared to indemnify Council against any claim for damages and to charge the land with the indemnity. Development shall not be permitted even

with such indemnification where the development would cause problems relating to flood management, environmental degradation or erosion, or the land is flood prone.

B.4 Victoria (VIC)

Building Regulations 2006, Regulation 802(2) sets out the purposes of Regulation 802, what is considered to be land that is in an area liable to flooding.

Land can be identified in a planning scheme under the *Planning and Environment Act 1987* as being in an area liable to flooding.

Land may be designated by the relevant council as being in an area liable to flooding if it is likely to be flooded by waters from a waterway or any land upon which water concentrate (see para (d)(i) and (ii).

Building Regulations 2006 - Regulation 802

Flood areas

(1) This regulation does not apply to-

(a) a Class 10 building; or

(b) an unenclosed floor area of a building; or

(c) an alteration to an existing building if the area of the existing building is not increased by more than 20m2.

(2) For the purposes of this regulation, land is in an area liable to flooding if-

(a) by or under the *Water Act 1989* it is determined as being liable to flooding (however expressed); or

(b) it is identified in a planning scheme under the *Planning and Environment Act 1987* as being in an area liable to flooding; or

(c) it is described on a certified or sealed plan of subdivision or plan of strata subdivision or plan of cluster subdivision (as the case requires) as being liable to flooding (however expressed); or

(d) it is designated by the relevant council as likely to be flooded by waters from-

(i) a waterway, as defined in section 3 of the *Water Act 1989*; or

(ii) any land upon which water concentrates or upon or over which surface water usually or occasionally flows (whether in a defined channel or otherwise) including land affected by flow from a drainage system.

(3) The report and consent of the relevant council must be obtained to an application for a building permit if the site is on an allotment that is in an area liable to flooding.

(4) The report and consent of the relevant council under subregulation (3) need not be obtained to an application for a building permit if-

(a) a planning permit is required for the construction of the building; and

b) the relevant planning scheme regulates the level of the lowest floor of the building in relation to any flood level declared under the Water Act 1989 or otherwise determined by the floodplain management authority or the relevant council.

(5) The relevant council must not give its consent under subregulation (3) if it is of the opinion that there is likely to be a danger to the life, health or safety of the occupants of the building due to flooding of the site.

(6) In its report under subregulation (3) the relevant council may specify a level for the surface of the lowest floor of a building on the site.

(7) Before specifying a floor level under subregulation (6) the relevant council must-

(a) consult with the floodplain management authority for that site; and

(b) specify a level at least 300mm above any flood levels declared under the Water Act 1989 or otherwise determined by the floodplain management authority, unless the authority consents to a lower floor level.

(8) The relevant council must without delay advise the floodplain management authority and the sewerage authority for that site of the floor level (if any) specified under subregulation (6).

B.5 Queensland (QLD)

The *Sustainable Planning Act 2009* provides that a planning scheme must not include provisions about building work, to the extent the building work is regulated under the *Building Act 1975* (BA).

Section 31 of the BA provides a head-of-power for local governments to include building provisions in a planning scheme if permitted by a regulation.

Section 13 of the *Building Regulation 2006* (BR) states:

(1) a local government may, in a planning scheme or by a temporary local planning instrument under the Planning Act or a resolution –

(a) designate part of its area as a natural hazard management area (flood); and

(b) declare the level to which the floor levels of habitable rooms as defined under the NCC of buildings on the land must be built.

(2) The local government must, in designating a natural hazard management area (flood), comply with 'State Planning Policy1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide', adopted by the Minister on 19 May 2003.

(3) The local government must keep a register of the natural hazard management areas (flood) it designates and when each designation was made.

Natural hazard areas (flood) can be designated through a provision of a local law, planning scheme or local government resolution.

The State Planning Policy 1/03 (SPP) sets out the State's interest in ensuring the natural hazards of flood, bushfire and landslide are adequately considered when making decisions about development. The SPP informs the way in which local planning instruments address natural hazards.

The SPP states that, generally, the appropriate flood event for determining a natural hazard management area (flood) is the 1% Annual Exceedance Probability (AEP) flood. The SPP is currently under review and will consider the outcomes recommended from both the Victorian Bushfires Royal Commission and the Queensland Floods Commission of Inquiry.

The policy can be accessed at: http://www.dlgp.qld.gov

Provisions in the SPP which are of particular relevance to floods include A1.1, A3.1, A3.2, A4.2, and A5.2.

B.6 New South Wales (NSW)

In NSW local government councils are responsible for managing their flood risk. They are encouraged to define a range of flood affected areas including floodway (where water flow is a key function), flood storage areas (where water storage is an important flood function), the flood planning area (area where the majority of controls apply for flooding) and flood prone land (the extent of the probable maximum flood for emergency response and recovery purposes). Flood prone areas in NSW, unlike other states, include both riverine and local overland flooding areas. Councils are at different stages in defining these areas with very few councils currently able to map all flood prone land. The NSW Government's Flood Prone Land Policy and Floodplain Development Manual outline government policy and direction on policy implementation.

NSW flood related planning requirements for local councils are set out in Ministerial Direction No. 4.3 Flood Prone Land, issued under section 117 of the *Environmental Planning and Assessment Act 1979*. It requires councils to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy as set out in the *NSW Floodplain Development Manual 2005*. It requires provisions in a Local Environmental Plan on flood prone land to be commensurate with the flood hazard of that land. In particular, a planning proposal must not contain provisions that:

- permit development in floodway areas,
- permit development that will result in significant flood impacts to other properties,
- permit a significant increase in the development of that land,
- are likely to result in a substantially increased requirement for government spending on flood mitigation measures, infrastructure or services, or
- permit development to be carried out without development consent except for the purposes of some agriculture, roads or exempt development.

The direction requires that a planning proposal must not impose flood related development controls above the residential flood planning level (typically the 1% flood plus 0.5m freeboard) unless adequately justified to the satisfaction of the Department of Planning and Infrastructure.

The full direction No. 4.3 Flood Prone land can be obtained on line at: http://www.planning.nsw.gov.au/LinkClick.aspx?fileticket=dOkLhSFp9eo%3d&tabid=248&language=en-AU

When preparing comprehensive Local Environmental Plans councils use a Standard Instrument template which includes the following model provision (clause 7.3) for flooding in areas where flooding matters cannot be fully addressed by limiting land uses, such as where an existing zone and existing land uses include residential accommodation.

(1) The objectives of this clause are as follows:

(a) to minimise the flood risk to life and property associated with the use of land,

(b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,

(c) to avoid significant adverse impacts on flood behaviour and the environment.

(2) This clause applies to:

(a) land that is shown as “Flood planning area” on the Flood Planning Map, and

(b) other land at or below the flood planning level.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

(a) is compatible with the flood hazard of the land; and

(b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

(c) incorporates appropriate measures to manage risk to life from flood, and

(d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

(4) Subclause (5) applies to:

(a) land shown as “projected 2100 flood planning area” and “projected 2050 flood planning area” on the Flood Planning Map; and to

(b) other land below the projected 2100 flood planning level and the projected 2050 flood planning level as a consequence of projected sea level rise.

(5) When determining development to which this subclause applies, council must take into consideration any relevant matters outlined in subclause 3(a) – (e), depending on the context of the following:

(a) the proximity of the development to the current flood planning area; and

(b) the intended design life of the development; and

(c) the scale of the development; and

(d) the sensitivity of the development in relation to managing the risk to life from any flood, and

(e) the potential to relocate, modify or remove the development.

Subclauses (4) & (5) can only be used once a council has identified the ‘projected 2100 flood planning area’ and ‘projected 2050 flood planning area’ as outlined in the Flood Risk

Management Guide 2009, which updates the sea level rise information in the NSW Floodplain Development Manual 2005.

The flood clause accommodates climate change induced sea level rise as set out in the NSW Sea Level Rise Policy Statement, which sets sea level rise planning benchmarks of 40cm by 2050 and 90cm by 2100 relative to 1990 levels. The clause is also consistent with the NSW Coastal Planning Guideline: Adapting to Sea Level Rise that shows councils how they can incorporate the sea level rise planning benchmarks into their strategic and statutory land use planning and development assessment processes.

In addition to the above strategic processes and provisions for development requiring consent, the NSW State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, known as the Codes SEPP, aims to provide streamlined assessment processes for development that complies with specified development standards.

The Codes SEPP includes specific requirements for buildings proposed to be constructed on a 'flood control lot'. Clause 3.36C of the Codes SEPP is particularly relevant to the proposed ABCB Standard as follows.

3.36C Development standards for flood control lots

(1) This clause applies:

(a) to all development specified for this code that is to be carried out on a flood control lot, &

(b) in addition to all other development standards specified for this code.

(2) The development must not be on any part of a flood control lot unless that part of the lot has been certified, for the purposes of the issue of the relevant complying development certificate, by the council or a professional engineer who specialises in hydraulic engineering as not being any of the following:

(a) a flood storage area,

(b) a floodway area,

(c) a flow path,

(d) a high hazard area,

(e) a high risk area.

(3) The development must, to the extent it is within a flood planning area:

(a) have all habitable rooms no lower than the floor levels set by the council for that lot, and

(b) have the part of the development at or below the flood planning level constructed of flood compatible material, and

(c) be able to withstand the forces of floodwater, debris and buoyancy up to the flood planning level (or if on-site refuge is proposed, the probable maximum flood level), and

(d) not increase flood affectation elsewhere in the floodplain, and

(e) have reliable access for pedestrians and vehicles from the development, at a minimum level equal to the lowest habitable floor level of the development, to a safe refuge, and

(f) have open car parking spaces or carports that are no lower than the 20-year flood level, and

(g) have driveways between car parking spaces and the connecting public roadway that will not be inundated by a depth of water greater than 0.3m during a 1:100 ARI (average recurrent interval) flood event.

(4) A standard specified in subclause (3) (c) or (d) is satisfied if a joint report by a professional engineer who specialises in hydraulic engineering and a professional engineer who specialises in civil engineering confirms that the development:

(a) can withstand the forces of floodwater, debris and buoyancy up to the flood planning level (or if on-site refuge is proposed, the probable maximum flood level), or

(b) will not increase flood affectation elsewhere in the floodplain.

Because of the above strategic and statutory planning provisions that endeavour to keep residential buildings *away* from hazard areas, additional specific provisions have not been included in the NSW building regulations for buildings constructed in flood prone areas.

NSW defines 'flood prone land' as 'land subject to inundation by the probable maximum flood (PMF)'. This is consistent with definitions in SCARM (2000).[10]

B.7 South Australia (SA)

South Australia's initiative, 'Better Development Plans' (BDP) provides generalised policies for use in council development plans throughout the State. The intent behind the BDP is to promote best practice planning policy across all councils. Each council can then add to this base policy, more specific planning policy which relates to their circumstances.

[10] SCARM (2000) *Floodplain Management in Australia: Best Practice Principles and Guidelines*. Agriculture and Resource Management Council of Australia and New Zealand, Standing Committee on Agriculture and Resource Management (SCARM). Report No 73. CSIRO Publishing, 2000

It should be noted that all councils in South Australia are in the process of converting to the BDP policy system.

BDP provides general policy on flooding under the heading 'Hazards' – Principles of Development Control:-

Flooding

4 Development should not occur on land where the risk of flooding is likely to be harmful to safety or damage property.

5 Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters unless the development can achieve all of the following:

(a) it is developed with a public stormwater system capable of catering for a 1 in 100 average return interval flood event

(b) buildings are designed and constructed to prevent the entry of floodwaters in a 1 in 100 year average return interval flood event.

6 Development, including earthworks associated with development, should not do any of the following:

(a) impede the flow of floodwaters through the land or other surrounding land

(b) increase the potential hazard risk to public safety of persons during a flood event

(c) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood

(d) cause any adverse effect on the floodway function

(e) increase the risk of flooding of other land

(f) obstruct a watercourse.

Typically in South Australia, planning policy dictates design for the prevention of entry of floodwaters of a 1 in 100 year average flood event. Some examples of local government development plan policy follows. The requirements are not prescriptive in building design but instead place the onus on the applicant to show that their building design will mitigate flooding.

B.7..1 Tea Tree Gully Council Example

Example of Tea Tree Gully Council Development Plan, following the BDP model for policy on development located in floodwater areas (excerpt below) and overlay maps (attachment 1 and

2). The overlay maps identify 'development constraints' which include mapping of river/creek floodwater areas.

Hazards

Flooding

4 Development should not occur on land where the risk of flooding is likely to be harmful to safety or damage property.

5 Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters unless the development can achieve all of the following:

(a) it is developed with a public stormwater system capable of catering for a 1 in 100 year average return interval flood event

(b) buildings are designed and constructed to prevent the entry of floodwaters in a 1 in 100 year average return interval flood event.

6 Development, including earthworks associated with development, should not do any of the following:

(a) impede the flow of floodwaters through the land or other surrounding land

(b) increase the potential hazard risk to public safety of persons during a flood event

(c) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood

(d) cause any adverse effect on the floodway function

(e) increase the risk of flooding of other land

(f) obstruct a watercourse.

7 Development located in the River/Creek floodwater areas shown on Overlay Maps – Development Constraints should be able to demonstrate that it will not impact unduly on the free flow of floodwaters either upstream or downstream from the proposed development.

B.7..2 Adelaide Hills Council Example

The Adelaide Hills Council has the most detailed information on flood hazard, having two categories of hazard, being low to high category and extreme flood hazard category. The relevant parts are included below:-

Principles of Development Control

10 Development should not be undertaken on land subject to flooding as shown on Figures AdHiFPA/1 (attachment 3) to 19, or within other areas subject to flooding or inundation by a 100 year return period flood event, unless buildings are designed and constructed to prevent the entry of floodwaters from a 1 in 100 year average return interval flood event.

11 Development located on land subject to flooding as shown on Figures AdHiFPA/1 to 19, or within other areas subject to flooding or inundation by a 1 in 100 year average return interval flood event, should not:

(a) impede the flow of floodwaters through the land or other surrounding land;

(b) occur where the risk of flooding is unacceptable having regard to personal and public safety and to property damage;

(c) increase the potential hazard risk to public safety of persons during a flood event;

(d) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood;

(e) cause any adverse effect on the floodway function.

B.7..3 Gawler Council Example

Gawler Council has detailed policies surrounding the Gawler Rivers flood plains. Map GRFP/1 (attached) shows the extent of the policy area.

Gawler Rivers Flood Plain Policy Area

Introduction

In addition to the applicable zone policies, the Gawler River Flood Plain Policy Area policies apply to the area shown in: Maps Ga/13 to 20 and Figure GRFP/1 (attachment 4).

Applicable zones: Deferred Urban, Rural, Special Uses, Residential, Residential Historic (Conservation), Residential Park, Light Industry and General Industry Zones.

Desired Character

The Policy Area is defined by the Australian Height Datum (AHD) for the 1:100 year Average Recurrence Interval (ARI) flood level, taking into account also subsequent modification as a consequence of mitigation works to protect specific locations. The floodplain supports a range of rural and urban activities.

Rural Areas:

Agricultural production should continue in the rural areas of the Policy Area whilst the natural environment of the floodplain is maintained and protected with no new residential or other forms of built form in close proximity of the riverbank. Land uses or activities that are suitable in the Policy Area, subject to design considerations include:

(a) river structures for irrigation management (channels, pumping stands);

(b) recreation uses;

(c) continuation of existing primary production including horticulture, but with improvements to existing management practice and subject to conditions regarding protection from floodwaters;

(d) Upgrading or replacement of existing dwellings and ancillary buildings subject to conditions

regarding protection from flood waters, dwellings, providing there is 100 metre set-back from the top of the riverbank and the finished floor level is 300 millimetres above the Australian Height Datum (AHD) for the 1:100 year Average Recurrence Interval (ARI) flood level.

Urban Areas:

Infill residential development is provided for in residential zones, but in broadacre residential areas it is not appropriate for these to be developed until local or regional mitigation measures are installed. The following uses will be considered:

(a) dwellings in areas characterised by existing residential development providing the finished floor level is 300 millimetres above the Australian Height Datum (AHD) for the 1:100 year Average Recurrence Interval (ARI) flood level, but no dwellings in broadacre residential areas;

(b) elevated buildings in locations identified for recreation or business use;

(c) recreation uses.

B.7..4 West Torrens Council Example

Stormwater Management

Major system

74 The design of the land division should enable the major storm drainage system to have the capacity to safely convey major stormwater flows.

Design Techniques (Design Techniques illustrate ONE WAY of satisfying the above principle)

74.1 The major storm drainage system has the capacity to safely convey stormwater flows for Average Return Interval (ARI) = 100 years, assuming 50 percent minor system blockage; and

74.2 The major storm drainage system design outflow is matched to the capacity of any

existing downstream system.

74.3 The design of the stormwater drainage system shall be based upon the onsite detention of all stormwater (roof and surface water) exceeding a maximum permitted discharge of 20litres per second for a rainfall 1 in 20 years recurrence interval.

75 The arrangement of roads, allotments, reserves and open space should enable where possible as is required for water quality and use for non potable purposes the provision of a major storm drainage system that:

(a) contains and retains creeks and vegetation;

(b) incorporates, where practical, sports grounds and other less flood sensitive land uses;

(c) incorporates, where required, detention and retention basins;

(d) enhances residential amenity; and

(e) integrates with the open space system and provides recreational opportunities.

Minor system

76 The design of the land division should facilitate a minor storm drainage system which has the capacity for minor stormwater flows and should:

(a) not overload adjoining downstream systems; and

(b) where practicable, provide for stormwater to be detained and retained close to its source.

Design Techniques (Design Techniques illustrate ONE WAY of satisfying the above principle)

76.1 The minor storm drainage system has the capacity to convey stormwater flows for ARI = 5 years for suburban residential lots with neighbourhood densities(1) not greater than 20 dwellings per ha, and ARI = 10 years for neighbourhood densities greater than 20 dwellings per ha.

(1) Neighbourhood density means the ratio of the number of dwellings to the area of the land (including

associated neighbourhood or local facilities) they occupy. The area includes internal public streets, all areas of public open space, local community services, local employment areas, and half the width of adjoining arterial roads.

76.2 The minor system design outflow is matched to the capacity of any existing downstream system.

76.3 The design of the stormwater drainage system shall be based upon the onsite detention of all stormwater (roof and surface water) exceeding a maximum permitted discharge of 20litres per second for a rainfall 1 in 20 years recurrence interval.

B.8 Tasmania (TAS)

The TAS Building Act 2000 and the Building Regulations 2004 require that the floor level of habitable rooms must be 300mm above the prescribed designated flood level.

Ten mapped floodplains and other areas subject to flooding including tidal.

A new Statewide (Planning) Code is under consideration as part of a Planning Directive.

Local Government cannot have its own building related controls. Individual planning schemes may address flood prone land at this stage. Uniformity will occur under the Planning Directive

The Building Act 2000

159. Land subject to flooding

A person must not erect or place a building containing habitable rooms on land subject to flooding unless the floor level of each habitable room in the building is 300 millimetres or more above the prescribed designated flood level for that land.

The Building Regulations 2004

12. Land subject to flooding

For the purposes of section 159 of the Act, the following is the designated flood level:

(a) 600 millimetres above ground level or the highest known flood level, whichever is the highest, for land known to be subject to flooding other than as provided in paragraph (b) or (c);

(b) the level which has a 1% probability of being exceeded in any year for the following watercourse floodplains:

(i) the Derwent River through New Norfolk;

(ii) the upper reaches of the Tamar River and the lower reaches of the North Esk River;

(iii) the Huon River at Huonville and Mountain River;

(iv) the South Esk River through Perth and Longford to the Tamar River;

(v) the Jordan River below Pontville;

(vi) the Mersey River through Latrobe;

(vii) the Bagdad Rivulet;

(viii) the Elizabeth River through Campbell Town;

(ix) the Meander River through Deloraine;

(x) the Macquarie River through Ross;

(c) 600 millimetres above the ordinary high-water mark of the spring tide for land on which flooding is affected by the rise and fall of the tide.

Appendix C Extracts from the Guideline on Reducing Vulnerability of Buildings to Flood Damage

Extracts from the Guideline on Reducing Vulnerability of Buildings to Flood Damage.[4]

Table 4.3.1.2 Material Absorbency

Table 4.3.1.3 Materials for 96-Hour Immersion

For infrequent flooding (i.e. above the 1 in 100 AEP flood planning level) the degree of corrosion in heavier gauge mild steel nails and bolts used in timber framing and structural steel connections is unlikely to be critical to require avoiding mild steel. However, for all nails used for framing anchor and straps, AS 1684.2 requires corrosion protected flat head connector nails irrespective of their exposure to moisture.

4.3.1.2 Fastenings and Adhesives

The level of corrosion protection required for fixing hardware (nails, screws, hinges, etc.) depends on a number of factors. Better quality hardware should be used where:

• subject to frequent and/or prolonged wetting,

• it is structurally critical and at risk of severe corrosion,

• the hardware is difficult to examine periodically after a flood,

• the hardware is difficult to replace if severe corrosion does occur,

• inundation by seawater can be expected, and/or

• there is little cost difference involved.

Given that flooding is a relatively low probability in the life of a building placed above a flood planning level such as a 1 in 100 AEP event, most of the heavier mild steel gauge bolts, nails and screws used in structural applications such as timber framing or connecting steel beams do not warrant corrosion-free alternatives. Unless there is constant or prolonged wetting, corrosion should be limited and restricted to the surface. In a more corrosive environment or in critical areas, consideration could be given to using galvanised or stainless steel hardware. The definition of critical areas is somewhat subjective but they could be those satisfying one or more of points above.

Adhesives and sealants that are available for construction are made from a wide range of materials and their performance, when immersed in water, will not generally be obvious. Most perform poorly in this regard and great care should be taken in their application. Of the more

common materials solvent-based neoprene adhesives are the best, followed by rubber-based adhesives.

Of the less common materials two-part epoxies and polysulphide epoxy resins perform well. Among the common wood glues resorcinol based glues perform better than melamine urea formaldehyde. PVA glues are the most common wood glues; however, they absorb water and lose their strength. Sealants are also used for their bonding properties. Common sealants in order of greatest water resistance are:

• polysulphide sealants,

• silicone sealants,

• rubber-based sealants,

• epoxy putty,

• polyurethane joint filler (bitumen

impregnated), and

• water-based acrylic.

4.3.2 Types of House Construction

4.3.2.1 Traditional House Construction

The vast majority of houses are constructed from:

• brick veneer (a brick wall outside a frame structure),

• light-clad frame (a frame structure directly covered with materials such as timber, aluminium, vinyl, or fibre cement sheet or boards), or

• full brick (two brick walls separated by a cavity). Also referred to as double or cavity brick. Brick veneer and light-clad frame houses normally use a timber or light gauge steel frame which commonly has internal plasterboard lining. They are readily constructed by the building trades, such as carpenters and bricklayers, and are often the most cost-effective forms of construction especially for detached houses because the industry and market are geared to this product. Brick ties and other components that are embedded in mortar are a special case. It is well established that components in mortar corrode at a significantly higher rate than those in the air spaces within the building envelope. This is particularly the case if the mortar beds have been immersed in saline or brackish water. Thus it is a wise precaution to ensure that stainless steel or other high durability materials are used for brick ties.

All these forms of construction use a wall cavity, Figure 57 Concrete panel houses which have problems following a flood, such as trapping silt and retaining moisture in any wall insulation. These issues and possible solutions are discussed in Section 5.4.

4.3.2.2 Concrete Panel Housing

Construction techniques normally associated with commercial and industrial developments are now being used for unit, townhouse and other medium/high density residential developments, (Figure 57). The panels are durable, but depend on the connections to stay in place. If the connections are not appropriately designed and protected they may fail under load or may corrode over time.

Concrete Panel Housing (CPH) comprises external walls and often internal walls made of vertically positioned concrete panels. These can be either precast on site (tilt up construction) or made in a factory and transported to site for placement (precast construction), (Figure 58). The flood performance of CPH is excellent, due to its inherent strength and imperviousness. When used as an isolated concrete wall, i.e. without external cladding or internal lining, this form of construction will suffer no damage and will only need a hose and scrub down or, at the worst, repainting.

Many of the recommendations in these guidelines are applicable to CPH construction. As CPH is engineered for a specific design and constructed by specialists, these guidelines do not include detailed advice on CPH specific flood-effective designs. The principles of these guidelines can be easily applied in their design to suit floodplain conditions. Some important applications to be considered are:

• CPH is usually built with slab-on-ground floors, so in flood prone areas consideration should be given to raising the slab above the surrounding ground level with compacted fill (see Section 5.1.2). It is also practical to have CPH built with raised, suspended floors, using timber or steel framed flooring or suspended in situ or precast concrete slab floors.

- As the panels are reinforced concrete, the simplest approach is to design the walls to resist hydrostatic forces. If this is uneconomic, then it is vital to have near-floor level openings for the entry of rising floodwaters to prevent unbalanced hydrostatic forces forming (see Section 3.2.1). Section 3.2.1.3 gives advice on the provision of sufficient water inlets which can also allow outflow of receding floods. Construction details of openings are best left to the designer, but consideration should be given providing efficient floodwater entry and exit while also providing a thermal, vermin and intruder barrier.

• Minimum repairs are needed when the concrete panels are not lined or clad but rather have appropriate external and internal finishes applied. Acrylic painting of the wall is the simplest internal finish. CPH walls can also be lined internally with plasterboard placed either directly on

the wall or on battens (or furring channels) attached to the wall. Battened lining can be used in conjunction with insulation in locations requiring additional thermal insulation, (Figure 59).

While battened linings result in the formation of a cavity and a moisture trap, it does not reduce the flood advantage that CPH offers because the structural performance of the concrete wall will not deteriorate. Additional insulation should be incorporated in the wall itself in the form of sandwich construction, (Figure 60).

For the best flood performance, it is recommended that internal walls also be constructed from solid concrete rather than lined frames. Where internal linings are used over concrete panel walls, allowance should be made for water entry and exit near the skirting. Also where battens support the wall lining, they should be placed vertically wherever practical, to provide better drainage of floodwaters and an improved drying environment. The skirting should be removable or have perforations in water resistant material.

The use of metal door frames should enhance resistance to water damage.

Currently, CPH is economic in unit type developments where repetition and mass production of the panels reduces costs. However, CPH can be used for larger two-storey houses where CPH can be cost competitive with double brick construction.

More information on Concrete Panel Housing is available in the Cement and Concrete Association of Australia's publication "The Concrete Panel Homes Handbook", which can be downloaded from the website: www.concrete.net.au.

4.3.2.3 Blockwork Construction

The two most common forms of residential blockwork construction are:

• autoclaved aerated concrete (AAC) blocks, and

• concrete blocks.

Lightweight AAC blocks commonly used in residential buildings are very porous. If immersed, they can absorb a high volume of water and this can lead to damage of other components. The waterproof coatings usually applied on the exposed wall surfaces are to protect against light wetting, e.g. rainwater, rather than protecting against water immersion over several days. Wherever they are laid below ground, the usual recommendation is that they should be imperviously sealed e.g. with bitumous sealant. Thus without special treatment, they may not be suitable in flood prone areas, (Figure 61). In contrast, concrete blocks will not be damaged by floodwaters and can be easily cleaned after a flood. A house constructed of single-leaf concrete masonry and concrete floors, metal door frames with no skirting boards has very low vulnerability to water damage. In some climates the presence of empty cores in the blocks may

not provide sufficient thermal insulation and they may need to be lined or clad thereby increasing flood repairs (see Section 5.4.1 for problems with wall cavities).

Concrete block walls also have the benefit that they can be reinforced to increase their strength in bending, which brick constructed walls are unable to resist. Reinforced concrete or concrete block walls can also be used to provide extra strength to walls at risk from debris and flow velocity.

4.3.2.4 Other House Construction Types

There are a number of alternative construction methods and materials, including:

• mud brick,

• rammed earth,

• reverse masonry veneer, and

• straw bale.

As these types of construction are relatively uncommon area, they are not considered in these guidelines. Key considerations about their flood performance include:

• structural integrity of the material upon immersion,

• how the product and installation will affect drying time,

• the potential for deposition of floodwater contaminants in cavities, and

• the behaviour of the material in relation to other components.

The most important consideration is the effect of immersion for extended periods on the material. It is vital to realise that waterproof coatings may be sufficient to stop rain water from entering and/or damaging the integrity of the material, but quite often will not prevent damage when immersed in water.

4.3.3 Minimising Water Retention and Absorbency

The main factors influencing water damage are the duration of a flood, the length of time components stay wet, the materials used and the detailing. Water can be retained in all sorts of traps and hollows that are a problem in flood prone areas. These include:

• hollows around foundation piers and against sub-floor brick walls

• the space between the underside of kitchen cupboards and the floor

• the base of built-in wardrobes and similar areas

• undrained brick cavities in full-brick construction

• the base of brick chimneys

• under bathtubs and prefabricated shower trays

• sealed cavities in double-sided plasterboard walls and hollow core doors

• the spaces immediately above any ceiling, including the void between a ceiling and the floor immediately above in multi-storey construction.

Water that is retained in these places can delay drying out and promote corrosion in metal items and fungal decay in timber or other organic materials. A long duration flood allows water to soak into materials and sealed cavities, saturating them and maximising the potential for damage. For example, timber will become fully saturated and swell, the pore structure in concrete will become saturated, while the voids in hollow core doors and sealed stud and plasterboard cavities will fill up with water.

The drying time for a building that has been immersed for a prolonged period is measured in months. The damage caused can vary, from mechanical damage caused by timber swelling through to the disintegration of some materials and the onset of fungal decay and corrosion. This will be worsened by the presence of trapped silt and/or absorbent wall and ceiling insulation.

The following four steps will minimise the potential for water absorption and water damage:

1. Choose materials and construction details that are critical to the minimisation of these effects.

2. Choose materials that are not affected by water.

3. Avoid moisture traps in house designs and during building by ensuring clean and tidy construction e.g. wall cavities kept free of building debris and waste.

4. Seal porous materials against water entry. For example, sealing the end grain of timber can significantly decrease water absorption as the open end grain can absorb water at a rate up to 10 times that of the side grain. Some tests have shown that perhaps the best end grain sealer is two-part polyurethane filler or two coats of oil-based primer. The latter is likely to be slightly less effective but easier to apply. Other products may be satisfactory but, because of the problems with reapplying the sealer once constructed, a check should be made with the manufacturer that the product has been proven to provide long-term protection against water absorption without cracking or peeling. Section 5 addresses in more detail what can be done for the individual components within a house.

4.3.4 Maximising Drying Rates

Ensuring rapid drying of house components after flooding is very important to minimise:

• the chance of structural damage to timbers used for framing, flooring systems, etc. and

• the risk of damage to finishes and finishing.

Houses cannot be reinstated until any permanent loss of strength to structural components is addressed and everything in the house is completely dry. Replacement of plasterboard, carpets etc. should only occur after the adequacy of the post flood structure is certified.

Typical Drying Times

The times required for building components to dry out can be substantial and thus the time required before repairs can be made will also be substantial. In Table 4.3.4, estimates of the drying times required for components and the waiting times prior to repair are given for solid brick, brick veneer and timber clad structures.

These drying times are for Sydney during winter and Figure 62 contains a diagram with correction factors. These factors are presented as a function of maximum daily temperature and 3 pm relative humidity. Thus, the average 3 pm relative humidity and the average maximum daily temperature in Sydney during winter are 52% and 17ºC respectively, and the correction factor is 1.

In contrast, the conditions for Richmond (NSW) during summer are significantly drier and hotter, with the average maximum daily temperature being 30ºC and average 3 pm relative humidity 47%, and thus the correction factor is 0.5 so that all the suggested drying times could be halved. These drying times are provided only as a guide and such factors as post-flood weather conditions, house aspect, ventilation details, etc will influence the times. For example, following a flood, extreme weather patterns may persist. Under these circumstances, it would be advisable to adopt a slightly more conservative correction factor to cover this variability. Instances where components have not dried after the suggested drying time has elapsed, may simply reflect differences in house type, microclimate variability etc. Where components remain wet after the elapse of twice the proposed drying time, suggests that there may be factors, such as trapped moisture or restricted ventilation, which can delay drying.

DRAFT STANDARD FOR CONSTRUCTION OF BUILDINGS IN FLOOD HAZARD AREAS

VERSION 5

JUNE 2011

ABCB Important Disclaimer

While the Australian Building Codes Board (ABCB)[1] , the participating Governments and other groups or individuals who have endorsed or been involved in the development of the Standard, have made every effort to ensure the information contained in this Standard is accurate and up to date, such information does in no way constitute the provision of professional advice.

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Users should seek appropriate independent professional advice prior to relying on, or entering into any commitment based on material in this Standard in relation to building or related activities. Its interpretation in no way overrides the approvals processes in any jurisdiction.

[1] The Australian Building Codes Board (ABCB) is a joint initiative of all three levels of government in Australia and includes representatives from the building and construction industry, and the plumbing industry. The mission of the ABCB is to address issues relating to safety and health, and amenity and sustainability in the design and performance of buildings through the National Construction Code (NCC) Series, and the development of effective regulatory systems and appropriate non-regulatory solutions. This is set out in an inter-government agreement between the Commonwealth, States and Territories.

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Preface

Currently, the National Construction Code (NCC) does not contain detailed construction practice for buildings *in flood hazard areas*. However, although not targeted at technical solutions for building *in flood hazard areas*, the NCC does contain performance provisions requiring all buildings to have structural resistance to the action of liquids, ground water and rainwater ponding by requiring compliance with Australian Standards for structural design. The performance requirements with respect to surface water are designed to ensure that if the ponding of surface water occurs then drainage and disposal of surface water must be conveyed to an appropriate outfall and avoid water damaging or entering a building.

In recognition of the absence of technical standards relating to flooding within the NCC, the Australian Government and State and Territory Government Building Ministers responsible for building construction standards decided to develop a standard for the design and construction of certain new buildings *in flood hazard areas* (the Standard). The Standard aims to reduce the risk of death or injury of building occupants as a result of buildings subjected to certain flood events. It is anticipated that subject to regulation impact in accordance with the Council of Australian Governments (COAG) Best Practice Regulation Guide and ABCB Board approval, the Standard would be referenced in the NCC Volumes One and Two in 2013.

It must also be emphasised that the Standard is not a stand-alone solution to mitigating life safety risk due to flooding. Reducing life safety risk due to flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, flood warning and emergency response strategies for flooding, and building standards. Sufficient awareness of the flood risk and the safety measures required by the occupants and those assisting them during a flood emergency are essential pre-requisites.

Therefore, with the application of this Standard within *flood hazard areas*, in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with the Standard will eliminate the risk of serious injury or fatality even in the *defined flood event.*

In addition, larger floods than the *defined flood event* (DFE) can occur and even floods of the scale of the DFE can vary in behaviour and could exceed the design parameters and limitations in this Standard. Availability of assistance from emergency services or other avenues are important considerations not treated in this Standard.

Acknowledgements

The ABCB acknowledges the contribution of members of an expert Reference Group that assisted the development of the Standard.

The following organisations were represented on the Reference Group –

Australian Government Attorney-General's Department
Brisbane City Council
Bureau of Meteorology
Geoscience Australia
Gold Coast City Council
Hawkesbury City Council
Housing Industry Association
Insurance Australia Group
Master Builders Association
NSW Department of Planning and Infrastructure
NSW Office of Environment and Heritage
Queensland Department of Local Government and Planning
Risk Frontiers
Tasmania Department of Justice

Table of Contents

1 Scope and General

1.1 General

The National Construction Code (NCC) is an initiative of the Council of Australian Governments (COAG) developed to incorporate all on-site construction requirements into a single code. The NCC comprises the Building Code of Australia (BCA), Volume One and Two; and the Plumbing Code of Australia (PCA), as Volume Three.

The BCA is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and each State and Territory Government.

The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia whilst allowing for variations in climate and geological or geographic conditions.

The BCA contains requirements to ensure new buildings and structures, and subject to State and Territory legislation alterations and additions to existing buildings, located in *flood hazard areas* do not collapse during a flood when subjected to flood actions resulting from the *defined flood event*.

The Standard provides additional requirements *in flood hazard areas* consistent with the objectives of the BCA which primarily aim to protect the lives of occupants in buildings in events up to and including the *defined flood event* . *Flood hazard areas* are identified by the relevant State/Territory or Local Government authority having jurisdiction.

Section 2 of the Standard contains basic design requirements including a fundamental Performance Requirement that describes the level of performance required for the construction of buildings *in flood hazard areas*.

Section 2 also contains Deemed-to-Satisfy design criteria for the design of buildings *in flood hazard areas*. These provisions only apply if certain limits such as maximum flow velocity and depth of submersion, are not exceeded. This does not mean that buildings cannot be constructed if they fall outside these limits. It means that such a proposal would need to be considered as an Alternative Solution under the relevant Performance Requirements and must be assessed accordingly.

The Standard also does not contain provisions that specify particular materials or design solutions which comply with the Performance Requirement. Therefore, in all instances, designers are required to use professional judgment in order to develop designs intended to comply with the Performance Requirement.

It must also be emphasised that the Standard is not a stand-alone solution to mitigating life safety risk due to flooding. Mitigating risk to life in flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce residual flood risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, emergency response strategies for flooding, and building standards.

Therefore, with application of this standard within flood hazard areas, in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with the Standard will eliminate the risk of serious injury or fatality even in the defined flood event.

In addition, larger floods than the defined flood event can occur and even floods of the scale of the defined flood event can be unpredictable and could exceed the design parameters and limitations in this Standard. Also, assistance from emergency services or other avenues may not be available to individual properties.

It is important to understand that flood is a local hazard whose parameters, including depth and velocity, vary significantly within the flood hazard area. Modelling of flood hazard generally provides information on average velocities across an area for an event rather than velocities at all points across a location. It is possible to have strong local currents not being shown by such modelling.

In addition, there are significant variations in the information available on flooding between areas within a local authority and between local authorities within Australia. This may result from the age of studies, the type of modelling undertaken, the information available to understand flood behaviour, or the reliance of historical flood information or estimates used to provide an understanding of flood risk. This will mean that the information available is not uniform.

Flood investigations may have also resulted in mitigation works which may alter flood behaviour. These are local by nature and their benefits would generally be considered in studies on flooding for the area and considered by the local authority in determining the flood hazard area.

In many cases information about flow velocities will not be known or will be limited. Modelling of the DFE may provide velocities at the peak of flow within an area rather than peak velocities at a specific location. Therefore it is unlikely that the local authority will have specific information on flow velocities at a particular site in all cases.

Existing development in more active flow areas, including floodways, is more likely to be subjected to higher velocities of flow than permitted in the Standard and is also more likely to impact upon flood behaviour elsewhere. Any additional development or redevelopment in these

areas is also likely to be exposed to more hazardous conditions it requires careful consideration and assessment. Also note that the flow velocities could also be expected to exceed the limits set in this Standard in many areas subject to local overland flooding.

The local authority may need to rely upon judgement upon where the Standard applies or request specific information from the proponent. This may limit the application of the Standard by the local authority to backwater and inactive flow areas in the DFE where it is less likely the velocity nominated in the Standard would be exceeded.

In many cases detailed information on the depth of inundation at the development in question will rely upon the provision of survey advice from the proponent relative to flood level information determined in the DFE.

In some cases the local authority may require the proponent to engage a suitably qualified professional to determine the DFE and/or to gain a more detailed understanding of flood behaviour at the location. This may include ascertaining the specific design criteria necessary to enable consideration of the development in relation to the Standard and meeting other requirements established by the local authority.

1.2 Scope

The Standard specifies requirements for flood-resistant design and construction of buildings that are subject to BCA requirements and that are located, in whole or in part, in *flood hazard areas*.

The ABCB has also prepared an Information Handbook which provides additional information relating to the construction of buildings in *flood hazard areas*. The Handbook is available on the ABCB website www.abcb.gov.au.

1.3 Application

1.3.1 Identification of applicable *flood hazard areas*

A *flood hazard area* is an area subject to flooding during the defined flood event (DFE) as determined by the authority having jurisdiction, or where this information is not available, by the proponent in accordance with standards set, or referred to, by the authority having jurisdiction.

This Standard only applies to *flood hazard areas* with the following characteristics:

(a) The area is not subject to mudslide or landslide during periods of rainfall and runoff.

(b) The area is not subject to storm surge.

1.3.2 Identification of applicable buildings

This Standard only applies to new Class 1, 2, 3, 9a health care and 9c buildings and Class 4 parts of buildings and, subject to State and Territory legislation, alterations and additions to existing buildings of these classifications.

1.4 Limitations

The Standard is not intended to –

(a) override or replace any legal rights, responsibilities or requirements; or

(b) override any land use planning controls imposed by the authority having jurisdiction; or

(c) address administrative requirements for construction of buildings *in flood hazard areas*.

1.5 Normative References

The following documents are referred to in this Standard:

(a) AS/NZS 1170.0.

(b) AS/NZS 1170.1.

(c) AS/NZS 1170.2.

1.6 Units

Except where specifically noted, this Standard uses the SI units of kilograms, metres, seconds, pascals and newtons (kg, m, s, Pa, N).

1.7 Definitions

Defined terms used within the text of the Standard are printed in italics. For the purposes of the Standard the following definitions apply:

Defined flood level (DFL): the flood level associated with a *defined flood event (DFE)* relative to a specified datum. The *DFL* plus the *freeboard* determines the extent of the *flood hazard area*.

Defined flood event (DFE): the flood event selected for the management of flood hazard for the location of specific development as determined by the authority having jurisdiction.

Depth of submersion: the depth of water above the floor level of the lowest non-*habitable room* for the *flood hazard level*.

***Finished floor level*:** the uppermost level of the finished floor, not including any floor covering such as carpet, tiles and the like.

Flood hazard area: the area (whether or not mapped) under the *flood hazard level* which has been determined by the authority having jurisdiction as a *flood hazard area.* The area relates to that part of the allotment on which a building stands or is to be erected.

Flood hazard level (FHL)*:* the flood level used to determine the height of floors in a building and represents the *defined flood level* (*DFL)* plus the *freeboard*.

Freeboard: the height above the *defined flood level* (*DFL)* typically used to provide a factor of safety and to compensate for effects such as wave action and localised hydraulic behaviour. Depending upon the circumstances of the individual event, *freeboard* may provide protection from floods marginally above the *DFL*. However, *freeboard* should not be relied upon to provide protection for flood events larger than the *DFE*.

Habitable room: a room used for normal domestic activities, and-

(a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but

(b) excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Hydrodynamic action: the action caused by a fluid in motion.

Hydrostatic action: the pressure exerted by a fluid at equilibrium due to the force of gravity.

Wet flood proofing: includes permanent or contingent measures applied to a building that prevent or provide resistance to damage from flooding while allowing floodwaters to enter and leave the building.

1.8 Notation

The following letters and symbols have the following meanings:

G permanent action (dead load) (AS/NZS1170.1

Q imposed action (live load) (AS/NZS 1170.1)

F_I flood action, resulting from the *DFE*

W_u ultimate wind action (AS/NZS 1170.2)

Ψ_c combination factor for imposed action (AS/NZS 1170.0)

D_e equivalent surcharge depth in metres

C shape factor

V velocity of moving water in m/s

g gravitational acceleration in m/s^2

Pa pascal

N Newton

m metre

s second

kg kilogram

1.9 Performance-Based Standards

The Standard is presented as a performance-based document. Buildings to be constructed in *flood hazard areas* must be designed to comply with the Performance Requirement in Clause 2.3. The Performance Requirement lists various 'heads of consideration' that must be considered during the design process.

The Performance Requirement enables the design of a building to be constructed in *flood hazard areas* to be developed from first principles to maximise its potential to meet specific client needs for a specific site.

1.10 Design Pathways

The Standard provides two pathways for compliance. One pathway involves formulating an Alternative Solution which complies with the Performance Requirement. This involves the application of engineering practice from first principles and requires designers to apply professional judgment on all design issues. The other pathway involves compliance with the Deemed-to-Satisfy Provisions.

The alternative solution pathway involves the application of engineering practice in combination with appropriate design consideration as an alternative to the requirements in Clauses 2.4 to 2.13.

2 Basic Design Requirements

2.1 Objective

The objective of the Standard is, in the event of a flood, to -

(a) safeguard people from injury caused by structural failure; and

(b) safeguard people from loss of amenity caused by structural behaviour; and

(c) safeguard people from illness or injury caused by utility failure; and

(d) protect other property from physical damage caused by structural failure.

2.2 Functional Statement

A building is to withstand the combination of loads and other actions to which it may be reasonably subjected during a flood event.

2.3 Performance Requirement

(a) A building in a *flood hazard area*, to the degree necessary, must be designed, constructed, connected and anchored to resist flotation, collapse or permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the *DFE* or lesser in accordance with the requirements of this Standard.

(b) The actions and requirements to be considered to satisfy (a) include but are not limited to-

(A) flood actions; and
(B) elevation requirements; and
(C) foundation requirements; and
(D) requirements for enclosures below the *DFL*; and
(E) requirements for structural connections; and
(F) material requirements; and
(G) flood proofing; and
(H) requirements for utilities; and
(I) requirements for egress; and
(J) impacts to other structures and properties.

Limitations:

Clause 2.3 only applies to-

(a) **Class 1, 2, 3, 9a health care and 9c buildings, and Class 4 parts of buildings; and**

(b) **areas that are not subject to landslip, mudslide, storm surge or coastal wave action.**

2.4 Deemed-to-Satisfy Provisions

Where a building solution is proposed to comply with the Deemed-to-Satisfy Provisions, Performance Requirement 2.3 is satisfied by complying with Clauses 2.5 to 2.13.

2.5 Application

The Deemed-to-Satisfy Provisions only apply to *flood hazard areas* with the following characteristics:

(a) The maximum flow velocity is not greater than 1.5 m/s. Where the authority having jurisdiction is not able to determine whether the maximum flow velocity is not greater than 1.5 m/s, the Deemed-to-Satisfy Provisions of this Standard can only apply to inactive flow or backwater areas.

2.6 Flood Actions

2.6.1 General

(a) Values of flood actions for use in design must be established that are appropriate for the type of structure or structural element, its intended use and exposure to flood action.

(b) The flood actions must include, but not limited to, the followings as appropriate: *hydrostatic actions*, *hydrodynamic actions*, debris actions, wave actions, erosion and scour.

(c) The flood action must be based at least on the worst combination of impacts in the *DFE*.

2.6.2 Hydrostatic Actions

(a) *Hydrostatic actions* caused by a depth of water to the level of the *DFL* must be applied to all surfaces, both above and below ground level.

(b) Reduced uplift and lateral actions on surfaces of enclosed spaces below the *DFL* must apply only if provisions are made for entry and exit of flood water.

2.6.3 Hydrodynamic Actions

(a) Dynamic effects of moving water must be determined by a detailed analysis based on the principles of fluid mechanics.

(b) Where water velocities do not exceed 1.5 m/s, the hydrodynamic actions can be approximated into equivalent hydrostatic actions by increasing the *DFL* by an equivalent surcharge depth D_e, equal to

$$D_e = (C\ V^2)/2g$$

Where

V = velocity of moving water in m/s

g = gravitational acceleration (9.8 m/s^2)

C = shape factor (1.25)

(c) This surcharge depth must be added to the *FHL* and applied to the vertical projected area of the building or structure that is perpendicular and upflow to the flow. Surfaces parallel to the flow or downflow will be subjected to the *DFL* hydrostatic pressures only.

2.6.4 Debris Actions

Where required, impact actions caused by objects transported by flood waters striking against buildings and structures must be determined using a rational approach as concentrated loads acting horizontally at the most critical location at or below the *DFL*.

2.6.5 Wave Actions

Where required, wave actions caused by water waves propagating over the water and striking a building or other structure must be determined using a rational approach. Wave actions include wash and wind generated waves but the Standard does not cover coastal waves.

2.6.6 Erosion and Scour

The effects of erosion and scour must be included in the calculation of actions on building foundations and other structures *in flood hazard areas*. The Standard does not cover coastal erosion.

2.6.7 Combinations of Actions

In addition to the combinations specified in AS/NZS 1170.0, the following combinations must be considered for structures located in a *flood hazard area*-

(a) $[1.2\ G, \psi_c\ Q, F_l]$; and

(b) [0.9 G, W_u, F_l].

Where F_l represents the flood related actions for the *DFE*, including hydrostatic (including buoyancy), hydrodynamic, wave and debris actions as appropriate.

2.7 Elevation Requirements

Unless otherwise specified by the authority having jurisdiction-

(a) floors of *habitable rooms* must be above the *flood hazard level;* and .

(b) floors of enclosed non-*habitable rooms* must be no more than 1.0 m below the *DFL*.

2.8 Foundation Requirements

2.8.1 General

Foundations of structures must provide the required support to prevent flotation, collapse or permanent movement resulting from the flood actions specified in Section 2.6.

2.8.2 Geotechnical Considerations

Foundation design must account for instability and decrease in structural capacity associated with soil properties when wet, erosion and scour, liquefaction, and subsidence resulting from the flood actions specified in Section 2.6, depending on the geotechnical characteristics of the site.

2.8.3 Foundation Depth

Foundation depth must be adequate to provide the support required in 2.8.1 taking into account the geotechnical considerations of 2.8.2.

2.8.4 Foundation Walls

Foundation walls must contain openings to allow for automatic entry and exit of floodwater for the *DFE* in accordance with Section 2.9.

2.8.5 Piers, Posts, Columns or Piles

Piers, posts, columns and piles used to elevate buildings to the required elevation must take account of-

(a) the potential erosion action due to flood; and

(b) the potential debris actions.

2.8.6 Use of Fill

Fill must be designed to be stable under conditions of flooding, including rapid rise and draw-down of flood waters, prolonged inundation, erosion and scour.

2.8.7 Use of Slabs-on-Grade

Slabs-on-grade must comply with the following-

(a) the slab must be installed on fill in accordance with 2.8.6, or on undisturbed soil of adequate bearing capacity; and

(b) the slab must have adequate strength to resist the design actions even if the supporting soil under the slab is undermined by erosion; and

(c) the bottom of the slab edges (usually the slab footing) must be at or below the depth of expected scour.

2.9 Requirements for Enclosures Below the *Flood Hazard Level*

Any enclosure below the *flood hazard level* must have openings to allow for automatic entry and exit of floodwater for all floods up to the *flood hazard level*.

2.10 Requirements for Structural Connections

(a) Erosion control structures must not be connected to the foundation or superstructure of the building.

(b) Decks, patios, stairways, ramps and the like below the *flood hazard level* that are attached to the building must be structurally adequate and not reduce the structural capacity of the building during the *DFE*.

2.11 Material Requirements

(a) Materials used for structural purposes and located below the *flood hazard level* must be capable of resisting damage, deterioration, corrosion or decay due to direct and prolonged contact with flood water.

(b) Materials used for structural purposes include loadbearing columns, bracing members, structural connections, fasteners, wall framing members and the like.

2.12 Requirements for Utilities

2.12.1 General

(a) Utilities and related equipments must not be placed below the *FHL* unless they have been designed specifically to cope with flood water inundation.

(b) Buried systems must be placed at a depth sufficient to prevent damage due to scour and erosion during the *DFE*.

(c) Exposed systems must be designed to withstand the flood related actions (buoyancy, flow, debris and wave) as appropriate.

2.12.2 Electrical

(a) Electrical meters and switches must be placed above the *FHL* and made accessible during the *DFE*.

(b) Electrical conduits and cables installed below the *FHL* must be waterproofed or placed in waterproofed enclosures.

2.12.3 Plumbing and drainage

Plumbing and drainage openings below the *flood hazard level* must be protected from backflow.

2.12.4 Mechanical and HVAC systems, tanks and the like

Ductwork, tanks, gas storage cylinders and the like shall be placed above the *FHL* or designed, constructed, installed and anchored to resist all flood-related actions and other actions during the *DFE* with appropriate load factors as given in 2.6.7. Potential buoyancy and other flood related actions on the empty tank during the *DFE* condition shall be considered.

2.13 Requirements for Egress

Egress from a balcony, verandah, deck, door, window or the like must be available to allow a person in the building to be rescued by emergency services personnel, if rescue during a flood event up to the *DFE* may be required.

2.14 Additional State or Territory requirements

State or Territory agencies may have a range of requirements for the location, construction and use of buildings to be constructed *in flood hazard areas*. It is also necessary to determine whether legislation requires –

(a) approval for construction; or

(b) conditions of approval: or

(c) limitations on use.

The ABCB Information Handbook presents an outline of requirements in each State and Territory.

3 References

Australian Building Codes Board, Information Handbook, *Construction of Buildings in Flood Hazard Areas*, www.abcb.gov.au, 2011.

Standards Australia/Standards New Zealand, 2002, *Structural design actions, Part 0 General principles*, Australia/New Zealand Standard AS/NZS 1170.0: 2002.

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Standards Australia/Standards New Zealand, 2002, *Structural design actions, Part 2 Wind actions*, Australia/New Zealand Standard AS/NZS 1170.2: 2002.

4 Bibliography

AEM Series Document No. 19, Managing the Floodplain, www.ema.gov.au, 2009

AEM Series Document No. 20, Flood Preparedness, www.ema.gov.au, 2009

Agriculture and Resource Management Council of Australia and New Zealand, SCARM Report 73, *Floodplain Management in Australia: best practice principles and guidelines*, CSIRO, 2000.

Hawkesbury-Nepean Floodplain Management Steering Committee, 2006, *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas*, Parramatta, June 2006.

Reference No: MBN11/1595
LG/11/2536

DEPARTMENT OF LOCAL GOVERNMENT AND PLANNING
BRIEF FOR DECISION

URGENT

Our Ref:	MBN11/1595
Date:	12 July 2011
TO	**Deputy Premier and Attorney-General, Minister for Local Government and Special Minister of State**
FROM	Growth Management Queensland
SUBJECT	Early adoption of draft national standard for buildings in flood hazard areas
Requested by	Departmentally generated

RECOMMENDATIONS

- That you:
  - note the progress and content of the draft national standard (the Standard) (**Attachment 1**) for buildings in flood hazard areas and the draft Information Handbook (the Handbook) (**Attachment 2**) being developed by the Australian Building Codes Board (ABCB).
  - approve the development of the preferred Option 1 – to prepare an Executive Council Minute to undertake any necessary amendments to the Building Regulation 2006 (BR) and immediately adopt the draft Standard as a new mandatory part of the Queensland Development Code (QDC). Additional provisions outside the scope of the Standard (e.g. requirements for commercial buildings) are also intended to be included in the QDC so they may be adopted by Local Governments on a voluntary basis.

BACKGROUND SUMMARY

Current flood regulation in Queensland

- Land use planning and the ability to build in a flood hazard area in Queensland are determined by Local Governments. Section 13 of the BR states, 'a Local Government may, through a local planning scheme, temporary local planning instrument or resolution, designate part of its area as a flood hazard area and set minimum floor levels for habitable rooms'. This requirement is then applied through the building approval process under the *Sustainable Planning Act 2009*.

- To provide an overview of flood regulation by other State and Local Governments, **Attachment 3** summarises the current State and Territory regulatory systems for building in flood hazard areas, while **Attachment 4** provides a snapshot of how some Local Governments currently address flood risk through their planning schemes.

- The State Planning Policy 1/03 (SPP) sets out the State's interest in ensuring that the natural hazards of flood, bushfire and landslide are adequately considered when making decisions about development. The SPP informs the way in which local planning instruments address natural hazards. The SPP is currently under review and the review will consider the outcomes recommended by both the Victorian Bushfires Royal Commission and the Queensland Floods Commission of Inquiry.

- The current version of the Building Code of Australia (BCA) under the National Code of Australia (NCC) prescribes that a building must be designed to withstand, from a structural perspective, the loads and actions it would reasonably be expected to be exposed to (i.e. in a flood-hazard area, the actions of flood waters). This requires the design of a building located in a flood hazard area to be developed from first engineering principles based on the likely flood impacts related to the specific site.

Draft national Standard for buildings in flood hazard areas

- Building Codes Queensland (BCQ) represents Queensland on the ABCB flood standard reference group, to provide advice on the development and implementation of the Standard. Additional members of the reference group include representatives from other State and Territory Governments, Geoscience Australia, Housing Industry Association, Master Builders Association, Bureau of Meteorology, Insurance Australia Group, Hawkesbury City Council, Brisbane City Council (BCC) and Gold Coast City Council.

- The aim of the Standard is to provide more specific performance requirements and deemed-to-satisfy (DTS) provisions for the design and construction of new buildings, and alterations or additions to existing buildings, in flood hazard areas. Flood hazard areas are designated by the authority that has jurisdiction, and in Queensland, this is the Local Government.

- The scope of the Standard is limited to class 1 (houses and townhouses), class 2 (units and flats), class 3 (hotels, motels and backpackers), class 4 (caretaker's dwelling), class 9a (health care) and class 9c (aged care) buildings.

- The Performance Requirement of the Standard outlines that buildings in a flood hazard area, to the degree necessary, must be designed, constructed, connected and anchored to resist flotation, collapse or permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the defined flood event or lesser.

Draft Handbook

- The non-mandatory Handbook provides information to support the application of the Standard and about other measures that are outside its scope, for example, the use of water resilient materials of a non-structural nature below the flood hazard level to help increase flood resilience of buildings.

- The Handbook is advisory only and needs to be read in conjunction with the Standard and each State or Territory's building legislation.

ISSUES

Key aspects of the draft Standard (**Attachment 5**)

- the draft DTS provisions are limited to cases of likely flooding that involve a maximum average flow rate of 1.5 metres per second (around 5.4 kilometres per hour)

- the DTS provisions require elevation of habitable floors above the flood hazard level (defined flood level plus a 'freeboard', i.e. an additional amount used to account for potential variation in flood levels or modelling inaccuracies)

- non-habitable areas must either be raised above the flood hazard level, or must receive no more than one metre inundation during the flood event

- services such as electrical and plumbing are required to be either located above the flood hazard level or constructed in a water proof manner
- for building materials, the DTS provisions only apply to elements of a structural nature below the flood hazard level
- the provisions apply to residential buildings.

Key limitations of the draft Standard

- where flow rates are expected to exceed the design level of 1.5 metres per second, a special engineer's design would be needed
- the Standard does not set a minimum freeboard and instead allows the local authority to set a freeboard as required whereas a uniform minimum freeboard would be desirable
- materials of a non-structural nature should also be covered as any area that is inundated will cause significant losses and disruption (this is considered by the ABCB to be a property protection issue and outside the objectives of the BCA)
- there should be standards for commercial buildings to minimise losses in flood hazard areas.

- BCQ has developed a table summarising the policy analysis associated with flood risk for buildings in Queensland, including the implications of the Standard and any outlying policy issues (**Attachment 6**).

- There are two pathways to achieve compliance with the Standard. One pathway involves compliance with the DTS provisions. The other pathway involves formulating an Alternative Solution which complies with the Performance Requirement. This involves the application of engineering practice from first principles and requires designers to apply professional judgment on all design issues.

- The Standard relies on accurate regional flood mapping. Ongoing maintenance of flood mapping and data is required to properly inform building design and construction, and limit development and redevelopment in designated flood hazard areas. The Queensland Reconstruction Authority (QRA) has advised that based on a review of planning schemes across the State, around 58 per cent of planning schemes do not currently contain flood mapping. The QRA has partnered with Banana Shire Council to use their new planning scheme as a template to ensure correlation between flood plain management controls and land use planning outcomes.

- The QRA is also working with the Department (including BCQ) and the Department of Community Safety on a standardised template for a catchment-wide flood study. It is intended to roll out this template across the State to other Local Governments who may not currently have adequate flood management incorporated into their planning schemes. This will assist Local Governments to identify 'flood hazard areas' and likely flooding characteristics, which will support the implementation of the Standard.

Approval and adoption of draft Standard

- At the recent ABCB meeting on 30 June 2011, the Board approved the draft Standard to undergo a national regulation impact statement (RIS) process which includes a two-month public consultation period (expected to finish late 2011). It is anticipated that feedback from the consultation process will be finalised and reflected in the Standard by early 2012. Mr Glen Brumby, Executive Director, BCQ, is the Queensland member

- The Standard is scheduled to be included in the 2013 version of the BCA, which means it would apply nationally from 1 May 2013. However, the ABCB Board has approved that individual States and Territories may publish and adopt the draft Standard earlier. As a result, Queensland could potentially adopt the draft Standard anytime from now onwards or, alternatively, when the RIS process has concluded. The final RIS is scheduled for early 2012.

- A range of options has been developed for Queensland's adoption of the Standard, as follows (**Attachment 7**):

  - Option 1 (recommended): Adopt the Standard as a new mandatory part to the QDC, subject to Executive Council approval, as soon as possible (proposed for July or August 2011) and include additional provisions outside the scope of the Standard (e.g. requirements for commercial buildings) that can be adopted by Local Governments on a voluntary basis.

  - Option 2: Adopt the Standard as a new mandatory part to the QDC, subject to Executive Council approval, as soon as possible (proposed for July or August 2011) without any additional optional provisions.

  - Option 3: Adopt the Standard as a new mandatory part to the QDC once the national RIS process is finalised (proposed by mid-2012).

  - Option 4: Adopt the entire Standard as a non-mandatory of the QDC immediately, which can be used as a model code for voluntary uptake by Local Governments.

  - Option 5: Take no action and wait until the Standard is incorporated into the BCA and takes effect from 1 May 2013.

- The recommended Option 1 will help address immediate needs associated with constructing new buildings and additions in flood-affected areas and will also help to improve future flood resilience of flood affected communities. It will also provide clear design guidance and a uniform approach to building in flood hazard areas across the State. Including additional provisions, such as those for commercial buildings, for Local Governments to adopt on a voluntary basis will enable policy issues outside the scope of the Standard, such as water quality issues, to be addressed where necessary.

- As an alternative, Option 4 would provide the benefit of reducing the need for Local Government actions to regulate building standards.

- The key difference between the proposed ABCB flood standard and the standard introduced by the BCC in its Temporary Local Planning Instrument (TLPI) is that the BCC standard requires flood resilient materials for all building elements below the flood level. BCQ suggests that this requirement should be voluntary and that including mandatory requirements for materials could be tested through local consultation. The national ABCB flood standard reference group decided that specifying flood resistant materials for non-structural elements was not cost effective as cavities needed to be exposed after flood events for cleaning and drying purposes. For example, plaster board can be low cost and easy to remove and replace.

- It is intended that the new QDC part would only apply to new buildings and additions to existing buildings, but not to other building alterations. Under the *Building Act 1975*, where an alteration is affecting more than 50 per cent of the volume of the existing building, the building certifier has the discretion to require part or all of the existing building to meet some or all of the current building standards. However it is considered that, in many cases, it would be impractical and potentially cost-prohibitive to apply the Standard to work being conducted on existing buildings, such as renovations or reconfigurations, because it requires an engineered design. It is intended that this issue will be the subject of consultation with key stakeholders during the development of the proposed new QDC part.

- For additions to existing buildings, compliance with the Standard is likely to result in some situations where the addition is raised to a higher level than the existing part of the building. This is already occurring in some Local Government areas under current requirements, e.g. the BCC TLPI. It is suggested in implementing the new code, if it is approved, that owners be allowed to apply to their Local Government for an exemption from meeting the code requirements for building additions where it would be impractical to do so.

CULTURAL IMPACT

- The Department is not aware of any cultural impact that may occur.

EMPLOYMENT IMPACT

- The Department is not aware of any employment impact that may occur.

RIGHT TO INFORMATION PUBLICATION SCHEME

- There is no publication with this brief.

CONSULTATION WITH STAKEHOLDERS

- The Standard and RIS will be released by the ABCB for broad community and industry consultation in the later part of 2011.

- If you approve early adoption of the Standard, consultation would be undertaken on the early adoption as a new mandatory part to the QDC (e.g. as part of Option 1 or 2). As part of this process, BCQ would publish the draft QDC on the DLGP website and engage with the Local Government and building industry stakeholders including the Queensland Master Builders Association, Housing Industry Association, Engineers Australia, Australian Institute of Building Surveyors, Local Governments and the Local Government Association of Queensland.

- Planning Policy and Planning Services Divisions support the potential early adoption of the Standard. Planning Services Division will work with Local Governments to remove any relevant provisions in TLPIs that will be rendered invalid by the introduction of the Standard.

- BCQ meets fortnightly with the QRA to promote open communication on ongoing flood and cyclone work, including the progress of the Standard. The QRA is supportive of early adoption of the Standard in Queensland.

- If the Standard is to be adopted early the Queensland Office of Regulatory Efficiency will need to be consulted. However, it is anticipated that there will not to be any significant costs associated with building in flood hazard areas after the introduction of the Standard, as it is providing more detailed design guidance for an issue that is already required to be addressed from a structural perspective under the BCA. Also, Local Governments are now seeking to set their own standards for buildings in flood prone areas and a State Standard will be seen as a significant benefit for industry.

FINANCIAL IMPLICATIONS

- It is expected that financial implications for the Queensland Government in implementing Option 1 would be limited. BCQ already has wide-ranging Local Government, building and design sector networks which may be used to disseminate information on the introduction of the Standard. Other cost effective methods to inform community and relevant sectors could include media statements, building newsflashes and BCQ information sessions conducted at various locations across Queensland.

- Financial implications for home owners, Local Governments and the building and design sectors will be considered as part of the cost benefit analysis of the national RIS process for the Standard.

POTENTIAL MEDIA

- Opportunity for media release when Standard is adopted.

Reference No: MBN11/1595

NOTED or APPROVED / NOT APPROVED
Deputy Premier and Attorney-General, Minister for Local Government and Special Minister of State
Comments

PLEASE ENSURE CONSULTATION PRIOR TO ADOPTION.

[redacted]

Paul Lucas MP
Deputy Premier and Attorney-General, Minister for Local Government and Special Minister of State
12/7/11

[redacted]

Principal Advisor
16/7/2011

[redacted]

16/7/2011

Political Representatives

Local Government

N/A

State Government

N/A

Federal Government

N/A

Contact Officer: [redacted] Director [redacted]	Signed 8/07/2011	Approved: Glen Brumby Executive Director [redacted]	Signed 8/07/2011
Approved: Gary White Government Planner [redacted]	Signed 12/07/2011	Endorsed: [redacted] A/Chief Executive Officer Growth Management Queensland [redacted]	Signed 12/7/2011

☐ Election Commitment ☐ CBRC / Cabinet related ☐ ECM related

DRAFT STANDARD FOR CONSTRUCTION OF BUILDINGS IN FLOOD HAZARD AREAS

VERSION 6

JULY 2011

ABCB Important Disclaimer

While the Australian Building Codes Board (ABCB)[1] , the participating Governments and other groups or individuals who have endorsed or been involved in the development of the Standard, have made every effort to ensure the information contained in this Standard is accurate and up to date, such information does in no way constitute the provision of professional advice.

The ABCB gives no warranty or guarantee and accepts no legal liability whatsoever arising from or connected to, the accuracy, reliability, currency or completeness of any material contained in this Standard.

Users should seek appropriate independent professional advice prior to relying on, or entering into any commitment based on material in this Standard in relation to building or related activities. Its interpretation in no way overrides the approvals processes in any jurisdiction.

[1] The Australian Building Codes Board (ABCB) is a joint initiative of all three levels of government in Australia and includes representatives from the building and construction industry, and the plumbing industry. The mission of the ABCB is to address issues relating to safety and health, and amenity and sustainability in the design and performance of buildings through the National Construction Code (NCC) Series, and the development of effective regulatory systems and appropriate non-regulatory solutions. This is set out in an inter-government agreement between the Commonwealth, States and Territories.

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Preface

Currently, the National Construction Code (NCC) does not contain detailed construction practice for buildings *in flood hazard areas*. However, although not targeted at technical solutions for building *in flood hazard areas*, the NCC does contain performance provisions requiring all buildings to have structural resistance to the action of liquids, ground water and rainwater ponding by requiring compliance with Australian Standards for structural design. The performance requirements with respect to surface water are designed to ensure that if the ponding of surface water occurs then drainage and disposal of surface water must be conveyed to an appropriate outfall and avoid water damaging or entering a building.

In recognition of the absence of technical standards relating to flooding within the NCC, the Australian Government and State and Territory Government Building Ministers responsible for building construction standards decided to develop a standard for the design and construction of certain new buildings *in flood hazard areas* (the Standard). The Standard aims to reduce the risk of death or injury of building occupants as a result of buildings subjected to certain flood events. It is anticipated that subject to regulation impact in accordance with the Council of Australian Governments (COAG) Best Practice Regulation Guide and ABCB Board approval, the Standard would be referenced in the NCC Volumes One and Two in 2013.

It must also be emphasised that the Standard is not a stand-alone solution to mitigating life safety risk due to flooding. Reducing life safety risk due to flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, flood warning and emergency response strategies for flooding, and building standards. Sufficient awareness of the flood risk and the safety measures required by the occupants and those assisting them during a flood emergency are essential pre-requisites.

Therefore, with the application of this Standard within *flood hazard areas*, in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with the Standard will eliminate the risk of serious injury or fatality even in the *defined flood event.*

In addition, larger floods than the *defined flood event* (DFE) can occur and even floods of the scale of the DFE can vary in behaviour and could exceed the design parameters and limitations in this Standard. Availability of assistance from emergency services or other avenues are important considerations not treated in this Standard.

Acknowledgements

The ABCB acknowledges the contribution of members of an expert Reference Group that assisted the development of the Standard.

The following organisations were represented on the Reference Group –

Australian Government Attorney-General's Department
Brisbane City Council
Bureau of Meteorology
Geoscience Australia
Gold Coast City Council
Hawkesbury City Council
Housing Industry Association
Insurance Australia Group
Master Builders Association
NSW Department of Planning and Infrastructure
NSW Office of Environment and Heritage
Queensland Department of Local Government and Planning
Risk Frontiers
Tasmania Department of Justice

Table of Contents

1 Scope and General

1.1 General

The National Construction Code (NCC) is an initiative of the Council of Australian Governments (COAG) developed to incorporate all on-site construction requirements into a single code. The NCC comprises the Building Code of Australia (BCA), Volume One and Two; and the Plumbing Code of Australia (PCA), as Volume Three.

The BCA is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and each State and Territory Government.

The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia whilst allowing for variations in climate and geological or geographic conditions.

The BCA contains requirements to ensure new buildings and structures, and subject to State and Territory legislation alterations and additions to existing buildings, located in *flood hazard areas* do not collapse during a flood when subjected to flood actions resulting from the *defined flood event*.

The Standard provides additional requirements *in flood hazard areas* consistent with the objectives of the BCA which primarily aim to protect the lives of occupants in buildings in events up to and including the *defined flood event* . *Flood hazard areas* are identified by the relevant State/Territory or Local Government authority having jurisdiction.

Section 2 of the Standard contains basic design requirements including a fundamental Performance Requirement that describes the level of performance required for the construction of buildings *in flood hazard areas*.

Section 2 also contains Deemed-to-Satisfy design criteria for the design of buildings *in flood hazard areas*. These provisions only apply if certain limits such as maximum flow velocity and depth of submersion, are not exceeded. This does not mean that buildings cannot be constructed if they fall outside these limits. It means that such a proposal would need to be considered as an Alternative Solution under the relevant Performance Requirements and must be assessed accordingly.

The Standard also does not contain provisions that specify particular materials or design solutions which comply with the Performance Requirement. Therefore, in all instances, designers are required to use professional judgment in order to develop designs intended to comply with the Performance Requirement.

It must also be emphasised that the Standard is not a stand-alone solution to mitigating life safety risk due to flooding. Mitigating risk to life in flooding requires a comprehensive set of measures that consider flood hazard and aim to reduce residual flood risk to a manageable level. This set of measures generally involves a combination of effective land use planning considering flood hazard, flood mitigation measures, emergency response strategies for flooding, and building standards.

Therefore, with application of this standard within flood hazard areas, in the absence of supporting measures, it is not possible to guarantee that a building constructed in accordance with the Standard will eliminate the risk of serious injury or fatality even in the defined flood event.

In addition, larger floods than the defined flood event can occur and even floods of the scale of the defined flood event can be unpredictable and could exceed the design parameters and limitations in this Standard. Also, assistance from emergency services or other avenues may not be available to individual properties.

It is important to understand that flood is a local hazard whose parameters, including depth and velocity, vary significantly within the flood hazard area. Modelling of flood hazard generally provides information on average velocities across an area for an event rather than velocities at all points across a location. It is possible to have strong local currents not being shown by such modelling.

In addition, there are significant variations in the information available on flooding between areas within a local authority and between local authorities within Australia. This may result from the age of studies, the type of modelling undertaken, the information available to understand flood behaviour, or the reliance of historical flood information or estimates used to provide an understanding of flood risk. This will mean that the information available is not uniform.

Flood investigations may have also resulted in mitigation works which may alter flood behaviour. These are local by nature and their benefits would generally be considered in studies on flooding for the area and considered by the local authority in determining the flood hazard area.

In many cases information about flow velocities will not be known or will be limited. Modelling of the DFE may provide velocities at the peak of flow within an area rather than peak velocities at a specific location. Therefore it is unlikely that the local authority will have specific information on flow velocities at a particular site in all cases.

Existing development in more active flow areas, including floodways, is more likely to be subjected to higher velocities of flow than permitted in the Standard and is also more likely to impact upon flood behaviour elsewhere. Any additional development or redevelopment in these

areas is also likely to be exposed to more hazardous conditions it requires careful consideration and assessment. Also note that the flow velocities could also be expected to exceed the limits set in this Standard in many areas subject to local overland flooding.

The local authority may need to rely upon judgement upon where the Standard applies or request specific information from the proponent. This may limit the application of the Standard by the local authority to backwater and inactive flow areas in the DFE where it is less likely the velocity nominated in the Standard would be exceeded.

In many cases detailed information on the depth of inundation at the development in question will rely upon the provision of survey advice from the proponent relative to flood level information determined in the DFE.

In some cases the local authority may require the proponent to engage a suitably qualified professional to determine the DFE and/or to gain a more detailed understanding of flood behaviour at the location. This may include ascertaining the specific design criteria necessary to enable consideration of the development in relation to the Standard and meeting other requirements established by the local authority.

1.2 Scope

The Standard specifies requirements for flood-resistant design and construction of buildings that are subject to BCA requirements and that are located, in whole or in part, in *flood hazard areas*.

The ABCB has also prepared an Information Handbook which provides additional information relating to the construction of buildings in *flood hazard areas*. The Handbook is available on the ABCB website www.abcb.gov.au.

1.3 Application

1.3.1 Identification of applicable *flood hazard areas*

A *flood hazard area* is an area subject to flooding during the defined flood event (DFE) as determined by the authority having jurisdiction, or where this information is not available, by the proponent in accordance with standards set, or referred to, by the authority having jurisdiction.

This Standard only applies to *flood hazard areas* with the following characteristics:

(a) The area is not subject to mudslide or landslide during periods of rainfall and runoff.

(b) The area is not subject to storm surge.

1.3.2 Identification of applicable buildings

This Standard only applies to new Class 1, 2, 3, 9a health care and 9c buildings and Class 4 parts of buildings and, subject to State and Territory legislation, alterations and additions to existing buildings of these classifications.

1.4 Limitations

The Standard is not intended to –

(a) override or replace any legal rights, responsibilities or requirements; or

(b) override any land use planning controls imposed by the authority having jurisdiction; or

(c) address administrative requirements for construction of buildings *in flood hazard areas*.

1.5 Normative References

The following documents are referred to in this Standard:

(a) AS/NZS 1170.0.

(b) AS/NZS 1170.1.

(c) AS/NZS 1170.2.

1.6 Units

Except where specifically noted, this Standard uses the SI units of kilograms, metres, seconds, pascals and newtons (kg, m, s, Pa, N).

1.7 Definitions

Defined terms used within the text of the Standard are printed in italics. For the purposes of the Standard the following definitions apply:

Defined flood level (DFL): the flood level associated with a *defined flood event (DFE)* relative to a specified datum. The *DFL* plus the *freeboard* determines the extent of the *flood hazard area*.

Defined flood event (DFE): the flood event selected for the management of flood hazard for the location of specific development as determined by the authority having jurisdiction.

Depth of submersion: the depth of water above the floor level of the lowest non-*habitable room* for the *flood hazard level*.

***Finished floor level*:** the uppermost level of the finished floor, not including any floor covering such as carpet, tiles and the like.

Flood hazard area: the area (whether or not mapped) under the *flood hazard level* which has been determined by the authority having jurisdiction as a *flood hazard area.* The area relates to that part of the allotment on which a building stands or is to be erected.

Flood hazard level (FHL)*:* the flood level used to determine the height of floors in a building and represents the *defined flood level* (*DFL)* plus the *freeboard*.

Freeboard: the height above the *defined flood level* (*DFL)* typically used to provide a factor of safety and to compensate for effects such as wave action and localised hydraulic behaviour. Depending upon the circumstances of the individual event, *freeboard* may provide protection from floods marginally above the *DFL*. However, *freeboard* should not be relied upon to provide protection for flood events larger than the *DFE*.

Habitable room: a room used for normal domestic activities, and-

(a) includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but

(b) excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

Hydrodynamic action: the action caused by a fluid in motion.

Hydrostatic action: the pressure exerted by a fluid at equilibrium due to the force of gravity.

Wet flood proofing: includes permanent or contingent measures applied to a building that prevent or provide resistance to damage from flooding while allowing floodwaters to enter and leave the building.

1.8 Notation

The following letters and symbols have the following meanings:

G permanent action (dead load) (AS/NZS1170.1

Q imposed action (live load) (AS/NZS 1170.1)

F_l flood action, resulting from the *DFE*

W_u ultimate wind action (AS/NZS 1170.2)

Ψ_c combination factor for imposed action (AS/NZS 1170.0)

D_e equivalent surcharge depth in metres

C shape factor

V velocity of moving water in m/s

g gravitational acceleration in m/s^2

Pa pascal

N Newton

m metre

s second

kg kilogram

1.9 Performance-Based Standards

The Standard is presented as a performance-based document. Buildings to be constructed in *flood hazard areas* must be designed to comply with the Performance Requirement in Clause 2.3. The Performance Requirement lists various 'heads of consideration' that must be considered during the design process.

The Performance Requirement enables the design of a building to be constructed in *flood hazard areas* to be developed from first principles to maximise its potential to meet specific client needs for a specific site.

1.10 Design Pathways

The Standard provides two pathways for compliance. One pathway involves formulating an Alternative Solution which complies with the Performance Requirement. This involves the application of engineering practice from first principles and requires designers to apply professional judgment on all design issues. The other pathway involves compliance with the Deemed-to-Satisfy Provisions.

The alternative solution pathway involves the application of engineering practice in combination with appropriate design consideration as an alternative to the requirements in Clauses 2.4 to 2.13.

2 Basic Design Requirements

2.1 Objective

The objective of the Standard is, in the event of a flood, to -

(a) safeguard people from injury caused by structural failure; and

(b) safeguard people from loss of amenity caused by structural behaviour; and

(c) safeguard people from illness or injury caused by utility failure; and

(d) protect other property from physical damage caused by structural failure.

2.2 Functional Statement

A building is to withstand the combination of loads and other actions to which it may be reasonably subjected during a flood event.

2.3 Performance Requirement

(a) A building in a *flood hazard area*, to the degree necessary, must be designed, constructed, connected and anchored to resist flotation, collapse or permanent movement resulting from the action of hydrostatic, hydrodynamic, erosion and scour, wind and other actions during the *DFE* or lesser in accordance with the requirements of this Standard.

(b) The actions and requirements to be considered to satisfy (a) include but are not limited to-

(A) flood actions; and
(B) elevation requirements; and
(C) foundation requirements; and
(D) requirements for enclosures below the *DFL*; and
(E) requirements for structural connections; and
(F) material requirements; and
(G) flood proofing; and
(H) requirements for utilities; and
(I) requirements for egress; and
(J) impacts to other structures and properties.

Limitations:

Clause 2.3 only applies to-

(a) **Class 1, 2, 3, 9a health care and 9c buildings, and Class 4 parts of buildings; and**

(b) **areas that are not subject to landslip, mudslide, storm surge or coastal wave action.**

2.4 Deemed-to-Satisfy Provisions

Where a building solution is proposed to comply with the Deemed-to-Satisfy Provisions, Performance Requirement 2.3 is satisfied by complying with Clauses 2.5 to 2.13.

2.5 Application

The Deemed-to-Satisfy Provisions only apply to *flood hazard areas* with the following characteristics:

(a) The maximum flow velocity is not greater than 1.5 m/s. Where the authority having jurisdiction is not able to determine whether the maximum flow velocity is not greater than 1.5 m/s, the Deemed-to-Satisfy Provisions of this Standard can only apply to inactive flow or backwater areas.

2.6 Flood Actions

2.6.1 General

(a) Values of flood actions for use in design must be established that are appropriate for the type of structure or structural element, its intended use and exposure to flood action.

(b) The flood actions must include, but not limited to, the followings as appropriate: *hydrostatic actions*, *hydrodynamic actions*, debris actions, wave actions, erosion and scour.

(c) The flood action must be based at least on the worst combination of impacts in the *DFE*.

2.6.2 Hydrostatic Actions

(a) *Hydrostatic actions* caused by a depth of water to the level of the *DFL* must be applied to all surfaces, both above and below ground level.

(b) Reduced uplift and lateral actions on surfaces of enclosed spaces below the *DFL* must apply only if provisions are made for entry and exit of flood water.

2.6.3 Hydrodynamic Actions

(a) Dynamic effects of moving water must be determined by a detailed analysis based on the principles of fluid mechanics.

(b) Where water velocities do not exceed 1.5 m/s, the hydrodynamic actions can be approximated into equivalent hydrostatic actions by increasing the *DFL* by an equivalent surcharge depth D_e, equal to

$$D_e = (C\ V^2)/2g$$

Where

V = velocity of moving water in m/s

g = gravitational acceleration (9.8 m/s^2)

C = shape factor (1.25)

(c) This surcharge depth must be added to the *FHL* and applied to the vertical projected area of the building or structure that is perpendicular and upflow to the flow. Surfaces parallel to the flow or downflow will be subjected to the *DFL* hydrostatic pressures only.

2.6.4 Debris Actions

Where required, impact actions caused by objects transported by flood waters striking against buildings and structures must be determined using a rational approach as concentrated loads acting horizontally at the most critical location at or below the *DFL*.

2.6.5 Wave Actions

Where required, wave actions caused by water waves propagating over the water and striking a building or other structure must be determined using a rational approach. Wave actions include wash and wind generated waves but the Standard does not cover coastal waves.

2.6.6 Erosion and Scour

The effects of erosion and scour must be included in the calculation of actions on building foundations and other structures *in flood hazard areas*. The Standard does not cover coastal erosion.

2.6.7 Combinations of Actions

In addition to the combinations specified in AS/NZS 1170.0, the following combinations must be considered for structures located in a *flood hazard area*-

(a) [1.2 G, ψ_c Q, Y_F, F_l]; and

(b) [0.9 G, W_u, $Y_{F,}$ F_l].

Where F_l represents the flood related actions for the *DFE*, including hydrostatic (including buoyancy), hydrodynamic, wave and debris actions as appropriate; and

Y_F is the flood load factor as given in Table 2.6.7.

Table 2.6.7

Defined Flood Event (DFE)	Flood load factor Y_F
DFE based on annual probability of exceedance of not more than-	
1:100	1.0
1:50	1.2
1:25	1.4
DFE based on maximum recorded flood with record length of not less than-	
100 years	1.1
50 years	1.3
25 years	1.5

2.7 Elevation Requirements

Unless otherwise specified by the authority having jurisdiction-

(a) floors of *habitable rooms* must be above the *flood hazard level;* and .

(b) floors of enclosed non-*habitable rooms* must be no more than 1.0 m below the *DFL*.

2.8 Foundation Requirements

2.8.1 General

Foundations of structures must provide the required support to prevent flotation, collapse or permanent movement resulting from the flood actions specified in Section 2.6.

2.8.2 Geotechnical Considerations

Foundation design must account for instability and decrease in structural capacity associated with soil properties when wet, erosion and scour, liquefaction, and subsidence resulting from the flood actions specified in Section 2.6, depending on the geotechnical characteristics of the site.

2.8.3 Foundation Depth

Foundation depth must be adequate to provide the support required in 2.8.1 taking into account the geotechnical considerations of 2.8.2.

2.8.4 Foundation Walls

Foundation walls must contain openings to allow for automatic entry and exit of floodwater for the *DFE* in accordance with Section 2.9.

2.8.5 Piers, Posts, Columns or Piles

Piers, posts, columns and piles used to elevate buildings to the required elevation must take account of-

(a) the potential erosion action due to flood; and

(b) the potential debris actions.

2.8.6 Use of Fill

Fill must be designed to be stable under conditions of flooding, including rapid rise and draw-down of flood waters, prolonged inundation, erosion and scour.

2.8.7 Use of Slabs-on-Grade

Slabs-on-grade must comply with the following-

(a) the slab must be installed on fill in accordance with 2.8.6, or on undisturbed soil of adequate bearing capacity; and

(b) the slab must have adequate strength to resist the design actions even if the supporting soil under the slab is undermined by erosion; and

(c) the bottom of the slab edges (usually the slab footing) must be at or below the depth of expected scour.

2.9 Requirements for Enclosures Below the *Flood Hazard Level*

Any enclosure below the *flood hazard level* must have openings to allow for automatic entry and exit of floodwater for all floods up to the *flood hazard level*.

2.10 Requirements for Structural Connections

(a) Erosion control structures must not be connected to the foundation or superstructure of the building.

(b) Decks, patios, stairways, ramps and the like below the *flood hazard level* that are attached to the building must be structurally adequate and not reduce the structural capacity of the building during the *DFE*.

2.11 Material Requirements

(a) Materials used for structural purposes and located below the *flood hazard level* must be capable of resisting damage, deterioration, corrosion or decay due to direct and prolonged contact with flood water.

(b) Materials used for structural purposes include loadbearing columns, bracing members, structural connections, fasteners, wall framing members and the like.

2.12 Requirements for Utilities

2.12.1 General

(a) Utilities and related equipments must not be placed below the *FHL* unless they have been designed specifically to cope with flood water inundation.

(b) Buried systems must be placed at a depth sufficient to prevent damage due to scour and erosion during the *DFE*.

(c) Exposed systems must be designed to withstand the flood related actions (buoyancy, flow, debris and wave) as appropriate.

2.12.2 Electrical

(a) Electrical meters and switches must be placed above the *FHL* and made accessible during the *DFE*.

(b) Electrical conduits and cables installed below the *FHL* must be waterproofed or placed in waterproofed enclosures.

2.12.3 Plumbing and drainage

Plumbing and drainage openings below the *flood hazard level* must be protected from backflow.

2.12.4 Mechanical and HVAC systems, tanks and the like

Ductwork, tanks, gas storage cylinders and the like shall be placed above the *FHL* or designed, constructed, installed and anchored to resist all flood-related actions and other actions during the *DFE* with appropriate load factors as given in 2.6.7. Potential buoyancy and other flood related actions on the empty tank during the *DFE* condition shall be considered.

2.13 Requirements for Egress

Egress from a balcony, verandah, deck, door, window or the like must be available to allow a person in the building to be rescued by emergency services personnel, if rescue during a flood event up to the *DFE* may be required.

2.14 Additional State or Territory requirements

State or Territory agencies may have a range of requirements for the location, construction and use of buildings to be constructed *in flood hazard areas*. It is also necessary to determine whether legislation requires –

(a) approval for construction; or

(b) conditions of approval: or

(c) limitations on use.

The ABCB Information Handbook presents an outline of requirements in each State and Territory.

3 References

Australian Building Codes Board, Information Handbook, *Construction of Buildings in Flood Hazard Areas*, www.abcb.gov.au, 2011.

Standards Australia/Standards New Zealand, 2002, *Structural design actions, Part 0 General principles*, Australia/New Zealand Standard AS/NZS 1170.0: 2002.

Standards Australia/Standards New Zealand, 2002, *Structural design actions, Part 1 Permanent, imposed and other actions*, Australia/New Zealand Standard AS/NZS 1170.1: 2002.

Standards Australia/Standards New Zealand, 2002, *Structural design actions, Part 2 Wind actions*, Australia/New Zealand Standard AS/NZS 1170.2: 2002.

4 Bibliography

AEM Series Document No. 19, Managing the Floodplain, www.ema.gov.au, 2009

AEM Series Document No. 20, Flood Preparedness, www.ema.gov.au, 2009

Agriculture and Resource Management Council of Australia and New Zealand, SCARM Report 73, *Floodplain Management in Australia: best practice principles and guidelines*, CSIRO, 2000.

Hawkesbury-Nepean Floodplain Management Steering Committee, 2006, *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas*, Parramatta, June 2006.

Agenda Item 5
PLUMBING LEGISLATION AND STANDARDS BRANCH

5a) National Licensing

The National Licensing System (NLS) Bill was passed by the Victorian Parliament on 17 September 2010 and has received royal assent.

Following the passing of the Bill in Victoria, other jurisdictions were to adopt the legislation through their parliament. The *Occupational Licensing National Law (Queensland) Act 2010* was passed on 28 October 2010.

Regulations are currently being developed by the Council of Australian Governments (COAG) Taskforce with input from the Plumbing and Gasfitters Occupational Regulators Working Group and Interim Advisory Committee regarding the policy structure. The draft regulations will be circulated for public consultation in mid 2011.

Queensland Treasury are preparing policy papers for the NLS Legislative Committee, to assist with the development of the draft regulations. Building Codes Queensland (BCQ) has provided feedback to Treasury for its consideration

The Chief Information Office (CIO) within the Department of Public Works is coordinating Information Communication Technology (ICT) matters for the NLS. The Chief Information Office are continuing their assessment of New South Wales (NSW's) system, the Government Licensing System (GLS), which has been selected to host the NLS. The GLS has to pass Queensland's requirements.

The National Licensing Authority will be hosted in a jurisdiction to be decided by the Commonwealth Ministerial Council. The COAG Taskforce are currently interviewing select individuals who may have nominated for a position on the National Occupational Licensing Board that will be established in 2011. There has been no further advice regarding the establishment of the Board.

The COAG Taskforce advised that on 16 December 2010, the final NLS Steering Committee will be held before NLS business transitions to the National Occupation Licensing Authority (NOLA). Once the NOLA is established, priority will be given to the finalisation of the draft regulations so that implementation of the NLS can occur by the due date of 1 July 2012. However, Queensland Treasury later advised that at this stage the NLS Steering Committee meetings will continue as the NOLA has not yet been established. The next NLS Steering Committee meeting was scheduled for 25 February 2011.

5b) Update of Smart eDA

The Smart eDA program for the electronic lodgement of plumbing applications is back on the agenda and is set to go live on 1 May 2011.

The pilot council launch with Mackay Regional Council, Bundaberg Regional Council has been tentatively scheduled for 22 – 24 March 2011 with Ipswich City Council date yet to be confirmed.

The PLSB will be undertaking discussions with local governments (LG) hoping to negotiate a reduction in their application fees for the lodgement of plumbing applications by $10.00 (GST exclusive) to allow for an administration fee for the use of Smart eDA for electronic plumbing applications.

5c) Distributor-retailers

Scenario for a conflict between a water retailer and retail customer

A *Customer Water and Waste Water Code (South East Queensland)* **(Attachment 1)** has been drafted by the Queensland Water Commission. Under the Code, a dispute between a small customer (i.e. a residential customer or a non residential customer using >100kl of water per annum) and a retailer may be referred to the Energy and Water Ombudsman.

However, the referring party must have attempted to resolve the dispute with the other party prior to referring the matter. It is therefore important for any disputing party to ensure dispute resolution functions outlined under the Code are initially followed before referral to the Ombudsman.

The Energy and Water Ombudsman was established under *the Water and Other Legislation Amendment Act 2010* through administering changes to the *Energy and Water Ombudsman Act 2006* (EWOA)**.** Under the new legislative regime, the previous Energy Ombudsman also took on the functions of water and accordingly was provided with the following functions under s11 of the EWOA:

- To receive and investigate, and facilitate the resolution of disputes referred under the Act to the Ombudsman;
- To resolve disputes if they cannot be resolved by agreement, negotiation or mediation;
- To identify systematic issues arising out of complaints anyone makes to the ombudsman

Under the EWOA, the Ombudsman has numerous powers of investigation and enforcement. For example, under s29 of the Act, the Ombudsman has the power to require particular documents or information from a relevant entity. Similarly, under s34 of the Act, the Ombudsman may penalise a party for failing to comply with a compliance direction given for an accepted order.

Scenario for a conflict between a water retailer and a local government authority

In contrast to consumers, *South East Queensland Water Act 2009* (SEQWA) does not have any express mechanisms for dispute resolution between a distributor retailer and a local government entity.

Under s20 of SEQWA, a distributor-retailer must enter into an agreement with a participating local government concerning a number of matters, including:

- The persons who have the right to participate in the organisation's profits (i.e. how is money paid to the distributor retailer going to be shared with local governments?).
- The internal management of the organisation
- The requirements of reporting of the organisation to its participants

Furthermore, under s22 of SEQWA, the participation agreement may provide for any of the following:

- The classes of participants in an organisation
- The voting rights of participants
- The membership, powers and procedures of its board

The distributor retailer is therefore presumed to function more as a corporate entity under the Act. Under s26 of SEQWA, when a participation agreement for a distributor retailer takes effect, it has the effect of a contract between all of the parties to the agreement, and the entities are taken to have agreed to observe and perform the contract so far as it applies to them.

Many commercial agreements contain dispute resolution and negotiation clauses. Disputes should therefore be resolved according to the agreement without the intervention of the Energy and Water Ombudsman.

5d) Use of Form 4 and Notifiable Minor Works

Consideration is being given to the following possible amendments to the *Plumbing and Drainage Act* 2002 (PDA) and the Standard Plumbing and Drainage Regulation 2003 (SPDR):

- Amend the schedule of Notifiable Minor Works (NMW), Other Minor Work and Unregulated Work.
- Reduce the period of time currently 40 business days, for plumbers to notify a LG of NMW.
- Enable LG to issue defect notices to rectify defective work identified during a LG audit of NMW in lieu of the current show cause period.

5e) Integrated hand basin and cistern

As a result of written advices received from Queensland Health in which it was indicated they would not oppose the installation of combination hand basins as they consider there is no significant health risk for use within domestic premises (class 1, 1a, class 2 and class 4 dwellings under the Building Code).

Consideration is being given to possible amendments to the Standard Plumbing and Drainage Regulation 2003 to allow the installation of the integrated hand basin and cistern in line with the QH advice.

5f) Reflux valves to prevent sewerage surcharge

Problems arising from recent flooding in Queensland indicated that sewerage infiltration from sewer mains caused significant damage to properties not inundated with flood water. Over flow relief gullies (ORG) failed to provide adequate protection against the infiltration of sewerage during the recent Queensland flood event.

The installation and location requirements for sanitary fixtures, in particular, reflux valves for sanitary house drains, is provided for in AS/NZS 3500.2.4.5 and is an applied provision under the Standard Plumbing and Drainage Regulation 2003.

Standard industry practice has been to install ORG's on all properties with no further measures against possible sewerage infiltration. However, recently this has been challenged due to the concerns regarding health and safety issues which may arise if the ORG fails during a flood event and sewerage leaks into a building.

The scope of AS/NZS3500.2 must be considered which states:

"A reflux valve shall be located wholly within the property"

4.4 Reflux valves to prevent Sewerage Surcharge

Purpose

To advise on the use and location of reflux valves at property connections for the purpose of preventing sewerage surcharge into properties from sewerage infrastructure during flood conditions.

Background

Problems arising from recent flooding in Queensland indicated that sewerage infiltration from sewer mains caused significant damage to properties not inundated with flood water. Overflow relief gullies (ORG) failed to provide adequate protection against the infiltration of sewerage during the recent Queensland flood event.

The installation and location requirements for sanitary fixtures, in particular, reflux valves for sanitary house drains, is provided for in AS/NZS 3500.2.4.5 and is an applied provision under the SPDR.

The scope of AS/NZS3500.2 must be considered which states:

"A reflux valve shall be located wholly within the property"

Issues

Standard industry practice has been to install ORG's on all properties with no further measures against possible sewerage infiltration. However, recently this has been challenged due to the concerns regarding health and safety issues which may arise if the ORG fails during a flood event and sewerage leaks into a building.

Recommendation

It is recommended that properties located within low lying areas subject to possible flooding install a reflux valve at the boundary connection to prevent sewerage surcharge from sewer mains. BCQ will consult with the plumbing industry on whether changes are required to the plumbing legislation to mandate the inclusion of reflux valves and, if considered favourably, whether it should apply to all sewered properties.

Growth Management Queensland

Repairing your house after a flood

Water resilient products and building techniques

FACT SHEET
JANUARY
2011

This fact sheet provides advice on repairing your home after a flood. It gives you information about the types of building materials and techniques to use during the repair stage to make sure your home is more flood resilient in the future.

Starting your repairs

Repair work should only be undertaken when your house is clean of all mud, silt and debris, and is completely dry.

Water damage

Contact with water can be damaging to some building materials. Depending on the type of building products damage may occur immediately or as a result of prolonged exposure to water.

Before you start work on repairing or remodelling your home, think about choosing building materials that have a higher water resistant rating. This may help to minimise damage from floods and may also make it quicker and easier for you to clean up if you are affected by floods in the future.

Water resistant products

There are a number of building products available that have higher water resistance ratings which are cost effective and easy to install.

Some suggested ways of using water resistant products include:

- replacing kitchen plasterboard wall linings with fibre cement sheeting then tiling over the sheeting using waterproof adhesive
- replacing kitchen bench tops with stone or reconstituted stone products
- using hardwood framing as it's more likely withstand water inundation—better than materials such a particleboard or pine
- using water resistant products such as glass blocks to create a feature wall
- replacing insulation batts in your wall cavities with plastic or polystyrene insulation boards

Table 1 provides more examples of water resistant materials to use in place of less or non-water resistant products.

Product standards

Ensure products and materials used in repairing your home are suitable for their intended use and comply with the relevant product standards.

Look for the following symbols on the product or packaging or check with the manufacturer directly. Alternatively, your builder or building certifier may also be able to assist you in choosing the right products for your home.

Other things to consider

There are other things that you can do to make your property more flood resilient, including:

Meter boxes—if replacing wiring, think about the location of meter boxes and/or electrical switches. Locating items higher up on walls may reduce the likelihood of having to replace wiring in the future.

Helpful hint: make sure you get a licensed electrician to perform all electrical work.

Walls—if the water partly damaged the lower level of walls in your home, consider using water resistant materials on lower parts of the walls. Hardwood timber panelling or ceramic wall tiles used partway up the walls may reduce damage and costs associated with rebuilding in the future.

Water tanks—anchoring your water tank to the ground will help protect your property and other properties during a flood event.

Garage walls—constructing a bench along your garage walls may reduce the impact force of your car against the walls during a flood.

Be aware

Check that tradespeople approaching you for flood repairs are licensed for the work that they intend to undertake. You can check if a builder or carpenter is licensed by the Queensland Building Services Authority at www.bsa.qld.gov.au Only licensed tradespeople should be used to ensure repairs meet building, electrical and plumbing standards.

You also need to check if you need a building approval before undertaking extensive repair work on your property, particularly if the work affects structural components of the house. For more information contact your local council or a building certifier.

If you have insurance please check first with your insurance provider before entering the property or making any changes.

Useful resources

Building Codes Queensland
Tel +61 7 3239 6369
buildingcodes@dlgp.qld.gov.au
www.dlgp.qld.gov.au

Building Services Authority
Homeowner Guide to Rebuilding After a Flood
www.bsa.qld.gov.au

CSIRO
Repairing flood damaged building—how to clean and dry out your home
www.csiro.org.au

Department of Environment and Climate Change and Water—NSW
Reducing vulnerability of buildings to flood damage
www.ses.nsw.gov.au

Housing Industry Association
Some guidance on things to consider when returning to flood affected areas
www.hia.com.au

Timber Queensland
Guide to Assessment and Repair of Flood Damaged Timber and Timber Framed Houses
www.timberqueensland.com.au

Queensland Master Builders Association
Guidelines for working on flood damaged premises
www.masterbuilders.asn.au

Workplace Health and Safety Queensland
www.whs.qld.gov.au/

Table 1—Building materials that may help improve the performance of your house both during and after a flood event

Area	Higher water resistance	Lower or no water resistance
Wall and ceiling linings	• concrete • fibre cement sheet • brick or blockwork • cement render • ceramic wall tiles • galvanised steel sheet • glass and glass blocks • stone • plastic sheeting or tiles with waterproof adhesive • common bricks • solid wood, fully sealed – durable timbers (e.g. hardwood) • exterior grade plywood, fully sealed • non ferrous metals	• particleboard • hardboard • non-durable solid wood (e.g. some soft woods) • interior grade plywood • plasterboard • particleboard • fibreboard or strawboard • wallpaper • cloth wall coverings • gypsum plaster
Doors	• solid panel with waterproof adhesive • flush marine ply with closed cell foam • aluminium or galvanised steel frame • flush or single panel marine ply with waterproof adhesive • painted metal construction • timber frame, full epoxy sealed before assembly Note: even though some water resistant doors may not deteriorate, they can warp or twist, making them unusable	• standard timber frame • standard flush hollow core with PVA adhesives and honeycomb paper core Note: these products are generally inexpensive to replace
Bolts, hinges, nails and fittings	• brass, nylon/ stainless steel, removable pin hinges • galvanised steel, aluminium	• mild steel (Note: should still be usable if not immersed for prolonged periods)
Windows	• aluminium frame with stainless steel or brass rollers • timber frame, full epoxy sealed before assembly with stainless steel or brass fittings	• timber with PVA glues • mild steel fittings
Insulation	• plastic/polystyrene boards • closed cell solid insulation • reflective foil on external walls	• materials which absorb water and delay drying, e.g. loose fill • open celled insulation (e.g. batts)
Floor covering	• clay/concrete tiles • epoxy or cement like floor toppings on concrete • rubber sheets with chemically set adhesive • vinyl sheet with chemically set adhesive • terrazzo • rubber tiles with chemically set adhesive • vinyl tiles with chemically set adhesive • polished floors & loose rugs • ceramic tiles	• loose fit nylon or acrylic carpet, closed cell rubber underlay • wall to wall carpet • wall to wall seagrass matting • cork • linoleum • floating timber floors

Table adapted with permission from the Department of Environment and Climate Change and Water, NSW Government, *Reducing vulnerability of buildings to flood damage,* April 2007.

Department of
Local Government and Planning
PO Box 15009 City East Qld 4002 Australia
tel +61 7 3227 8548
info@dlgp.qld.gov.au

www.dlgp.qld.gov.au

Building newsflash number 460

Re-occupying buildings affected by flood

Purpose

To advise owners and occupants of the need to ensure their buildings are safe before re-occupation where fire safety installations have been affected due to flood damage.

Background

This newsflash is a joint Building Codes Queensland and Queensland Fire and Rescue Service publication.

Following the recent widespread flooding across Queensland there has been significant damage to buildings and in many cases fire safety installations may not be operative.

The Building Act 1975 (BA) requires buildings to continue to perform to the level of safety that was required when the building was constructed. Owners, and in some cases occupiers, are responsible for maintaining a building's fire safety installations.

Local Governments have extensive enforcement powers under the BA with regard to building safety generally.

Issues

Owners and occupiers should take steps to ascertain whether their building's fire safety installations have been damaged or affected by flood waters before allowing the building to be re-occupied. The Queensland Fire and Rescue Service recommend delaying occupation until the building's fire safety installations are functioning correctly.

However, if re-occupation of a building is required before selected fire safety systems are fully operational, in emergency circumstances, the Queensland Fire and Rescue Service is now offering free advice on fire safety issues that may help in mitigating fire safety risks. Please notify Queensland Fire and Rescue Service via email fireris@dcs.qld.gov.au if a building is being occupied that has of the following fire safety installations affected by flood:

- sprinkler systems
- fire detection and alarm systems
- stairwell pressurisation systems.

A Queensland Fire and Rescue Service officer will then contact you to make a time to provide you with fire safety advice as soon as possible. Please provide your building's address, a contact person and telephone number.

Building occupiers may also need to amend their 'fire and evacuation procedures' to accommodate the temporary changes.

Certain high risk public activities should not be undertaken where fire safety installations are not fully operational, for example night clubs. In addition, owners or occupiers may need to take immediate steps to ensure occupants can be safely evacuated at all times such as in nursing homes or other buildings where safety is highly reliant on the effective ongoing performance of building fire safety systems. High occupation buildings such as boarding houses, backpackers and hotels should have operational smoke alarms and emergency lighting at all times.

Owners should monitor their site and where they have any concerns about land slippage or the structural safety of their building they should contact their Local Government for advice as soon as possible.

Contact for further information

Department of Infrastructure and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dip.qld.gov.au

Building newsflash number 461

Flooding impacts on fire safety systems

Purpose

To advise of emergency exemptions for approvals of repairs and replacements of components of fire safety systems following recent the recent flood disaster.

Background

Building codes require some buildings to have fire safety systems such as fire detection and alarm systems, sprinklers and hydrants.

For example, high rise buildings usually have a fire alarm system with a fire indicator panel located on the ground floor. When a part of a building's smoke hazard management system is activated (for example a smoke detection and alarm system), the panel indicates the area of the building in which the alarm has been triggered. Also, some hydrant and sprinkler systems have pump-sets located on the premises or in the building to assist with the operation of the fire systems.

Due to recent flooding across Queensland some fire safety systems may have been damaged and fire panels, pump-sets or other aspects of fire safety systems may need to be replaced to protect occupants. It is essential that owners check their building's systems and take steps to ensure that safety is not compromised.

Issues

Generally, replacing major components of fire safety systems is assessable building work under the Building Act 1975. In addition, fire indicator panels and components of other fire systems are special fire services under the Sustainable Planning Regulation 2009 (SPR) with the Queensland Fire and Rescue Service (QFRS) as a referral agency for advice.

Under normal circumstances building approvals are required for major work on fire safety systems. However, section 584 of the Sustainable Planning Act 2009 (SPA) provides exemptions for building work undertaken in emergency situations. Section 584 authorises building work to be undertaken without the usual approvals in circumstances related to an emergency endangering life or health, or the structural safety of a building.

In the circumstances of the recent flood disaster, damaged fire safety systems pose a risk to life. In particular, a non-functioning fire indicator panel could have severe consequences for the safety of the occupants of a building. Therefore, repairing or replacing components of fire safety systems with a comparable operational component may be undertaken without a building approval by advising the Local Government in writing as soon as practicable after starting the work.

In addition, it is recommended that owners advise their local Queensland Fire and Rescue Service community safety office of the work and provide a certificate from the installer stating the work conforms to the relevant Australian/New Zealand Standard as soon as practicable after completing the work. This will help to ensure Queensland Fire and Rescue Service officers conducting regular maintenance inspections are aware of the new systems.

Contact for further information

Department of Infrastructure and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dip.qld.gov.au

Plumbing newsflash number 462

Flood recovery work—plumbing, drainage and on-site waste water management systems

Purpose

To advise on emergency plumbing, drainage and waste water management systems work; and arrangements in place for the licensing of interstate plumbers and drainers.

Background

The *Plumbing and Drainage Act 2002* (PDA) and Plumbing and Drainage Regulation 2003 provides that regulated plumbing, drainage and on-site sewage/greywater treatment plant work must be completed by an appropriately licensed person.

Before regulated work commences licensed persons must obtain a permit and the work must be assessed upon completion in accordance with the Standard Plumbing and Drainage Regulation 2003 (SPDR).

Issues

Licensing

Defective plumbing and drainage work poses serious risks posed to health and safety and defects can cause significant damage to buildings. Using licensed plumbers and drainers will help ensure that plumbing and drainage work complies with regulations so as to minimise risks to health and safety. In addition Queensland's plumbing regulator, the Plumbing Industry Council can compel licensees to rectify defective work.

The PDA provides that it is an offence for a person to:

- perform regulated work unless the person has a licence to undertake the work and
- direct or supervise the performance of work without having the appropriate licence to undertake the work.

If you are unsure whether a tradesperson who is performing plumbing, drainage or on-site sewage/greywater treatment plant work is appropriately licensed, please contact the Plumbing Industry Council phone +61 7 3235 4149, free call 1800 682 021 or email plumbers@dip.qld.gov.au

Plumbing, drainage and on-site waste water management systems work

The SPDR provides that emergency work may be undertaken without using the permit and inspection process, through Notifiable Minor Work. Emergency work can include the repair of on-site sewage/greywater treatment plants, otherwise known as septic systems. However, emergency work must be performed by an appropriately licensed person.

For emergency work, the licensed plumber/drainer, after completing the work, must notify the Local Government of the work, within 40 business days after the work has been completed by lodging a Form 4 (Notifiable Minor Work).

Emergency work notified to Local Government through a Form 4 process will enable Local Government to keep proper records about the work performed at a property. A Local Government may also audit work performed under a Form 4 process for non-compliance.

Interstate licensing

Building Codes Queensland has received calls from interstate plumbers and drainers offering to come to Queensland to assist with the flood recovery work. Building Codes Queensland has made arrangements with plumbing regulators in jurisdictions across Australia to enable interstate tradespeople to obtain a Queensland equivalent licence to undertake the flood recovery work.

Under the *Mutual Recognition Act 1992 (Cwth)*, if a person holds a licence from another state, territory or New Zealand, their accreditation will be recognised in Queensland and that person may apply for a licence equivalent to the one the licensee already holds.

Any interstate licensee who wishes to perform regulated work in Queensland is to contact the Plumbing Industry Council's licensing team on (07) 3247 3618 or the plumbing regulator in their jurisdiction, who will advise of the process to obtaining an immediate Queensland licence.

Information to assist the community in flood affected areas

Building Codes Queensland has prepared frequently asked questions to assist people who have a property that has been affected by the recent flooding. The questions also provide information about building, plumbing, swimming pools and water use. The frequently asked questions are available on the department's website: www.dip.qld.gov.au/plumbing-building/flooding or by contacting Building Codes Queensland.

Contact for further information

Department of Infrastructure and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dip.qld.gov.au

Building and Plumbing newsflash number 463

Building information for flood affected property owners, Queensland Plumbing Wastewater Code and plumbing forms

Purpose

To advise that:

- information relating to the rebuilding or repair of flood affected buildings is now available on the Department of Local Government and Planning's website
- newly amended plumbing laws allow like-for-like replacement of electric hot water systems damaged in natural disaster events
- simplified plumbing forms are now available
- plumbing licenses lost in flood will be replaced at no cost.

Building information for flood affected property owners

Following the recent widespread flooding across Queensland, there has been significant damage to buildings, with many buildings requiring repair or rebuilding.

As the community takes action to repair and restore buildings, it is important to remember that all building work must comply with the relevant codes and standards, including the Building Code of Australia and the Queensland Development Code.

Owners need to consider before commencing any rebuilding and repairing activities if a planning or building approval is required. A series of questions and answers to assist owners in deciding whether their repair or rebuilding activities require approval are available on the Department's website at http://www.dlgp.qld.gov.au/fact-sheets/building-factsheets.html. Homeowners may contact their local Government or a licensed building certifier for advice on what approvals are required.

The website also has information to assist people who are repairing a flood affected property. The fact sheet provides information about the use of building materials and techniques that may assist to make a home more flood resilient in the future. Homeowners need to consider whether materials and products used in repairs are suitable for their intended use and ensure that they comply with the relevant standards. Homeowners should also check the license and insurance details of tradespeople who approach them for flood repairs.

Amended Queensland Plumbing and Wastewater Code (QPW Code)

The QPW Code has been amended to permit owners of houses and townhouses (class 1 buildings) in natural gas reticulated areas to replace an existing electric hot water system with another electric system where a natural disaster event has occurred. A licensed plumber must certify that the existing electric hot water system needs to be replaced due to damage caused by a natural disaster event.

Revised Plumbing and Drainage forms

To simplify plumbing forms—Forms 1 and 2 have been combined and Form 4 has been amended. Changes include amalgamating Forms 1 and 2 removing unnecessary fields and adding information relating to the Distributor-Retailers.

Form 4 now has a field for plumbers to declare if an electric resistance hot water system (EHWS) has been replaced with an existing EHWS due to a natural disaster. It also clarifies section 7 which states the person or licensee completing and signing the Form 4 must be the person who undertook the work.

The amended mandatory Forms are now available on the Department's website www.dlgp.qld.gov.au

Replacement of lost/damaged Plumbing and Drainage licences

The Department will not be charging for licence replacements for licensees who have had their licence lost or damaged in the recent floods.

Contact for further information

Department of Local Government and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dlgp.qld.gov.au

Building newsflash number 464

- Legislative changes on pool safety
- Amendments to *Building Act 1975* for Building surveying technicians

Purpose

To advise of temporary changes to pool safety laws in response to Queensland's flooding events and Cyclone Yasi; amendments to scope of pool safety management plans and changes to the scope of work able to be performed by certain building survey technicians employed by Local Governments.

Pool safety laws

Rental properties

The *Queensland Reconstruction Authority Act 2011* (QRAA) which received Royal Assent on Monday 21 February 2011, has introduced a six month delay to the requirement for pool safety certificates for rental properties with non-shared pools, such as houses. This applies from 8 January to 8 July 2011 (inclusive) and allows these properties to be leased without a pool safety certificate.

The exemption ONLY APPLIES to rental properties with non-shared pools. All other aspects of the new pool safety laws still apply, and are not affected by this temporary exemption.

Pool owners affected by the exemption are required to give an approved notice (Form 37) to the tenant before entering the lease if a pool safety certificate is not in effect. This exemption applies statewide and is intended to allow homes to be more easily rented to evacuees, or people who are assisting with recovery efforts.

Pool owners still need to ensure their pool complies with the pool safety laws applicable when the pool was built.

Pool safety management plans

The QRAA has also introduced the ability for owners of pools on common property in a class 3 building, for example a hotel, motel or backpackers accommodation etc., to apply to the Department for approval of a pool safety management plan, instead of complying with the pool safety standard. Processes, guidelines, forms and fees are currently being established to support these amendments.

For more information on these pool safety changes, please visit www.dip.qld.gov.au/poolsafety, telephone 1800 340 634 or email psc@dip.qld.gov.au

Building surveying technicians

Prior to 1 January 2010, licensed building surveying technicians were able to perform building certifying functions on all classes of buildings up to 500 square metres in area and no more than two storeys in height if employed by a Local Government.

However, to help address shortages in the residential sector, the *Building Act 1975* (BA) was amended to allow building surveying technicians to practise in both the private and Local Government sectors from 1 January 2010 for class 1 and class 10 buildings of any size.

Following feedback from Local Governments and building certifiers, the QRAA has now introduced a transitional provision to allow individuals who were licensed as building surveying technicians immediately before 1 January 2010 to continue carrying out building certifying functions on all classes of buildings up to 500 square metres in area and no more than two storeys in height, if they are employed by a Local Government. These changes also ratify work completed by Local Government building surveying technicians from 1 January 2010.

These changes only affect building surveying technicians who were licensed immediately before 1 January 2010, or who were issued with a licence or renewed licence under section 287(1) of the BA. All other building surveying technicians continue to be restricted to class 1 and 10 buildings.

Contact for further information

Department of Infrastructure and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dip.qld.gov.au

If you have not received this Building and Plumbing Newsflash directly from 'Enquiries (BCQ)', you can subscribe via: buildingcodes@dip.qld.gov.au

Building newsflash number 465

- Engineering services in flood and cyclone affected areas
- Guideline on repairing/rebuilding sheet metal roofs after a cyclone

Purpose

This newsflash provides information relating to professional engineering services for repairs and rebuilding work being conducted in flood and cyclone affected areas.

It also provides advice about a guideline for the repair of sheet metal roofs in cyclonic areas that the Department of Local Government and Planning (Department) has recently published.

Professional engineering services

The Professional Engineers Act 2002 requires a person carrying out professional engineering work anywhere in Queensland to be a Registered Professional Engineer of Queensland (RPEQ) registered with the Board of Professional Engineers of Queensland (the board). Alternatively, the person must carry the work out under the direct supervision of an RPEQ.

Due to the significant amount of damage as a result of flood waters and recent cyclones, there is a large amount of repair work that needs to be urgently carried out to buildings and infrastructure. This may, in some cases, require an RPEQ to inspect and report on structural aspects of damaged buildings and infrastructure.

Before an RPEQ is engaged to inspect, recommend or supervise repair work, their registration card should be requested. To confirm the RPEQ is currently registered with the board, their name can be publicly viewed on the register on the board's website at www.bpeq.qld.gov.au

It is also important to engage an RPEQ who is registered in the area of engineering applicable to the field of work requiring repair. For example, large infrastructure that has sustained substantial electrical damage would be best referred to an engineer in the 'electrical' area. For buildings and other infrastructure with structural or fire safety damage, an engineer registered in the areas of 'structural or fire safety' may be appropriate.

The requirements for using RPEQs applies across all sectors engaged in professional engineering services, including local, state and federal government, and private industry. If you are unsure of the exact engineering services required, advice may be obtained directly from the Board.

For further information about professional engineering services, please contact:

Board of Professional Engineers of Queensland
tel +61 7 3224 6032
www.bpeq.qld.gov.au

Information on repairing / rebuilding after a cyclone

The Department has developed a guideline to assist building certifiers and builders in the repair and reconstruction of damaged sheet metal roofs in cyclonic areas. This guideline can be viewed or downloaded from the Department's website at www.dip.qld.gov.au/plumbing-building/flood-information.html

Contact for further information

Department of Local Government and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dip.qld.gov.au

If you have not received this Building and Plumbing Newsflash directly from 'Enquiries (BCQ)', you can subscribe via: buildingcodes@dip.qld.gov.au

Building newsflash number 470

Revised pool registration, spa pool heating requirements and guidelines, and new accreditation body for building certifiers

Purpose

To advise:

- the Royal Institution of Chartered Surveyors (RICS) is now approved under the *Building Act 1975* (BA) to take applications for the accreditation of building certifiers
- a corrigendum has been issued to amend the Building Code of Australia (BCA) provisions for spa pool heating
- Queensland Development Code (QDC) guidelines have been revised and a new BA guideline has been approved to assist hotel, motel, resort and other class 3 building owners in developing pool safety management plans
- pool owners now have until 4 November 2011 to register their pools on Queensland's Pool Safety Register.

Royal Institute of Chartered Surveyors (RICS)

The Building Act requires an application for a licence as a building certifier to be accompanied by a certificate of accreditation from an accreditation standards body. An accreditation standards body is responsible for setting educational and experiential standards for each level of licensing as a building certifier and establishing a professional development scheme. Previously the Australian Institute of Building Surveyors was the only approved accreditation body in Queensland.

On 1 December 2010, the RICS was listed as a second accreditation standards body under the Building Regulation 2006. On 8 April 2011, the Department of Local Government and Planning approved the educational and experiential standards and professional development scheme set by RICS under section 185 of the Building Act.

This means that building certifiers can now apply for accreditation in Queensland with RICS.

For further details on making an application for accreditation with RICS please contact:

Royal Institute of Chartered Surveyors
tel + 61 2 9216 2333
info@rics.org.au
www.rics.org/oceania

Heating of spa pools

In May 2010, the BCA introduced energy efficiency requirements for the heating of swimming and spa pools. However, in early 2011 stakeholders raised concerns about the impacts of these provisions on the pre-fabricated spa industry.

The BCA 2011 (now part of the National Construction Code series) was adopted in Queensland on 1 May 2011. On 2 May 2011, the Australian Building Codes Board advised it had issued a corrigendum to amend the BCA 2011 to clarify that the energy efficiency requirements specifically relate to spa pools that share a water recirculation device with a swimming pool. These amendments took effect from 1 May 2011.

Pool safety management plan

Prior to 1 December 2010, State pool barrier laws did not apply to hotels, motels, backpackers, larger boarding houses and hostels (class 3 buildings). A limited number of Local Governments enacted local laws requiring pool barriers in class 3 buildings.

Under amendments to the *Building Act 1975* which commenced on 1 December 2010 as part of the pool safety improvement strategy, hotels, motels, backpackers, larger boarding houses and hostels (class 3 buildings) are required to comply with the pool safety standard by **1 June 2011** (that is, at the end of a six month phase-in period for owners of shared pools associated with short-term accommodation).

As an alternative to complying with the pool safety standard the owner of a pool associated with a class 3 building may use an approved pool safety management plan to comply with swimming pool safety legislation.

To assist pool owners interested in developing a pool safety management plan a guideline has been published by the Department of Local Government and Planning. The guideline is available on the department's website www.dlgp.qld.gov.au

Fees apply for the assessment of pool safety management approvals

Initial Application fee	$1658
Per pool (after the first)	$93
Onsite inspection fee (if inspection required by chief executive)	$932
Re-approval fee (after one year with no substantial changes)	$332
Re-approval fee where a substantial change—as per initial application fee, including the onsite inspection fee	

Six month extension for pool owners register their pools

An extension has been provided to the requirement for pool owners to register their pool (excluding class 3 buildings) on Queensland's Pool Safety Register. Pool owners now have until **4 November 2011** to register their pool.

Revised and new QDC guidelines available

QDC Mandatory Part 4.1–Sustainable buildings guideline (version 3)
The existing guideline has been updated to reflect current provisions of the QDC MP 4.1–Sustainable buildings. This information can be used to assist building industry professionals and homeowners comply with the QDC. It provides explanatory details on relevant issues, including new sections covering 6-star housing, optional credits for outdoor living areas and photovoltaic (solar) energy systems, 5-star unit buildings, end-of-trip facilities and electricity sub-metering.

Design guide for 6-star energy equivalence housing (new)
This new guide has been prepared to assist housing designers and architects with implementing the 6-star energy equivalence housing requirement. A case study design is used in each of Queensland's four climate zones (under the Building Code of Australia) to demonstrate suitable design strategies for cost-effective compliance.

Air conditioner guide (new)
The air conditioner section from the previous version of the Guideline for Sustainable buildings has been revised and incorporated into a separate guide. This information has been prepared to assist with the design, installation and maintenance of air conditioners to optimise their energy efficiency and comfort performance.

These add to the range of existing guidelines and supporting documents that provide supplementary information about the sustainable housing requirements, including the Sustainability Declaration Reference Guide (version 3, September 2010) and the Peer Review guideline (version 2, October 2010).

The guideline and guides will be available over the coming days and can be downloaded from the department's website at www.dlgp.qld.gov.au

Contact for further information

Department of Local Government and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dlgp.qld.gov.au

If you have not received this building and plumbing newsflash directly from 'Enquiries (BCQ)', you can subscribe via: buildingcodes@dlgp.qld.gov.au

Building and plumbing newsflash number 472

Exemptions for raising houses, extended registration period for pools and combination hand basin/cisterns

Purpose

To advise:

- raising homes in flood-prone areas has been facilitated by an exemption from the sustainability upgrade requirements under the QDC and BCA and prescribing relevant plumbing work as 'notifiable minor work'
- the revised date for registration of regulated pools is 4 November 2011
- integrated handbasin/cisterns may now be installed in class 1a, 2 and 4 buildings.

Issues

Raising houses subject to flood or storm surge events

Raising a house can be a way of avoiding future water damage to homes from floods or storm surges associated with tropical cyclones. House-raising works require a building and a plumbing approval. The building approval involves consideration of compliance with the sustainability requirements of the Queensland Development Code mandatory part 4.1—Sustainable buildings (QDC 4.1). Also, work may not proceed until a plumbing permit is in place.

Compliance with the energy and water efficiency performance requirements of QDC 4.1 can involve, for example, the installation of energy-efficient air-conditioners and lighting and water efficient toilets and tap ware.

To minimise costs for homeowners who are raising their homes to make them more resilient to future flood and storm surge events, the QDC 4.1 has been amended to relax its requirements where:

- a building certifier has certified in writing that the building has been affected by a flood or storm surge
- the building is located in a natural hazard management area (flood)
- a local government has declared that the building is likely to be affected by a future flood or storm surge by written notice given to the owner or notice published on its website.

The building certifier must also certify that the work constitutes, or directly relates to, the raising of the building for flood mitigation purposes.

Work associated with raising a house such as the installation of new stairs and landings still need to comply with all other current building assessment provisions relating to structural integrity and safety.

The exemption from QDC 4.1 does not apply to work that is not related to the house raising, for example if an owner adds a new bathroom or new rooms beneath the home. This work will need to comply with the sustainability requirements of QDC 4.1 to the extent practicable.

The Standard Plumbing and Drainage Regulation 2003 (SPDR) has been amended to facilitate house raising by removing the need for a plumbing approval. Instead, plumbing work to disconnect, extend and reconnect existing plumbing and drainage for a house is now prescribed as 'notifiable minor work'. Under the *Plumbing and Drainage Act 2002*, 'notifiable minor work' must be notified to the relevant local government in the approved form, but there is no need to obtain a plumbing permit prior to undertaking the work. The local government may audit the plumbing work.

Repairs of flood damage

In the case of repairs to a house that sustained damage in floods, building certifiers are encouraged to use their discretion to apply a 'like-for-like' reinstatement of affected homes, so that houses continue to comply with the sustainability standards applicable when the house was built or last renovated.

Extended due date for pool registrations

Under the new Queensland pool safety laws introduced in December 2010 pool owners were required to register their pool by 4 May 2011. This registration date has been extended by six months. The Building Regulation 2006 has been amended to prescribe 4 November 2011 as the new date by which a pool owner must register their pool with the department.

Visit the department's website to register a pool.

Integrated hand basin/toilet cistern

This water-saving device comprises a hand basin that sits on top of a toilet cistern. When the toilet is flushed, the water supply for the cistern is diverted to the spout of the hand basin for hand washing, which in turn directs and discharges greywater into the cistern for future toilet flushing.

The SPDR has been amended to permit the installation of these devices in classes 1a, 2 and 4 buildings. However, greywater (whether treated or not) is not considered safe for hand washing while rainwater is. Therefore, combination hand basins must not be supplied by greywater. Combination hand basins must be supplied by reticulated potable water or rainwater.

Contact for further information

Department of Local Government and Planning
Growth Management Queensland
Building Codes Queensland
tel +61 7 3239 6369
buildingcodes@dlgp.qld.gov.au

If you have not received this Building and Plumbing Newsflash directly from 'Enquiries (BCQ)', you can subscribe via: buildingcodes@dlgp.qld.gov.au

Building newsflash number 474

Early adoption of Standard for Construction of Buildings in Flood Hazard Areas

Purpose

To seek comments on early adoption of the Australian Building Codes Board's (ABCB) draft national Standard for Construction of Buildings in Flood Hazard Areas (the draft Standard) in Queensland.

Background

The ABCB has developed the draft Standard and Information Handbook with the assistance of a reference group made up of representatives from state and local governments, the building and engineering industries, and flood and hydrology experts. A copy of the draft Standard and Information Handbook is attached and available online.

A national regulatory impact statement for the draft Standard is intended to be released in late 2011 by the ABCB and finalised in early 2012. The draft Standard is scheduled to be included in the 2013 version of the Building Code of Australia from 1 May 2013.

In the interim, Queensland is considering early adoption of the draft Standard for new buildings, including new additions.

The draft Standard and Information Handbook
The draft Standard provides specific performance requirements and deemed-to-satisfy (DTS) provisions for the design and construction of new buildings in designated flood hazard areas. In Queensland flood hazard areas are designated by local governments.

The draft Standard currently applies to class 1 (houses and townhouses), class 2 (units and flats), class 3 (hotels, motels and backpackers accommodation), class 4 (caretaker's dwellings), class 9a (health care) and class 9c (aged care) buildings.

Some other aspects of the draft Standard are:

- the DTS provisions are limited to cases of likely flooding with a maximum average flow rate of 1.5 metres per second (around 5.4 kilometres per hour)
- floors of habitable rooms must be above the flood hazard level (this includes any freeboard set by local government), while floors of enclosed non-habitable rooms must be no more than one metre below the flood level
- building materials used for structural purposes below the flood hazard level must be capable of resisting damage and deterioration due to contact with flood waters
- utilities and related equipment, including electrical services, plumbing and drainage systems are required to be either located above the flood hazard level or constructed in a flood proof manner.

The Information Handbook is advisory only and provides information to support the application of the draft Standard. It also provides information on measures outside the scope of the draft Standard, for example the use of water resilient materials below the flood hazard level.

Issues

Early adoption of the draft Standard by Queensland
To help address the immediate needs associated with constructing new buildings and additions in flood affected areas, and to generally improve flood resilience of communities across Queensland, it is proposed to adopt the draft Standard as a new mandatory part of the Queensland Development Code (QDC) in late 2011.

Application of the proposed QDC
It is proposed that the new QDC will apply to new buildings and additions to existing buildings, but not to other building alterations.

For additions to existing buildings, it is recognised that compliance with the draft Standard could potentially result in situations where the addition is raised to a higher level than the existing part of the building. One potential solution may be for property owners to have the ability to apply to their local government for an exemption from meeting the QDC requirements for building additions where it would be impractical to do so.

Proposed Queensland additions to the draft Standard
The Queensland Government is considering including some further aspects in the QDC that are currently outside the scope of the draft Standard. These are expected to include some additions to the mandatory parts of the QDC, as well as some additional non-mandatory parts that will be able to be adopted by local governments on a voluntary basis through a planning scheme, Temporary Local Planning Instrument, or by resolution.

Mandatory part
The draft Standard does not set a minimum 'freeboard', i.e. the additional height above the expected flood level to provide a factor of safety, and instead allows the local government to set a freeboard as required. For consistency, it is proposed the new QDC set a uniform minimum freeboard of 300 millimetres, unless otherwise specified by the relevant local government.

Non-mandatory part
The draft Standard includes requirements for structural building materials used below the flood hazard level. It is proposed to include non-mandatory provisions in the QDC that expand this requirement to all building materials below the flood hazard level to be flood resilient. If adopted by a local government, this would build flood resilience into buildings built in flood hazard areas and help minimise damage to non-structural materials caused by water, debris and mud. This approach is currently being used by local governments, such as Brisbane City Council and Ipswich City Council, through the introduction of Temporary Local Planning Instruments.

Many commercial buildings and their contents were damaged by the recent Queensland floods. This also highlighted water quality issues, including the clean-up of flood affected buildings, environmental impacts of contaminated floodwaters and concerns for the health of residents, tradespeople and volunteers post floods. It is proposed to expand the types of buildings covered by the draft Standard by including non-mandatory provisions in the QDC that apply to commercial buildings. For example, these buildings could be required to meet the performance requirements of the Standard, and could be required to have a certain part of their gross floor area raised above the flood hazard level to enable potential contaminants to be elevated. This is similar to the approach currently taken by Rockhampton Regional Council, which requires commercial buildings to have 30 per cent of gross floor area 500 millimetres above the designated flood level.

Your comments on the proposal to adopt the draft Standard and additional provisions through a new part to the QDC would be most appreciated. Please provide comments by emailing buildingcodes@dlgp.qld.gov.au (subject: Flood code feedback) by **5pm Thursday 25 August 2011.**

Contact for further information

Department of Local Government and Planning
Building Codes Queensland Division
tel +61 7 3239 6369
buildingcodes@dlgp.qld.gov.au

SCOPING PAPER FOR A FLOOD STANDARD TO BE REFERENCED IN BCA

BACKGROUND

The Building Ministers' Forum (BMF) meeting held on 13 November 2009 resolved that the ABCB "*cease work on the flooding handbook and report back to BMF as to whether a standard for building in flood prone areas can be developed and in what time frame this could be achieved*."

This scoping paper investigates the development of a standard for housing and other low rise residential buildings in flood prone areas for future referencing in the Building Code of Australia (BCA) in accordance with the BMF resolution.

This paper also provides comment on the purpose and possible scope of an accompanying non-regulatory Handbook.

PURPOSE AND POSSIBLE SCOPE OF A STANDARD

The purpose of a standard for buildings in flood prone areas would be to reduce the risk of death or injury of building occupants as a result of structural failure of building when subjected to flood loads. This outcome would be consistent with the objectives of the BCA, which primarily address the life safety of building occupants rather than protection of property.

Under the IGA, a flood standard for referencing in the BCA would be subject to the following-

- The flood standard would cover new buildings and new work in existing buildings.
- The scope of the flood standard would be restricted to the current BCA objectives of health, safety, amenity and sustainability. Therefore the standard would focus on structural safety and life safety, not protection of property or building contents.
- Regulation impact assessment including an analysis of alternative measures and a benefit cost analysis.

It is possible to deal with buildings affected by flood along similar lines to the way the BCA currently deals with buildings affected by bushfire. That is, a standard for construction of buildings in a ‘flood prone area’ could be developed and referenced in the BCA, similarly to the current standard for the construction of buildings in a 'bushfire prone area'.

'Flood prone area’ could be defined as an area subject to flooding during the ‘design flood’. Most authorities having jurisdiction in Australia have adopted a flood event with an annual probability of 1:100 as the basis for defining the design flood, with varying amounts of additional freeboard to allow for wave action and other uncertainties. Local governments could identify or map flood prone areas in planning instruments similarly to how many currently map bushfire prone areas.

The standard could be referenced in the BCA as a deemed-to-satisfy building solution.

LIMITATIONS

In order to provide cost effective solutions, this scoping paper recommends that the standard be applicable only to:

- Specific types of buildings: It is proposed the standard be applicable to residential, health care and aged care buildings that people sleep in (ie Class 1, 2, 3, 4, 9a and 9c buildings as defined in the BCA) and not to commercial, industrial, high hazard, or other non-habitable buildings.
- Specific kind of flooding: It is proposed the standard be applicable only to construction in flood prone areas with a flow rate less than 1.5m/s and a depth of inundation less than 1.0m.

This does not mean that buildings outside these limits cannot be built, but rather they should be subject to an alternative solution path on a case by case basis. Local government planning instruments would determine the areas where the proposed flood standard can be used ie where the depth of inundation is less than 1.0m and the flow rate is less than 1.5m/s.

The proposed limitation on types of buildings means houses, other residential buildings, and health and aged care facilities used for sleeping accommodation would be covered by the standard, but not commercial, industrial, non-habitable buildings or those of a specialist or hazardous nature. The proposed limit on flow rate is related to erosion, strength and debris issues, while the proposed limit on depth of inundation is related to the protection of services, strength and material issues, and prevention of high velocity wave action. Both flow rate and inundation depth have implications for structural design and subsequent cost of construction. The USA has developed a flood standard using these same limitations. It would be very difficult to develop an appropriate prescriptive solution where these limitations are exceeded, due to the excessive forces generated and the high level of building material inundation exposure. If it is agreed that the ABCB develop a flood standard, one of the first steps would be to review the USA flood standard to determine which aspects could be applicable in Australia.

POSSIBLE CONTENT OF STANDARD

- Part 1 - Flood actions:
    - Erosion and scour actions
    - Hydrostatic actions
    - Hydrodynamic actions
    - Wave actions
    - Action combinations

- Part 2 - Design and construction requirements
    - Use of fill

- Slabs on grade
- Footings and foundations
- Areas below design flood elevation
- Height of habitable floors above design flood level
- Height of freeboard to cater for wave action
- Habitable area considerations
- Non-habitable area considerations
- Materials
- Dry and wet flood proofing
- Protection of services
- Means of egress
- Impacts on other structures

These two parts could be combined into a single standard or contained in two separate standards (one on loading and one on design).

OPTIONS FOR DEVELOPMENT OF THE STANDARD

Options for the development of the proposed standard include:

1. ABCB to develop the standard in-house in accordance with the established ABCB standard development processes.
2. ABCB to engage an appropriate consultant to develop the draft standard for the ABCB to finalise.
3. ABCB to engage Standards Australia to publish the standard. Note the ABCB would be required to first provide Standards Australia with a draft standard.

All three options would require regulation impact analysis and public consultation before the finished standard could be adopted in the BCA. The cost of the impact analysis and consultation would be around $80,000, plus a further $20,000 for the final Regulation Impact Statement.

The cost of option 1 would be in the order of $200,000 in project funding plus 0.5 ASL and take around 18 months to complete (including the impact analysis and consultation), so the total cost would be around $260,000.

The cost of option 2 is likely to be higher than option 1 because the cost of project funds would be greater (engaging a consultant to prepare the draft standard) even though the ABCB Office staff resources would be reduced.

Option 3 is likely to cost the most because of the need to develop a draft standard in addition to the Standards Australia costs, and the timeframe would be greater because of the Standards consensus process using volunteer committee members.

The commencement of any of the options would depend on priorities and availability of resources.

PURPOSE AND POSSIBLE SCOPE OF A NON-REGULATORY HANDBOOK

A flood standard for referencing in the BCA would be limited in scope to the BCA objectives ie matters relating to health and safety. The standard would also be limited to new buildings and new work in existing buildings.

If it is intended to provide information on property protection or protection of a building's contents, or provide information on protection of existing buildings or on "best practice" rather than proportional requirements, it would not be appropriate to include this information in a standard. However, such information could be included in a non-regulatory advisory handbook which complements the flood standard (ie does not duplicate the flood standard). A handbook could extend beyond the BCA objectives and provide useful information for the community.

An advisory handbook for building in flood-prone areas to complement the flood standard could be developed by the ABCB in around 12 months at a cost of around $150,000 plus 0.5 ASL, totalling around $210,000. The commencement of the project would depend on priorities and availability of resources.

RECOMMENDATION

It is recommended the BMF be advised that –

(i) a preliminary analysis of the benefits of developing a standard or a handbook or both documents could be undertaken as an aid to decision making, and

(ii) the results of the preliminary analysis be reported back to the next meeting of the BMF.

Agenda Item 9.3: OTHER BUSINESS: BUILDING IN FLOOD PRONE AREAS

ACTION: ***The BMF to consider Queensland's paper on building in flood prone areas.***

9.3 INTRODUCTION

The Australian Building Codes Board, at its meeting of 24 September 2009, agreed to the following action concerning *Building in Flood Prone Areas*:

Members supported the recommendation to develop a handbook for building in flood prone areas, in a performance based format, which is suitable for use by jurisdictions. The success of the handbook will be monitored to determine whether regulation is required in future. Members also agreed that the development of the handbook be linked to the climate change project.

The NSW representative suggested that a Planning Officials' Group and National Flood Risk Advisory Group representative be invited to participate in the development of the handbook.

Actions

- Develop a handbook for building in flood prone areas in a performance based format which is suitable for use by jurisdictions.
- Write to the Planning Officials Group and National Flood Risk Advisory Group advising that a handbook will be developed by the ABCB on building in flood prone areas and requesting their participation in a working group.

Minister Hinchliffe subsequently wrote to the Chair of the BMF on 30 September 2009, requesting that this matter be included on the BMF agenda for discussion. The **attached** paper, below, has been prepared by the Queensland Government, for BMF information and consideration.

The Queensland BMF member will give a brief presentation on this matter.

QUEENSLAND ATTACHMENT: Building in Flood Prone Areas

ACTION:	***The BMF to:*** ***(a) note the significant impact of flooding on buildings in Australia and the current lack of national building standards to address this issue; and*** ***(b) agree for the Australian Building Codes Board to develop a national standard for building in flood prone areas within 12 months that is suitable for regulatory adoption by individual States and Territories.***

9.3.1 BACKGROUND

Overall, flooding is Australia's costliest form of natural disaster. Losses are estimated at over $400 million a year. However, unlike other natural disasters such as cyclones, bushfires and earthquakes, there are currently no national building standards for building in flood prone areas. Instead, flooding is dealt with in a piecemeal manner by State, Territory or Local Governments, and in many cases is not dealt with at all.

Flooding can range from localised flash flooding associated with thunderstorms to widespread flooding following heavy rain over the catchment areas of river systems. Historic settlement patterns have resulted in Australia having significant development on floodplains, with many towns and cities located close to rivers. The risks and consequences from flooding hazards vary across Australia, but flooding can be particularly hazardous when combined with high winds or cyclonic activity as this can result in storm surge inundation.

A number of recent reports have predicted climate change is likely to increase the risk of flooding events in Australia. Climate change risks raise concerns that more settled areas will be exposed to flooding and that buildings in flood prone areas will not be sufficiently resilient to the predicted increases in flooding expected from climate change. In particular, there is an increased risk of flood damage to buildings in low lying and coastal areas. Many buildings in flood prone areas could become uninsurable, or at least face significant increases in insurance premiums.

Natural hazards such as floods cannot be averted, but their consequences can be minimised by implementing mitigation strategies, such as developing national standards for building in flood prone areas.

Community vulnerability to flood impacts, particularly in light of climate change, will depend on a combination of improved planning decisions and consistent, contemporary building standards for building work in areas that are vulnerable to inundation or flood prone.

9.3.2 ISSUES

The Australian Building Codes Board (ABCB) has been undertaking a project on flooding for a number of years and has recently proposed a non-regulatory approach through the development of a handbook for building in flood prone areas.

Given the significant impact and cost of flooding on the Australian community, this issue should be given greater recognition in building standards. The objective of the standards would be similar to the objectives of bushfire and wind loading standards, namely to provide an adequate level of community resilience for disasters that may otherwise cause widespread community damage or harm.

Some States and Territories have historically set some level of basic standards for building in flood prone areas through their building legislation by, for example, setting levels for habitable rooms. This approach does not mitigate the many forms of damage to homes or provide sufficient community resilience where whole communities are inundated. Also, approaches are not consistent between jurisdictions and regulatory guidance is non-existent in some jurisdictions.

Recent flood experiences in Queensland show that with climate variability and changing rainfall patterns there is a need for a proactive approach with respect to building standards. In addition, as Australia's population grows, so do pressures within communities to allow land to be development for habitation.

It is therefore proposed that the non-regulatory handbook proposed by the ABCB be developed as a national building standard that is suitable for individual States and Territories to adopt for regulatory use. The standard should be developed along the lines of the existing format used for the Building Code of Australia, including performance requirements and a set of deemed-to-satisfy standards that designers and builders would apply to buildings proposed in areas designated as flood prone or otherwise subject to risks of inundation by water, by the relevant authority (typically State, Territory or Local Government).

A national standard will promote a more consistent approach to the risks posed by flooding and provide a set of contemporary standards that will allow Governments to plan adaptive strategies for climate change risks. Flooding can cause very significant community disruption. The risks posed by flooding should be properly recognised in the national building standards framework in line with other natural hazards such as cyclones, bushfires and earthquakes.

Agenda Item 9.4: OTHER BUSINESS: DISABILITY ACCESS

ACTION:	***The BMF to note progress on the development of Disability (Access to Premises – Buildings) Standards***

9.4.1 OVERVIEW

Parliamentary Secretary the Hon Richard Marles MP will provide a brief update on the development of *Disability (Access to Premises – Buildings) Standards* ('Premises Standards').

9.4.2 BACKGROUND

The proposed Premises Standards provides a set of technical provisions for the construction and alteration of buildings, which are deemed to satisfy the intent and objectives of the DDA.

The Premises Standards, in addition to the technical requirements which will be mirrored in the Building Code of Australia (BCA), also contains provisions that can only be given effect through State and Territory based administrative systems.

State and Territory legislative and administrative frameworks, therefore, will need to be amended in order for the Premises Standards to be given full legal effect. This is because it is not currently possible for the Building Code of Australia, which is referenced by each State and Territory, to accommodate all aspects of the Premises Standards, such as differentiating between new and existing buildings. Some jurisdictions may also elect to establish Access Panels. The cooperation of each State and Territory is needed to ensure a consistent approach for implementation and administration is adopted.

'Access All Areas' Report (AAA Report)

The draft Premises Standards was tabled in Parliament on 3 December 2008. The Premises Standards were then referred to the House of Representatives Standing Committee on Legal and Constitutional Affairs to conduct an inquiry.

The Committee tabled its report, *Access All Areas*, in Parliament on 15 June 2009. An overview of the recommendations is provided, as follows:

- Introduction of the Premises Standards without delay. Any issues which cannot be finalised without causing delay should be considered at a later date.
- Inclusion of the common areas of Class 2 (residential apartments) in the Premises Standards.

DRAFT RECORD of MEETING

Building Ministers' Forum

SUBJECT: Building Regulation Reform

Australian Government
Department of Innovation Industry, Science and Research

Meeting Details:

Date: 13 November 2009

Time: 10.00am to 2.00pm

Venue: Ground Floor Conference Room, 4 Treasury Place, Melbourne

BMF Attendees

Senator the Hon Kim Carr
Minister for Innovation, Industry, Science and Research
COMMONWEALTH OF AUSTRALIA

The Hon Richard Marles,
Parliamentary Secretary for Innovation, Industry, Science and Research.
COMMONWEALTH OF AUSTRALIA

The Hon Helen Morton MLC
Acting for the Hon Troy Buswell MLA, Minister for Housing and Works)
WESTERN AUSTRALIA

The Hon Lisa Singh MP
Minister for Workplace Relations
TASMANIA

The Hon Stirling Hinchliffe MP
Minister for Infrastructure and Planning
QUEENSLAND

The Hon Justin Madden MLC
Minister for Planning
VICTORIA

The Hon Paul Holloway MLC,
Minister for Urban Development and Planning
SOUTH AUSTRALIA

[redacted]
Acting for the Hon Kristina Keneally MP, Minister for Planning
NEW SOUTH WALES

[redacted]
Acting for Mr Andrew Barr MLA, Minister for Planning
AUSTRALIAN CAPITAL TERRITORY

[redacted]
Acting for the Hon Delia Lawrie MLA, Minister for Planning and Lands
NORTHERN TERRITORY

Apologies

Mr Andrew Barr, Minister for Planning, ACT

The Hon Troy Buswell MLA, Minister for Commerce, WA

The Hon Delia Lawrie MLA, Minister for Planning and Lands, NT.

The Hon Kristina Keneally MP, Minister for Planning, NSW

The Hon Phillip Costa MP, Minister for Water & Minister for Regional Development, NSW

The Hon Karlene Maywald MP, Minister for Water Security, SA

Invited Presenters

[redacted] Chair, National Plumbing Regulators' Forum.

[redacted], Branch Manager, Deregulation COAG Branch, Department of Finance.

Mr Barry Neilsen, Acting Australian Building Codes Board Chair.

[redacted], Consultant for the Energy Efficiency RIS, Centre for International Economics.

Meeting Record/Outcomes

Agenda Item 1: Welcome and Introduction

Minister Carr opened the meeting at 10.10am.

Agenda Item 2: Confirmation of Record of Previous Meeting – 21 May 2009

The record of BMF meeting from 21 May 2009 was confirmed.

Agenda Item 3: Situational Report from the National Plumbing Regulators Forum

[redacted] Chair of the National Plumbing Regulators Forum (NPRF), gave an oral presentation on the NPRF situational report to the BMF. The report outlined the progress towards national adoption of the Plumbing Code of Australia; the current status and ongoing plan for the WaterMark Certification Scheme; and the expected administration issues resulting from the implementation of the National Construction Code.

[redacted] presentation is provided at **Attachment A**, for Ministers' information.

It was noted that the NPRF does not have a recommendation on how to proceed. As an informal body that does not have an IGA they need direction on how to proceed.

Minister Singh noted that plumbing needs to have a voice and suggested that BMF needs to give direction to the ABCB and NPRF for leadership. She commented that she supported the Watermark Certification Scheme and the recommendations in the Allen Consulting Group report *Future governance and administration of the WaterMark Certification Scheme.*

Minister Singh then recommended that:

- The BMF endorse the continuation of the Watermark Certification Scheme (WMCS) to underpin plumbing standards in Australia.
- The BMF agree that the Water Efficiency Labelling Scheme (WELS) and the WMCS should be harmonised where possible.
- The BMF ask ABCB and NPRF to work together to develop an administrative model for WMCS and report back to BMF at its next meeting.

All States and Territories supported Tasmania's recommendations.

ACTION:

1. **ABCB and NPRF to form a working group to develop an administrative model for the WaterMark Certification Scheme and to report back at the next BMF meeting.**

Agenda Item 4: Implementation of the National Construction Code

Presentation on the National Partnership Agreement

[redacted] Branch Manager, Deregulation COAG Branch, Department of Finance and Deregulation gave a presentation to the BMF on the National Partnership Agreement to Deliver a Seamless Economy (NP).

[redacted] outlined:

- the history of the National Partnership Agreement ,
- the reform priorities and implementation plan milestones (including the National Construction Code NCC),
- the role of the Business Regulation and Competition Working Group (BRCWG),
- the role of the COAG Reform Council, and
- the process of the National Partnership payments to states and territories.
    - NP payments on a per capita basis
    - $100 million paid upfront (paid on 9 June 2009)
    - Up to $200 million reward payments in 2011-12
    - Up to $250 million reward payments in 2012-13
    - Reward payments contingent on meeting NP Implementation Plan reform key milestones.

It was noted that only COAG can agree to changes in the implementation milestones for reward payments. It was also noted that the NCC was not actually in the top 10 reform priorities that **must** be achieved for states and territories to be eligible for the reward payments.

[redacted] presentation is provided at **Attachment B**, for Ministers' information.

Following the presentation Minister Madden raised his concern about the 'deregulation language' used by COAG in the reform process. He noted that it was not tempered to the language of stakeholders and as such was a matter of sensitivity that needed to be managed by governments. Minister Madden recommended using more inclusive language that couched issues in a more positive light e.g. productivity gains rather than deregulation.

Implementation of the National Construction Code

Minister Carr sought a vote on whether BMF should re-confirm its support for sub-option 2, being the more substantial consolidation of building and plumbing codes, including identifying and addressing areas on inconsistency and overlap.

- **SA:** Minister Holloway noted that SA would require major administrative changes and given the current funding situation would actually prefer **sub-option 1**.
- **VIC:** Minister Madden noted that plumbing and building administrations were already combined in Victoria and supported re-confirmation of **sub-option 2**.
  He noted that the ABCB and BCA brand names were well known both domestically and internationally and that we should be mindful of the branding in the move to combine plumbing and building regulation.
- **TAS:** Minister Singh noted that Tasmania's administration was not integrated and preferred **sub-option 1**.
- **NSW:** Mr Hudson confirmed that NSW supports **sub-option 2**. In relation to the final NCC RIS, Mr Hudson also requested that confirmation of the costs for government be sought from the consultants of the NCC RIS.
- **QLD:** Minister Hinchliffe supported **sub-option 2.**
- **ACT:** [redacted] confirmed that the ACT supports **sub-option 2**.
- **NT:** [redacted] confirmed that the NT supports **sub-option 2**.
- **WA:** Parliamentary Secretary Morton strongly supported **sub-option 2**.

Minister Carr confirmed the majority vote was to **re-confirm BMF's support for sub-option 2**.

ACTION:

1. **Minister Carr, as Chair of the BMF, to write to COAG (via BRCWG) re-confirming BMF's support for a more integrated approach to implementing the NCC (i.e. sub-option 2) and providing the final NCC RIS for endorsement.**
2. **ABCB and NPRF to form a working group to progress NCC.**
3. **BMF Secretariat to ascertain from Consultants a reaffirmation of the costs to governments of implementation of the NCC.**

Agenda Item 5: ABCB Future Funding Options

Minister Carr sought members' advice on what funding option States and Territories were willing to support.

There was unanimous support for the lowest cost option.

It was confirmed that:

- the lowest cost option was Option 1 considered by the Board, i.e. Core funding and funding for the proposed National Construction Code.
- the total funding for the five year envelope will be $23 million ($11.5 million from the Commonwealth and $11.5 million from the States and Territories combined).
- members' agreement was still subject to their respective treasuries' agreement.
- States and Territories would be putting in the extra funding from 2010/11.

- the Commonwealth's increased funding would commence in 2011/12 and would be condensed into four years of payments.

Minister Madden noted that from Victoria's perspective, this agreement was contingent on all States and Territories, and the Commonwealth, increasing their funding.

BMF members also agreed to in-principle agreement for a free Code (BCA/NCC), but acknowledged that the current fiscal climate did not make this possible at this time. It was agreed that BMF should reconsider this issue in year four of the five year funding envelope i.e. FY 2013-14.

ACTION:

1. **BMF members agreed to a funding increase for the ABCB from year financial year 2010-11, financial year 2011-12 for the Commonwealth, subject to respective Treasury approval where required.**
   [The funding increase is outlined in the Table on page 4 of the '*Business Case for Sustainable Building Code Development and the Operation of the Australian Building Codes Board – October 2009*'.] (Note the Business Case was provided as Attachment F of the BMF meeting papers)
2. **The issue of funding a free Code to be re-considered by BMF in FY 2013-14.**

Agenda Item 6: Release of the Allen Consulting Report – Review of the Intergovernmental Agreement for the ABCB

There was unanimous agreement to the public release of the Allen Consulting Group report, *Review of the Intergovernmental Agreement for the ABCB.*

It was agreed that the report is to be placed on the ABCB website accompanied by a preamble detailing BMF's decisions against the report recommendations. No formal press announcement will be made regarding the report.

ACTION:

1. **The ABCB office to post the Allen Consulting Report – Review of the Intergovernmental Agreement for the ABCB - with an accompanying preamble on the ABCB website.**

Agenda Item 7: Energy Efficiency Regulations

Minister Carr asked Mr Barry Nielsen, Acting Chair of the ABCB, to provide an outline on results of the Regulation Impact Statement for the *Proposal to Revise the Energy Efficiency Requirements of the Building Code of Australia for Residential Buildings – Classes 1, 2, 4 and 10,* and the results of the Regulation Impact Statement for the *Proposal to Revise the Energy Efficiency Requirements of the Building Code of Australia for Commercial Buildings – Classes 3 and 5 to 9* (EE RISs). BMF members were also provided with a hand out containing five tables summarising the results of the EE RISs.

Mr Nielson concluded his outline by advising that 'the Australian Building Codes Board met to consider the EE RISs and decided by majority that, although the results were marginal, the RISs still essentially meet COAG requirements. Therefore the Board recommends that the energy

efficiency provisions are introduced into BCA2010'. The Board is cognisant that a decision needs to be taken by 18 December to meet ABCB's publication timetable for BCA2010.

General discussion followed Mr Nielsen's presentation. Although there was general support for the introduction of the energy efficiency provisions in BCA2010, it was agreed that the Commonwealth and the jurisdictions need time to consider the final draft of the EE RISs pending the finalisation of the EE RISs.

The Consultant for the EE RISs, [redacted], from the Centre for International Economics, was questioned whether the final EE RISs had taken into account major stakeholders' criticisms of the methodology etc. [redacted] assured the BMF that they had and were written into the sensitivity section of the EE RISs. The final EE RISs are currently with OBPR awaiting clearance. OBPR's role is to examine the RISs and advise whether they meet the Government's requirements and provide an adequate level of analysis, including cost-benefit and risk analysis of appropriate quality. OBPR should advise on which discount rate is appropriate to use in the final EE RISs.

Minister Carr recommended that BMF deal with this issue out-of-session once it has received the final EE RISs with OBPR clearance. He noted that this was expected to be before 18 December 2009. Minister Carr said that, once the BMF had made its decision, he would convey it to the Prime Minister.

ACTION:

1. **Minister Carr to write to BMF Members out-of-session once OBPR clearance of the final EE RISs has been received. (Prior to 18 December 2009)**
2. **Minister Carr will seek BMF Members' response as to whether**
    a. **they support including the energy efficiency provisions in BCA2010; or**
    b. **they would like to refer the final EE RISs back to COAG for advice on adoption.**
3. **Minister Carr to write to the Prime Minister advising him of BMF's final decision on this issue.**

Agenda Item 8: Bushfires and the Royal Commission

Minister Madden gave BMF members an update on the Bushfire Royal Commission, noting that the Royal Commission was very much dictating the timetable for Victoria.

Victoria has already adopted the national building standard for building in bushfire prone areas (ahead of National adoption). Every site that is going to be built on, including in metropolitan areas, must be assessed for its level of bushfire risk (Bushfire Attack Level).

Leading up to this year's bushfire season Victoria has also adopted an interim measure with regard to bushfire bunkers. Although not encouraging them they are requiring that they have a building permit and meet new performance requirements set out in the Building Regulations.

Victoria is also looking at bushfire protection for public buildings, including a Ministerial Direction for all government buildings.

All Ministers endorsed the work being undertaken by the ABCB in response to the Royal Commission and requests by the Victorian Government to develop a bushfire bunker standard. Mr Donaldson, General Manager of the ABCB, was thanked for his appearance before the

Commission and acknowledged for the work involved in responding to the Commission's requests.

There was majority agreement to in-principle adoption of the new bushfire bunker standard and revision of AS3959-2009, subject to compliance with relevant ABCB protocols.

ACTION:

1. **ABCB to continue with the development of a bushfire bunker standard for adoption by states and territories when available.**

Agenda Item 9.1: Standards Australia's New Business Model

Parliamentary Secretary Marles provided a brief update on the discussions with Standards Australia concerning their new business model.

Standards Australia has re-introduced the Standards Australia Driven pathway. Standards Australia revised business model is now outlined on the standards.org.au website under Bulletin #4 – 4 November 2009.

Agenda Item 9.2: Board Appointments

Minister Carr advised he had now received majority support to appoint [redacted] as an industry representative to the Board of the ABCB.

ACTION:

1. **Appoint Mr Fardoulys to the Board.**

Agenda Item 9.3: Building in Flood Prone Areas

Minister Hinchliffe outlined Queensland concern with buildings in flood prone areas. Minister Hinchliffe noted that flooding was Australia's costliest national disaster with QLD having previously had to declare 62% of the state a disaster area due to flooding.

The Minister recognised that planning plays a significant role in preventing building in flood zones but believes that contemporary building standards should also be provided.

Minister Carr sought the other BMF member's views. The majority of the states and territories agreed to the development of a standard for building in flood prone areas but many were mindful of the ABCB's current workload.

It was agreed that no further work be conducted on the handbook and the matter be referred back to ABCB as to whether a standard can be developed and in what time frame this can be done given other commitments in the ABCB's approved work plan.

ACTION:

1. **ABCB to cease work on the handbook and report back to BMF as to whether a standard for building in flood prone areas can be developed and in what time frame this could be achieved.**

Agenda Item 9.4: Disability Access

Parliamentary Secretary Marles provided a brief update on the development of *Disability (Access to Premises – Buildings) Standards.*

Parliamentary Secretary Marles indicated that the Commonwealth hoped to progress this matter as soon as possible with the aim to facilitate implementation of the Premises Standard by mid 2011 to align with the technical amendments going into BCA2011.

Parliamentary Secretary Marles noted that the Premises Standards, in addition to the technical requirements which will be mirrored in the BCA, also contain provisions that can only be given effect through State and Territory based administrative systems. Consequently the Commonwealth will be seeking the States' and Territories' cooperation in implementing the new Premises Standards and will engage jurisdictions regarding this matter once an official government announcement has been made on the Premises Standards.

Minister Madden commented that he was very supportive of the Commonwealth's approach on disability and advised the BMF that Victoria is currently looking at the accessibility of Class 1 and 2 buildings with the aim of making homes more accessible. He noted that this proposal would also have the outcome of reducing the amount of time people have to spend in hospital etc because their homes are not accessible, also noting the importance of accessibility for the ageing population.

It was recommended that Disability (Access to Premises – Buildings) Standards should be an agenda item for the next BMF meeting.

ACTION:

1. **Disability Access to be on the Agenda for the next BMF meeting.**

Meeting Closed.

Hon Stirling Hinchliffe MP
Member for Stafford

Queensland Government

Minister for Infrastructure and Planning

Our ref: 09/25966

30 SEP 2009

Senator the Honourable Kim Carr, MP
Minister for Innovation, Industry, Science and Research
PO Box 6022
Parliament House
CANBERRA ACT 2600

Dear ~~Minister~~ Kim

Thank you for your invitation to attend the next Building Minister's Forum (BMF) in Melbourne. I am pleased to advise that I will attend the meeting on Friday 13 November 2009. [redacted] and Mr Glen Brumby will be accompanying me at the meeting.

With regard to your request for my endorsement of the Annual Business Plan for the Australian Building Codes Board (ABCB), I broadly support the proposed Business Plan. However, at the BMF meeting of 21 May 2009, I asked that consideration be given to re-ordering the ABCB's work program for 2009/2010 to give a higher priority to the building in flood prone areas project.

At its July 2009 meeting, the ABCB's Building Codes Committee recommended that a non-mandatory handbook be developed to address flood hazards. This approach was not supported by the Queensland representative who advocated a regulatory approach to address this important matter. It is pleasing to note however, that the ABCB Board subsequently agreed at its September 2009 meeting that the proposed handbook will be written to be suitable for regulatory use if an individual State or Territory wishes to adopt it in a mandatory manner.

The Building Code of Australia contains provisions for a range of natural hazards, including bushfires, wind, termites and snow but contains no specific detailed requirements for floods.

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Overall, flooding is Australia's costliest form of natural disaster with annual losses estimated by the Australian Bureau of Meteorology to be over $400M. The ABCB has been undertaking a project on flooding for a number of years but progress has been slow.

Given the significant impact of a flood event on the community, this issue should be given greater recognition. It would be appreciated if this matter could be included on the agenda for discussion at the meeting.

If you require any further information, please contact Mr Glen Brumby, Executive Director, Building Codes Queensland Division, Department of Infrastructure and Planning, on [redacted] who will be pleased to assist.

Yours sincerely

[redacted]

Stirling Hinchliffe MP
Minister for Infrastructure and Planning

Extract BMF Record of Meeting, 21 May 2009

OTHER BUSINESS

Work Plan Priorities

Minister Hinchliffe asked whether the ABCB Work Plan could be re-ordered, noting that QLD considered priority should be given to *'Building in Flood Prone Areas'* over *'Quantification of Performance Requirements'* and *'JAS-ANZ Quality Assurance'*.

Minister Lawrie noted that *'Protection from Threats and Natural Disasters'* was still very topical and pertinent to the Northern Territory.

It was noted that, given the BMF's endorsement to increase the price of the BCA by $50, [redacted] as Chair of the ABCB, would go back to the Board to revise the priorities of the work plan.

Minister Carr noted that if jurisdictions had issues with the work plan it should be taken up directly with the Board.

The revised ABCB Work Plan will be circulated to BMF members for endorsement out-of-session.

Extract BMF Record of Meeting, 13 November 2009

AGENDA ITEM 9.3: Building in Flood Prone Areas

Minister Hinchliffe outlined Queensland concern with buildings in flood prone areas. Minister Hinchliffe noted that flooding was Australia's costliest national disaster with QLD having previously had to declare 62% of the state a disaster are due to flooding.

The Minister recognised that planning plays a significant role in preventing building in flood zones but believes that contemporary building standards should also be provided.

Minister Carr sought the other BMF's members' views. The majority of the states and territories agreed to the development of a standard for building in flood prone areas but many were mindful of the ABCB's current workload.

It was agreed that no further work be conducted on the handbook and the matter be referred back to ABCB as to whether a standard can be developed and in what time frame this can be done given other commitments in the ABCB's approved work plan.

Extract from ABCB meeting minutes for ABCB 2009-1, 5 March 2009 Sydney

AGENDA ITEM 4: REPORT AGAINST 2008-09 BUSINESS PLAN

The General Manager provided an overview of progress made against the 2008-09 Business Plan and advised that all projects were on target. The General Manager advised that the preliminary impact assessment (PIA) for the flood project was currently being developed and would be considered at the July Building Codes Committee meeting.

Extract from ABCB minutes from September 2009 meeting (ABCB 2009-3)

AGENDA ITEM 9: OUTCOMES OF BCC/ADMINS MEETINGS

Item 9.1

Members discussed the wording of each of the recommendations and although a number of changes were suggested, Members only agreed to insert into recommendation 2 the words (in bold) '…being reviewed by **Standards Australia** to ensure**…**'.

Members also agreed that tertiary and secondary references and beyond are to be reviewed by exception if specific problems are identified.

All recommendations were agreed by Members with the above changes.

Item 9.2

Members supported the recommendation to develop a handbook for building in flood prone areas, in a performance based format, which is suitable for use by jurisdictions. The success of the handbook will be monitored to determine whether regulation is required in future. Members also agreed that the development of the handbook be linked to the climate change project.

The NSW representative suggested that a Planning Officials' Group and National Flood Risk Advisory Group representative by invited to participate in the development of the handbook.

Extract from ABCB meeting 2010-2, 30 June Melbourne 2010

AGENDA ITEM 9: FLOOD PRONE AREAS

The deputy General Manager introduced the item and suggested that members support the recommendation for the BMF to defer the matter of flood prone standards and handbooks to the Board due to it being an operational matter.

The QLD member acknowledged that although it is not a property protection issue we need to be mindful that people are not displaced from buildings for too long.

Members noted the scoping paper for a flood Standards which will be considered at the 1 July 2010 BMF meeting.

Extract ABCB 2011-1, 14 April 2011

AGENDA ITEM 8: QUEENSLAND FLOOD ENQUIRY

The General Manager commenced discussion on the Queensland Flood Enquiry and sought advice on what needs to be included in a submission to the Commission of Inquiry. The Qld representative stated that the Board should communicate its willingness to respond to the needs of the community. The ACT representative cautioned the Board on including planning related matters in its submission.

The NSW representative raised concerns about the Board's plan to release a flood standard before the outcomes of the inquiry are known. The General Manager responded stating that the Board has been asked to undertake this work by both the Prime Minister and Minister Carr.

Industry representative [redacted] suggested that consideration of effluents mixing with flood waters be included as part of item 8 of the revised flood project work program. This was agreed by members.

Extract ABCB 2011-2 Darwin 30 June 2011

AGENDA ITEM 3: GENERAL MANAGER'S REPORT

The General Manager brought the following matters to the attention of members:

Flood Standard and Handbook

- Prior to this Board meeting, and following earlier consideration of these issues by both BMF and the Board, the NSW member requested clarification of the Board's intent regarding the development of a flood standard and non-regulatory handbook. The Chairman responded that Board members had now given further consideration to the handling of these matters. He confirmed that Board members supported the development of both a flood standard and a handbook for early Board consideration.

Buildings in Flood Prone areas Project

Ref No.	Document Reference	Action	Outcome
1	May 2007 Board Paper ABCB 2007-2 Agenda Item 8	The office submitted an information paper resulting from the outcomes of COAG's April 2007 meeting concerning ABCB's future involvement under the national Climate Change Adaptation Framework, and the potential for work on likely effects of climate change on physical infrastructure. ABCB involved on the COAG-endorsed Technical Risk Assessment Advisory Committee to provide input on discussion papers and handbooks relating to land slides, flooding, bushfires and earthquakes etc.	An overview of the paper was provided to Board members for information.
2	October 2007 BCC 2007-3 Agenda Item 8	BCC considered consultation paper options.	BCC agreed that there was potential overlap between planning and building regulations and that mapping of floods should be handled at Local or State Government level and recommended technical solution for building in flood prone areas should then be provided through the BCA. Office to further develop options and input material based on BCC outcomes. BCC members agreed that issue be put through the Joint Planning and Building Working Group's NIM to determine potential roles of building and planning.
3	2007-08 Business Plan Project Update	Recommendation to Board in March 2008 to place issues through the JBPWG National Implementation Model to determine potential roles of building and planning.	Discussion paper and RIS to be developed by March 2008
4	July 2008 Board Paper 2008-2 Agenda Item 4.2	Update on project provided to Board. Advised that office view is that the adequacy of building in designated flood prone areas is predominantly a building matter and that planning have a significant role in setting importance level of buildings, designated flood areas and levels.	Project to be considered by the Building Codes Committee (BCC) in October 2008. If agreed by BCC, further work should be undertaken on proposed measures prior to planning officials designating flood prone areas. Further consideration to be given to the impact and threat of flash flooding. Write to the Planning Officials Group to seek information on flood zone mapping.
5	2008-09	BCC to consider consultation paper at October meeting.	BCC recommended use of the National Implementation Model to

	Business Plan		determine the potential roles of building and planning. Depending on outcome, the matter may need to be discussed by the Planning Officials Group (POG). Develop PIA with options after delineation process. NIM assessment completed in March 2008.Draft PIA being developed by Office.
6	November 2008 ABCB 2008-3 Agenda Item 6	Board Paper on COAG developments and 2008-09 Business Plan Pressures contained a report on the 'possible impacts of climate change on the BCA'. The report found there was no urgent need to amend the BCA for further climate change impacts however there were still opportunities to reduce the vulnerability of buildings when subjected to climate related hazards. Possible adaptation options to improve resilience of buildings included the avoidance of location in flood prone areas or use water resistant materials and locate vulnerable services above flood levels.	Consideration given to writing to the Minister for Innovation, Industry, Science and Research foreshadowing the possible need to review the ABCB's 2008-09 Work Program, in consultation with the Building Minister's Forum, to accommodate work from COAG.
7	BCC 2009-2	BCC considered 4 options within the Preliminary Impact Assessment. These were: 1. Amend structural provisions contained in both volumes of the BCA to include floodwater action. 2. Amend structural provisions and include floodwater action return periods in the Design Events for Safety Tables 3. Produce an ABCB Handbook 4. Maintain status quo.	The BCC agreed to: Report to the Board that all members except QLD supported the development of a handbook in the first instance and that the success of the handbook be monitored to determine whether regulation is needed in future. If a handbook was agreed by the Board, convene a working group to develop a brief for a Handbook on Building in Flood Prone Areas. If a handbook was agreed by the Board, write to the Planning Officials Group and the National Flood Risk Advisory Group advising that a Handbook will be develop by the ABCB on Building in Flood Prone Areas.
8	September 2009 ABCB 2009-3 Agenda Item 9.2	The office submitted a Board paper recommending a handbook be developed and that the success of the handbook be monitored to determine whether regulation is needed in the future.	Board members supported the recommendation to develop a handbook for building in flood prone areas, in a performance based format, which is suitable for use by jurisdictions. Members also agreed that the development of the handbook be linked to the climate change project. The NSW representative suggested that a Planning Officials' Group and National Flood Risk Advisory Group representative by invited to participate in the development of the handbook
9	November	The QLD Minister raised concerns at the meeting about buildings in	BMF requested that the ABCB cease work on the handbook and report

	2009 BMF Meeting	flood prone areas. Minister Carr sought views from other BMF members with the majority of states and territories agreeing to the development of a standard for building in flood prone areas but were mindful of other commitments in the ABCB's work plan.	back to BMF as to whether a standard for building in flood prone areas can be developed and in what time frame
10	June 2010 ABCB 2010-2 Agenda Item 9	Board paper submitted concluding that a standard for building in flood prone areas can be developed. Scoping paper was submitted recommending the preparation of a preliminary analysis of the benefits of developing a standard or a handbook or both and to provide results of the preliminary analysis to the next BMF meeting.	The deputy General Manager introduced the item and suggested that members support the recommendation for the BMF to defer the matter of flood prone standards and handbooks to the Board due to it being an operational matter. Board members noted the scoping paper for a flood Standards which will be considered at the 1 July 2010 BMF meeting.
11	July 2010 BMF Meeting Agenda Item 9	A Scoping paper for a Flood Standard to be referenced in the BCA was submitted to BMF with the recommendations to: . a preliminary analysis of the benefits of developing a standard or a handbook or both . the results of the analysis to be reported back to the next BMF meeting.	The BMF noted the scoping study and agreed to the Board resolving this matter under its usual assessment processes, consistent with COAG guidelines.
12	2010-11 Business Plan Project	Draft standard and handbook for Board consideration early 2012	

Building Codes Committee Meeting 2007-3

Canberra

16 & 17 October 2007

Australian Building Codes Board

BUILDING CODES COMMITTEE
MEETING NO. 2007-3

AGENDA

Date:	Tuesday 16 October 2007	Wednesday 17 October 2007
Time:	9.00am - 5.00pm	9.00am - 5.00pm
Venue:	K Block, Canberra Institute of Technology Constitution Avenue, Canberra City	

1	Opening Remarks
2	Confirmation of Record of BCC 2007-2
3	Report on Board meeting
4	Update of BCA referenced documents
5	BCA 2008 – consideration of public comments
6	Uniform Structural Reliability in the BCA
7	Fire Retardant Coatings
8	Building in Flood Prone Areas
9	Salinity
10	Acid Sulphate Soils
11	Class 1b and Class 3 Buildings – Classification and Use
12	Class 2 and 3 Building – Classification and Use
13	Quantification of Performance
14	Indoor Air Quality
15	2008 BCA Information Seminars
16	BCC Work Program
17	Project update
18	Other business
19	Date & location of next meeting

Agenda Item 1 OPENING REMARKS

Recommendation

It is recommended that the BCC accept the draft agenda for BCC 2007-3.

Background

A list of anticipated attendance for BCC 2007-3 is attached.

A copy of the BCC Terms of Reference is attached.

Attending

[redacted]	ABCB Office – Chair
	ABCB Office
	ABCB Office
	Property Council of Australia
	Building Research New Zealand
	CSIRO
	Royal Australian Institute of Architects
	NSW Administration
	Australasian Fire Authorities Council
	Master Builders Australia
	QLD Administration
	NT Administration
	ABCB Office
	SA Administration
	Building Designers Association of Australia
	Housing Industry Association
	Australian Local Government Association
	Victorian Administration
	Standards Australia
	Association of Consulting Engineers Australia
	Building Products Innovation Council
	Australian Institute of Building
	Victorian Administration
	ABCB Office
	Engineers Australia
	Tasmanian Administration
	Department of Building and Housing New Zealand
	Australian Institute of Building Surveyors
	Green Building Council of Australia
	WA Administration
	ACT Administration (deputising for Dave Parsons)

Apologies

[redacted]	ACT Administration
	Australian Institute of Building Surveyors

Building Codes Committee
Terms of Reference

January 2007

1. Introduction

The role of the Building Codes Committee (BCC), consistent with the Inter-government Agreement (Appendix A), is to provide advice on technical matters to the Australian Building Codes Board (the Board).

The Inter-government Agreement (IGA) provides for increased national consistency, strengthened assessment processes and greater accountability to Building Ministers. The Building Ministers' Forum determined that the Board has an important gatekeeper role to play in building regulation reform with a stronger focus on developing model regulation as a last resort. Their report to COAG in 2006 identified a number of initiatives to enhance impact assessment procedures and consultation processes.

The BCC is a valuable national forum for regulatory authorities and industry to consider technical matters relevant to building regulation reform and plays an active role in assisting the Board in meeting its obligations under COAG and the IGA.

The responsibilities of the BCC are to-

- advise and make recommendations, through the Chair, to the Board on-
  - technical matters relevant to the BCA;
  - strategic policy relevant to building control matters;
  - a list of categorised and prioritised proposals* to assist in the development of the ABCB Annual Business Plan; and
- provide advice and guidance to the ABCB Office-
  - at key stages of technical projects; and
  - on the overall direction and development process for technical projects through the review and endorsement of Project Management Briefs.

* Recommendations are generally developed through the National Technical Summit using the Proposal for Change process. Further information on this process is available on the ABCB website www.abcb.gov.au

2. Establishment of the BCC

Section 11 of the IGA states:

"There shall be a Building Codes Committee to provide technical advice to the Board. The composition of the Committee shall be determined by the Board.

The operation of the Committee shall be determined by the Board.

The Committee cannot make decisions that vary the BCA. Such matters, if considered by the Committee, must be referred to the Board which will make the ultimate decision."

3. Composition of the BCC

The composition of the BCC shall be-

- the General Manager of the ABCB Office who shall be the Chair
- a representative of each of the Australian, State and Territory Governments
- a representative of Local Government
- a representative of the following bodies:
  - Association of Consulting Engineers Australia (ACEA)
  - Australasian Fire Authorities Council (AFAC)
  - Australian Institute of Building (AIB)
  - Australian Institute of Building Surveyors (AIBS)
  - Building Designers Association (BDA)
  - Building Products Innovation Council (BPIC)
  - Commonwealth Scientific and Industrial Research Organisation[**] (CSIRO)
  - Engineers Australia (EA)
  - Green Building Council of Australia (GBCA)
  - Housing Industry Association (HIA)
  - Master Builders Australia (MBA)
  - Property Council of Australia (PCA)
  - Royal Australian Institute of Architects (RAIA)
  - Standards Australia[**]
- a representative of the New Zealand Department of Building and Housing (observer)
- a representative of Building Research New Zealand Inc (observer)

4. Operation of the BCC

Process

The BCC is to conduct its deliberations informally. Recommendations for consideration by the Board will be by consensus. In making recommendations to the Board, the Chair will have regard to any dissenting views if consensus cannot be reached.

[**] These organisations are requested to provide a representative from the relevant non-commercial section of their organisation.

Meetings

The BCC will meet at least twice in each financial year. The times, dates and location of meetings will be determined by the Chair in consultation with the BCC, having regard to the Board's meeting schedule and other requirements.

Representation

It is expected that members of the BCC will have the authority from the organisation they represent to present the views of their organisation in discussions on matters being considered by the BCC and that they will strive to reach consensus. It is recognised that members are representatives and will need the opportunity to consult with their organisations as appropriate.

Continued membership of the BCC requires active ongoing participation.

Deputies

A member of the BCC may appoint a deputy following consultation with the Chair. Any deputy appointed should have the same authority from the organisation they represent as the member.

Travel and Meeting Costs

Travel and accommodation costs of BCC members are the responsibility of the organisation they represent.

BCC Support

The ABCB Office will provide secretariat support for the BCC.

Establishment of sub-committees/working groups

Sub-committees and/or working groups may be established by the Chair, in consultation with the BCC.

Conflict of interest

Members of the BCC must declare any interest that may be perceived to be a conflict of interest prior to participation in any discussions on a matter. The Chair, following consultation with the BCC, will determine whether it is appropriate for that member to participate in the consideration of the relevant matter.

Use and disclosure of information

All documentation is Committee-in-Confidence and discretion is to be used in any disclosure, use or distribution of information obtained through participation in the BCC. This does not preclude members from consulting with their organisations and relevant stakeholders as appropriate.

Agenda Item 2 CONFIRMATION OF RECORD OF BCC 2007-2

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the meeting:

- Confirm the Summary of Record of Discussion of Meeting 2007-2 of the BCC held in Perth on 25 July 2007.
- Review the Actions Arising list.

Background

Comment was received on the draft record and it has been revised. Changes are shown in the copy of the Summary Record of Discussion of BCC 2007-2 at Attachment A. The current status of the Actions Arising is reported at Attachment B.

AUSTRALIAN BUILDING CODES BOARD

BUILDING CODES COMMITTEE

MEETING 2007-2

25 JULY 2007

PERTH

SUMMARY RECORD OF DISCUSSIONS

BUILDING CODES COMMITTEE
MEETING NO. 2007-2

AGENDA

Date: **Wednesday 25 July 2007**
Time: **8.30am - 5.00pm**
Venue: **Fraser's & Kings Park Function Centre**
Fraser Avenue, Kings Park
West Perth

1	Opening Remarks
2	Confirmation of Record of BCC 2007-1
3	Report on Board meeting
4	Joint Building/Planning Working Group update
5	BCC Work Program
6	Project Management Briefs for new projects
7	Uniform structural reliability in the BCA
8	Strategic Review of the BCA against COAG principles
9	Rise in storey interpretation
10	ACP for earthquakes
11	Water Efficiency Scoping Study
12	Materials Scoping Study
13	Protocol for Structural engineering software
14	IRCC meeting update
15	Hot water systems
16	Update of BCA referenced documents
17	Project update
18	Other business
19	Date & location of next meeting

Attending

[redacted]	ABCB Office - Chair
	ABCB Office
	Building Research New Zealand
	QLD Administration
	CSIRO
	Royal Australian Institute of Architects
	ABCB Office
	NSW Administration
	Australian Fire Authorities Council
	Standards Australia (observer)
	NT Administration
	ABCB Office
	Master Builders Australia (deputising for Neil Evans)
	SA Administration
	ABCB Office
	Building Designers Association of Australia
	Property Council of Australia (deputising for Trevor Beardsmore)
	Housing Industry Association
	Standards Australia
	Association of Consulting Engineers Australia
	ACT Administration (deputising for Dave Parsons)
	Building Products Innovation Council
	Australian Institute of Building Surveyors
	Australian Institute of Building
	Victorian Administration
	ABCB Office
	Tasmanian Administration
	Australian Institute of Building
	WA Administration

Apologies

[redacted]	ABCB Office
	Property Council of Australia
	Master Builders Australia
	Australian Government
	ALGA
	ACT Administration
	Department of Building and Housing New Zealand

AGENDA ITEM 1 Opening Remarks

The Chair, [redacted] welcomed members and deputies [redacted], deputising for [redacted] deputising for [redacted]. He also welcomed [redacted] from Standards Australia.

Ivan advised that this was the last BCC meeting for [redacted] who had been a member of the BCC and its predecessors for some 25 years. The meeting thanked [redacted] for his extensive contribution to the committees over the years.

The meeting was advised of the passing of [redacted] who was well known and respected by many on the BCC through his many years with the NT Administration.

AGENDA ITEM 2 Confirmation of Record of BCC 2007-1

Members agreed that the minutes were an accurate record of the meeting.

Progress against actions arising from the meeting was reported with all actions completed or in train. The ABCB Office undertook to distribute information on the response from the Dept of Health & Ageing in regard to Aged care certification problems.

It was agreed that, in future, the current status of actions arising would be reported.

AGENDA ITEM 3 Report on Board meeting

Ivan Donaldson gave an update on outcomes from ABCB 2007-2. He advised that discussions at the meeting included:

- Variation Reduction Strategy – No variations by 2011. All States/Territories will list other relevant legislation in the BCA from BCA 2008
- Building Ministers Forum - briefing will be sent to the Federal Minister next week and circulated to S/T Ministers subsequently
- ABCB profile has been published
- Accreditation framework – potential to address through the Department of Industry's building design professionals action agenda
- Hot water systems (see agenda item 15)
- Part J – agreement that extra work is to be done on awareness.

AGENDA ITEM 4 Joint Building/Planning Working Group update

[redacted] gave an update on the outcomes from the Joint Building/Planning Working Group (JWG) and advised that three main tasks have been determined:

- Development of a national implementation model to help delineate between planning and building and clarify where specific issues should reside.
- Empirical study to quantify the costs of various interventions at State & Local level.
- Suitability of Sustainability tools.

[redacted] noted that the JWG is not a mechanism for determining policy or stringency setting, rather that it is concerned with proliferation and duplication of regulatory intervention.

In response to a request from the BCC, [redacted] advised that the outcomes of the work currently being undertaken by the JWG will be considered by the Board at ABCB 2007-3 and by the Local Government and Planning Ministers Council in November.

AGENDA ITEM 5 BCC Work Program

[redacted] advised members that this initiative had been identified at ABCB 2007-2 and is designed to complement the Board's work program. The BCC work program identifies matters that BCC will deal with during the course of the year and timing for BCC input. This will assist members in managing their work load and will also assist the ABCB Office in coordinating the work flow more evenly over the year.

The committee supported the concept of a work program and agreed that it would assist them in identifying and managing work loads. The meeting noted that the 'Fire Safety (Sprinklers) in Residential Aged Care Buildings' project was to be included on the work program.

Members requested:

- that the timeline identify whether the matter under consideration was intended for the next BCA amendment or beyond (to assist in prioritisation) and the start and finish date for BCC review and comment;
- whether the Class 5 sprinklered buildings project was retained on the Board's work program;
- that the research activities and referenced document sections be expanded to include detail of specific work. In respect of Australian Standards, [redacted] undertook to provide the ABCB Office with information on current projects for inclusion on the BCC work program.

It was noted that this is a document that will be regularly updated and circulated to members.

AGENDA ITEM 6 Project Management Briefs for new projects

Project Management Briefs (PMBs) for new projects on the draft ABCB 2007/08 Work Program, based on the PFC and the scope agreed to at BCC 2006-2, were considered by BCC.

Penetrations in Class 9c plasterboard ceilings
The committee endorsed the PMB with the following amendments:

- Scope – amend wording to "……engineering analysis *and determining* whether….."
- Project Activities – add "*Clarify and/or define what constitutes a tightly fitting penetration.*"
- Project specific stakeholders – add " *Aged & Community Services organisations*"

Impact of Climate Change on Cyclonic regions of Australia
The committee endorsed the PMB with the following amendments:

- Scope – delete words 'further inland' from end of sentence.
- Assumptions/Constraints – add *AS 4055*
- Project specific stakeholders – add " *Bureau of Meteorology*"

Class 6 and Class 9b Classification
The committee endorsed the PMB.

Sanitary facilities
The committee endorsed the PMB with the following amendments:

- Project specific stakeholders – add "*Education agencies, Australian Hotels Association, Shopping Centre Council, Airports management*"

AGENDA ITEM 7 Uniform structural reliability in the BCA

[redacted] advised members that there is inconsistency in the levels of structural reliability in BCA referenced documents. ACSE (structural branch of ACEA) has commissioned a report on the matter. Rod undertook to provide a copy of the report to members. The meeting noted that any proposal to address this matter would need to consider the impact on referenced documents and would necessarily be implemented over a period of time as referenced documents are revised.

The meeting agreed that this is a matter of policy and performance setting and therefore is more appropriately contained within the BCA.

It was agreed that BCC members would consider the report and the matter would be placed on the agenda for BCC 2007-3.

AGENDA ITEM 8 Strategic Review of the BCA against COAG principles

[redacted] gave an overview of the submissions and findings of the project and noted the significant contribution of several members. Members agreed with the report with the following comments:

- Where a response has been classified as "*3. Matters that are being dealt with (or could be addressed) by other active ABCB projects*." clearly delineate the part of the response that is currently covered by the active project.
- The inclusion of Maintenance in the BCA should be categorised as strategic for particular Board consideration.

ABCB Office undertook to distribute the final documentation to BCC prior to submission to the Board.

AGENDA ITEM 9 Rise in storeys interpretation

Members endorsed the interpretation and the wording proposed for the Guide with minor changes. [redacted] suggested that clarification in the BCA provision was necessary and undertook to provide suggested wording.

Members agreed that the changes should be included in BCA 2008.

AGENDA ITEM 10 ACP for earthquakes

Members endorsed the removal of the ACP due to the inconsistency that will exist if the 2007 version of AS 1170.4 is referenced in BCA 2008. Members noted that the ACP was not commonly used and that under the 2007 edition of AS1170.4 there is no requirement in most cases for specific design for earthquake in Class 1 buildings.

The ABCB Office undertook to review the current Performance Requirement to determine whether any changes are necessary.

AGENDA ITEM 11 Water Efficiency Scoping Study

Members discussed the scoping study commissioned by the Department of the Environment and Water Resources.

Prior to any work being undertaken on this matter, BCC agreed that it recommend to the Board that a mandate would need to be obtained from Ministers and that this could be sought by the ABCB Chairman writing to the Building Ministers Forum to express the view that:

- a national approach is desirable;
- the BCA is only part of the solution; and
- any work in this area would have to be in accordance with the COAG principles.

BCC agreed that Attachment B should not form part of the advice to the Board, acknowledging that many other authorities/areas are involved in this matter and wider consultation would be desirable.

ABCB Office undertook to circulate the draft Board paper to BCC for comment prior to submission to the Board.

AGENDA ITEM 12 Materials Scoping Study

It was agreed that this matter is very similar in nature to the Water Efficiency Scoping Study and that the same approach should be taken.

AGENDA ITEM 13 Protocol for Structural engineering software

The meeting discussed the protocol and agreed that the document should be circulated more widely for consultation. This should include background information that makes the application of the Protocol clear and seek views on specific questions:

- Should the document be advisory or mandatory?
- Should the document be extended to include Alternative Solutions as well as Deemed to Satisfy Solutions?

Members with specific comment on the content were requested to submit it to ABCB Office prior to wider consultation being undertaken.

AGENDA ITEM 14 IRCC meeting update

[redacted] gave a presentation on the recent IRCC meeting held in Beijing. A copy of the presentation will be circulated to members.

AGENDA ITEM 15 Hot water systems

[redacted] provided an overview of the project to members and advised that the primary purpose was to determine if intervention is necessary. [redacted] advised members that the New Zealand Department of Building and Housing currently has a discussion paper and RIS on the subject out for comment.

State and Territory Administrations were requested to provide any information that they may have available such as costs or research to the ABCB Office.

AGENDA ITEM 16 Update of BCA referenced documents

Members considered referencing the 2007 editions of AS 1926.1 & .2 relating to Swimming Pool Safety. [redacted] alerted members to the representations made to ABCB by the Royal Life Saving Society seeking adoption of the standards.

The meeting discussed the normative appendix contained within AS 1926.2 and the difficulties created by the note contained within the appendix. It was also noted that there were several errors contained within the documents.

The meeting was advised of the debate within the Standards committee and the extreme difficulty experienced in reaching agreement on the standard. [redacted] advised that the varying legislation in State and Territory Administrations was a contributor to the conflict. He further advised that there is no significant difference in stringency between the new and the old standards and that it is the consensus view of the committee is that there is an improvement in life safety for children at no cost as a result of clarification leading to proper application.

ABCB Office undertook to arrange a meeting of the key stakeholders from the Standards committee and BCC to work through the issues.

ABCB Office will contact the Royal Life Saving Society to advise them of the current position and planned actions.

BCC was advised that the transition period for Amendment 1 to AS 4859 (given effect by the note in Specification A1.3) is to be removed at BCA 2009. It was noted that transitional arrangements need to be very clear to ensure manufacturers are made aware of the proposal and make appropriate arrangements to comply with the requirements within the transitional period.

AGENDA ITEM 17 Project update

The meeting noted the current status of ABCB projects.

In respect of CodeMark, [redacted] raised the need to monitor Certification Bodies' reluctance to issue Certificates of Conformity against the BCA Performance Requirements.

AGENDA ITEM 18 Other business

Flooding in basement carparks

[redacted] raised the issue of flooding in basement carparks and queried if the BCA adequately addresses the matter. The meeting agreed that the Victorian Administration should consider preparation of a PFC for the consideration of the next Summit.

Smoke Cloaks

[redacted] asked for an update on the use of Smoke Cloaking security systems. [redacted] advised that no further agreement had been reached at a national level within AFAC and that currently, each member agency is responsible for preparing its own guidance and providing relevant information to its directorates. In effect, the guidance being supplied encourages fire officers not to enter the building when these devices have been activated. [redacted] advised that a working party had been established in NSW to consider this matter and offered to report back to BCC on progress.

Sarking

Peter Nassau advised that the Master Plumbers are concerned about the BCA not being clear about the use of sarking under metal deck roofs to deal with condensation. Further, it was considered that AS2050 is inconsistent with the BCA on when sarking is required. It was agreed that [redacted] would advise Master Plumbers of the PFC process and suggest that they consider preparation of a PFC on the matter. [redacted] advised that in New Zealand, corrosion of metal roofing products associated with some types of sarking has been identified and consideration is being given to alternatives to the current requirements in AS 2050.

Balcony Collapse

[redacted] raised for the information of members a recent case of a multi-storey building less than 10 years old with collapsing balconies. He advised that the builder had used particleboard and there is currently no requirement to waterproof it within the BCA. It was considered that it was likely to be a compliance rather than BCA issue.

BCC draft of BCA 2008

At BCC 2006-3, it was agreed that a BCC draft of BCA 2008 be produced for review by the BCC in conjunction with consideration of public comment. BCC confirmed that the BCC draft should be drafted to reflect the ABCB Office view on comments received and the consolidated comments document should state whether the suggested change has been included in the BCC draft. It was also agreed that a BCC draft of the Guide would not be produced.

AGENDA ITEM 19 Date & location of next meeting

The meeting noted that BCC 2007-3 is scheduled for Tuesday 16 and Wednesday 17 October in Canberra.

ACTIONS ARISING

Agenda Item	Action Responsibility	
2	Circulate information on the response from the Dept of Health & Ageing in regard to Aged care certification problems to the BCC.	ABCB Office
	Include status against actions arising for future meetings.	ABCB Office
5	Provide information on current projects for inclusion on the BCC work program.	Standards Australia
	Amend draft BCC workplan and distribute to BCC	ABCB Office
6	Amend PMBs as agreed by BCC.	ABCB Office
7	Distribute [redacted] report on structural reliability to BCC and the matter to be listed for consideration at BCC 2007-3.	ACEA
8	Distribute the final report on the Strategic Review of the BCA against COAG principles to BCC prior to submission to the Board.	ABCB Office
9	Provide proposed changes to BCA wording for inclusion in the BCC draft of BCA 2008.	NSW Admin
	Include changes to Guide in BCA 2008.	ABCB Office
10	Remove the ACP for earthquakes from the BCA in BCA 2008	ABCB Office
	Review current Performance Requirement to determine whether any changes are necessary.	ABCB Office
11/12	Recommend to the Board that the ABCB Chair write to Building Ministers Forum to seek engagement on an appropriate national approach.	ABCB Office
	Circulate draft Board papers to BCC for comment.	ABCB Office
13	Circulate the handbook for comment and seek views on the questions posed.	ABCB Office
	Submit specific comment on the content of the draft handbook. (Note: Please provide comment by 31 August)	BCC members
14	Circulate IRCC presentation.	ABCB Office
15	Provide any information available on HWS such as costs or research to the ABCB Office.	S/T Admins
16	Arrange a meeting of the key stakeholders from the Standards committee and BCC to work through the issues.	ABCB Office
	Contact the Royal Life Saving Society to advise them of the current position and planned actions.	ABCB Office
17	Monitor reluctance of CBs to issue CodeMark certificates against Performance Requirements.	ABCB Office
18	Consider preparation of a PFC on flooding in basement carparks	Vic Admin
	Advise BCC on progress of NSW working party on smoke cloaking security devices.	NSW Admin
	Advise Master Plumbers of the PFC process and suggest that they consider preparation of a PFC on sarking under metal roofs.	Vic Admin

ACTIONS ARISING

Agenda Item	Action Responsibility		Status
2	Circulate information on the response from the Dept of Health & Ageing in regard to Aged care certification problems to the BCC.	ABCB	In train
	Include status against actions arising for future meetings.	ABCB	Complete
5	Provide information on current projects for inclusion on the BCC work program.	Standards Australia	Complete
	Amend draft BCC workplan and distribute to BCC	ABCB	In papers
6	Amend PMBs as agreed by BCC.	ABCB	Complete
7	Distribute [redacted] report on structural reliability to BCC and the matter to be listed for consideration at BCC 2007-3.	ACEA	Complete
8	Distribute the final report on the Strategic Review of the BCA against COAG principles to BCC prior to submission to the Board.	ABCB	Complete
9	Provide proposed changes to BCA wording for inclusion in the BCC draft of BCA 2008.	NSW Admin	
	Include changes to Guide in BCA 2008.	ABCB	In train
10	Remove the ACP for earthquakes from the BCA in BCA 2008	ABCB	Complete
	Review current Performance Requirement to determine whether any changes are necessary.	ABCB	Complete
11/12	Recommend to the Board that the ABCB Chair write to Building Ministers Forum to seek engagement on an appropriate national approach.	ABCB	Complete (ABCB 2007-3)
	Circulate draft Board papers to BCC for comment.	ABCB	Complete
13	Circulate the handbook for comment and seek views on the questions posed.	ABCB	In train
	Submit specific comment on the content of the draft handbook. (Note: Please provide comment by 31 August)	BCC members	
14	Circulate IRCC presentation.	ABCB	Complete
15	Provide any information available on HWS such as costs or research to the ABCB Office.	S/T Admins	
16	Arrange a meeting of the key stakeholders from the Standards committee and BCC to work through the issues.	ABCB	Complete

	Contact the Royal Life Saving Society to advise them of the current position and planned actions.	ABCB	Complete
17	Monitor reluctance of CBs to issue CodeMark certificates against Performance Requirements.	ABCB	On-going
18	Consider preparation of a PFC on flooding in basement carparks	Vic Admin	
	Advise BCC on progress of NSW working party on smoke cloaking security devices.	NSW Admin	
	Advise Master Plumbers of the PFC process and suggest that they consider preparation of a PFC on sarking under metal roofs.	Vic Admin	

Agenda Item 3 REPORT ON BOARD MEETING

Contact Officer: Trent Bourne – ABCB Office

Recommendation

It is recommended that the BCC note the outcomes from the Board meeting held since BCC 2007-2.

Background

The Board met on the Gold Coast on 27 September 2007 (ABCB 2007-3). An oral presentation on the outcomes from this meeting will be provided.

Agenda Item 4 UPDATE OF BCA REFERENCED DOCUMENTS

Contact Officer: [redacted] – ABCB Office

Recommendation

1. AS/NZS 1170.1
It is recommended that Amendment No.1 to AS/NZS 1170.1 be referenced in both volumes of the BCA.

2. AS 1170.4
It is recommended that:

- AS 1170 Part 4 2007 be referenced in both volumes of the BCA.
- Consequential to the reference of AS 1170 Part 4 2007, change the annual probabilities of exceedance of the earthquake design events in Table B1.2b and Table 3.11.3b of the BCA.
- The reference to the superseded AS 1170 Part 4 1993 be retained in the BCA for 12 months for transition and be removed at BCA 2009.

3. AS 1288
It is recommended that Amendment No. 1 to AS 1288 be referenced in both volumes of the BCA.

4. AS/NZS 1289 Method 6.3.3
It is recommended that Amendment No. 1 to AS/NZS 1289 Method 6.3.3 be referenced in Volume Two of the BCA.

5. AS 1860.2
It is recommended that AS 1860.2 2006 be referenced in Volume One of the BCA.

6. AS 1926.3
It is recommended that AS 1926.3 be referenced in both volumes of the BCA.

7. AS 2419.1
It is recommended that Amendment No. 1 to AS 2419.1 be referenced in Volume One of the BCA.

8. AS/NZS 3500.3
It is recommended that Amendment No. 1 to AS/NZS 3500.3 be referenced in both volumes of the BCA.

9. AS/NZS 3500.5
It is recommended that Amendment No. 4 to AS/NZS 3500.5 be referenced in Volume Two of the BCA.

10. AS 3700
It is recommended that Amendment No. 3 to AS 3700 be referenced in both volumes of the BCA.

11. AS 4055

It is recommended that Amendment No. 1 to AS 4055 2006 be referenced in Volume Two of BCA 2008.

12. EBAA document for earth building 2007 edition

It is recommended that-

- Building with Earth Bricks and Rammed Earth in Australia, Second edition 2007 be referenced in both volumes of the BCA
- CSIRO Bulletin 5 be removed from both volumes of the BCA.

Background

Reports supporting the above recommendations are contained in the attachments to this agenda item.

Decision

AS/NZS 1170.1
Structural design actions
Part 1 Permanent, imposed and other actions

Recommendation

It is recommended that Amendment No.1 to AS/NZS 1170.1 be referenced in both volumes of the BCA.

Background

Standards Committee: BD-006

ABCB representative: [redacted]

Current version: 2002

Current BCA reference: **BCA Volume One:**
B1.2

BCA Volume Two:
Part 3.11.3

BCC consultation: As this is a minor correction amendment prior consultation was not undertaken.

Summary of proposal

Amendment No. 1 is a correction amendment to the preface of the standard. It corrects the title and description of Parts 3 & 4 and includes the NZS Part 5 in the series of standards. These three standards were completed after the 2002 publication of Part1. A copy of the complete amendment is attached.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for revision/amendment	Suitable	From a BCA perspective, the amendment is an inconsequential matter and will have no effect on the purpose of the BCA reference of this standard.
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	
Costs/benefits	Suitable	No impact. A PIA is not necessary for this correction to the preface.

Protocol issue	Compliance	Comment
Secondary/tertiary references	Suitable	Amendment No. 1 includes two Australian secondary references - Parts 3 and 4 which are BCA references. Amendment No. 1 does not reference any new tertiary references.
ACM harmony to ACP	Suitable	Reference of the amendment will not cause any harmony issues between ACM and ACP.
Transition	Suitable	Reference of the amendment will not cause any transition issues.

Amendment No. 1 to AS/NZS 1170.1:2002
Structural design actions
Part 1: Permanent, imposed and other actions

CORRECTION

The 2002 edition of AS/NZS 1170.1 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: This Amendment applies to the Preface.

Published on 28 April 2005

Page 2 PREFACE

Delete the fifth paragraph and replace with the following:

This Standard is Part 1 of the 1170 series Structural design actions, which comprises the following parts, each of which has an accompanying Commentary published as a Supplement:

AS/NZS
1170.0 Part 0: General principles
1170.1 Part 1: Permanent, imposed and other actions
1170.2 Part 2: Wind actions
1170.3 Part 3: Snow and ice actions

AS
1170.4 Part 4: Earthquake loads

NZS
1170.5 Part 5: Earthquake actions – New Zealand

AS 1170.4
Structural design actions – Earthquake actions

Recommendations

It is recommended that-

- AS 1170 Part 4 2007 be referenced in both volumes of the BCA.
- Consequential to the reference of AS 1170 Part 4 2007, change the annual probabilities of exceedance of the earthquake design events in Table B1.2b and Table 3.11.3b of the BCA.
- The reference to the superseded AS 1170 Part 4 1993 be retained in the BCA for 12 months for transition and be removed at BCA2009.

Background

Standards Committee: BD-006

ABCB representative: [redacted]

Current version: 1993 edition and Amendment No. 1. - to be superseded by AS 1170.4 2007 Earthquake actions

Current BCA reference:
Volume One:
Part B1

Volume Two:
Part 3.11.3
Part 3.11.5

BCC consultation: The BCC 2006-3 papers contain a detailed history of the earthquake standard's revision and the changes proposed for the probability of exceedance table in BCA. This report will provide advice on BCC consultation since the BCC 2006 3 meeting.

Summary of proposal in 2007

Regulatory Impact Assessment

- At the BCC 2006-3 meeting, the BCC agreed that further cost impact / justification was required for both the revision and the probability table changes. The ABCB arranged an independent cost benefit analysis to be undertaken for both the revision and the probability table changes. The results of the analysis indicated a net benefit from the changes.
- The Office of Best Practice Regulation (OBPR) was consulted on the cost benefit analysis and requested minor additional work to satisfy RIS requirements. Subsequently, a Consultation RIS was approved for public comment by OBPR. The analysis was released for public comment in conjunction with the BCA2008 public comment draft.

- Five submissions were received on the Consultation RIS; four from Administrations and one from Master Builders Australia (MBA).
- The Victorian and NSW Administrations raised concerns expressed to them by the Earth Building Association of Australia about the effect of the proposal on *earth building*, while NSW also noted concerns about practitioner training for the new provisions. The Western Australian Administration raised some issues regarding the effects of the proposal on houses, while the response from the Tasmanian Administration was to endorse the proposal. MBA proposed that the adequacy of the RIS could be improved by the ABCB undertaking some additional work on the quantification of the benefits of the proposal.

These issues are being addressed through the development of the final RIS. After clearance from OBPR, the final RIS will be circulated to the Board for decision in October 2007.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for revision	Complies	There is sufficient change and justification to support a revision
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	The revision does not contain any matters of public policy.
Costs/benefits	Suitable	While the SA impact assessment advises benefits and no increased cost, this assessment was not accepted by BCC and an independent cost benefit analysis was requested and undertaken. The results of the analysis indicated a net benefit from the revision and the changes to BCA.
Secondary /tertiary references	Acceptable	The standard references four normative references which are also BCA references (AS 3700, 1170 Parts 0, 1 & 2.)
ACM harmony to ACP		BCC agreed that the ACP should be removed from Part 3.10.2 Volume Two.
Transition		A one year transition is recommended for AS 1170 Part 4 1993 and for the superseded edition to be removed from the BCA at 2009.

Amendment to the BCA Annual Probabilities of Exceedance Tables

Consequential to the reference of AS 1170 Part 4 2007, changes are also proposed to the earthquake design event for safety in Table B1.2b and Table 3.11.3b.

The changes propose a range in progressive steps to more accurately reflect the appropriate risk to safety of people in buildings from earthquakes. The changes are shown in the recommended column in the following table.

Table B1.2b

Importance level	Annual Probability of exceedance				
	Wind		Snow	Earthquake	
	Non-cyclonic	Cyclonic		current	**recommended**
1	1:100	1:200	1:100	1:500	**1:250**
2	1:500	1:500	1:150	1:500	**1:500**
3	1:1000	1:1000	1:200	1:500	**1:1000**
4	1:2000	1:2000	1:250	1:800	**1:1500**

AS 1288
Glass in buildings – Selection and installation

Recommendation

It is recommended that Amendment No. 1 to AS 1288 be referenced in both volumes of the BCA.

Standards Committee: BD-007

ABCB representative: [redacted]

Current version: 2006

Current BCA reference: **Volume One:**
B1.4 and Specifications C2.5 & C3.4

Volume Two:
Part 3.6

BCC consultation 1 August 2007 – BCC was sent the combined Postal ballot/Public comment copy of the correction amendment.

Summary of proposal

Amendment No. 1 is a correction amendment to correct and clarify the standard. It corrects mistakes and improves understanding of the standard.

BCC Comment on Amendment No. 1

The only comments on the amendment were from the Tasmanian Administration and the HIA.

The Tasmanian Administration expressed concern with the definition of "shopfront". The concern was that the proposed definition differed from that contained in Standards Australia Handbook "Glossary of Building Terms (SAAHB50)".

In response, Committee BD-007 have stated that the clause as proposed adds to the definition in AS/NZS 4668:2000 – Glossary of terms used in the glass and glazing industry. That definition only varies slightly from HB50 in that it does not mention 'shopping malls, arcades and similar public areas'. The definition in AS/NZS 4668 was found to be inadequate in that users were interpreting certain windows in buildings as needing to comply with the shopfront requirement and hence incurring unnecessary cost, when that was not the intention. It has been suggested that the amendment be brought more in line with that in HB50 with the addition of the few words (shown below in italics) that were needed for clarification to read:

Shopfront - glazed or partly glazed wall at public access level in shopping malls, arcades and similar public areas of non-residential buildings, with or without a stall board *suitable and / or intended for the display of products or services*

The HIA referred to a number of editorial issues which Committee BD-007 has accepted. The HIA also queried the change from 500 mm to floor level to 700 mm in clause 5.19(iii). HIA believed this to be a technical change that has long been argued without any real justification. They also made a similar comment on clause 5.19(iv).

With respect to clause 5.19(iii), Committee BD-007 have responded that change is actually less onerous than in AS 1288 – 2006 and reverts back to the same dimension as was part of the 1994 Standard. At one point it was proposed that all dimensions in Section 5 shown as being 500mm be increased to 700 mm. This change was rejected by the ABCB. In revising clauses back to 500 mm Standards overlooked this clause which needed to be changed to be consistent with the remainder of the Section.

With respect to clause 5.19(iv), Committee BD-007 have responded that the change was made for two reasons: (i) to clarify the wording without changing the intent from that shown in AS 1288 – 1994, and (ii) as this requirement relates to glass visibility, it was decided that the dimension of 40 mm for a fixed glazing bar should be reduced to 20 mm minimum to be consistent with the minimum dimension shown for marking.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for revision / amendment	Suitable	This amendment is to correct typographical and editorial errors and to reduce and eliminate ambiguity which is causing confusion.
Drafting criteria		
Terminology	Suitable when the ABCB suggested change is made (see comment)	ABCB has proposed a change to the 4th paragraph of clause 9.5.3.3.1, the expression "in accordance with the manufacturer's instructions" is to be replaced with "in accordance with the design". The paragraph would then read "The metal brackets used to attach the glass fins to the building structure shall be securely bolted to the glass fin and the bolts shall be tightened accurately in accordance with the design."
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	Amendment No. 1 does not contain any BCA public policy and is not performance based.
Costs/benefits	Suitable	BCC have been sent the PIA prepared by SA which indicates a net benefit and no cost increase from the amendment.
Secondary/tertiary references	Suitable	Amendment No. 1 does not reference any new secondary or tertiary references.

Protocol issue	Compliance	Comment
ACM harmony to ACP	Suitable	It is recommended that changes be made for BCA 2008 to clause 3.6.4.5 of Volume Two to ensure harmony with the ACM. The ACP requires safety glazing for glass mirror behind a vanity cabinet etc while Amendment No. 1 to the ACM would not. The proposed change to the ACP is as follows: *(c) Ordinary annealed glass, including mirror, may be used provided a fixed vanity or bench with a height of not less than 760 mm, depth of not less than 300 mm and extending the full width of the glass or mirror is located in front of the glass or mirror.*
Transition	Suitable	Reference of the amendment will not cause any transition issues.

Comment

Amendment No. 1 is considered suitable to be referenced in both volumes of BCA2008.

AS 1289
Method of testing soils for engineering purposes
Method 6.3.3 - 1997
Determination of the penetration resistance of a soil – Perth sand penetrometer test

Recommendations

It is recommended that Amendment No. 1 to AS 1289 Method 6.3.3 be referenced in Volume Two of the BCA.

Background

Standards Committee: CE-009

ABCB representative: [redacted]

Current version: BCA references the current 1997 edition.

Current BCA reference: **Volume One:**
N/A

Volume Two:
Part 3.2.2

BCC consultation: As this is a correction amendment, prior consultation has not been undertaken.

Summary of proposal

Amendment No. 1 is a clarification or qualification amendment principally to raise awareness of safety and other matters. Amendment No. 1 is a single paragraph amendment to the scope of the standard and is included below.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for amendment	Suitable	This amendment was produced eight years ago prior to the introduction of the ABCB protocol for BCA referenced documents. From a BCA perspective the amendment is an inconsequential matter and will have no effect on the purpose of the BCA reference of this test method standard. The amendment is principally to raise awareness of safety matters and this is considered sufficient justification for referencing the amendment.
Drafting criteria		

Protocol issue	Compliance	Comment
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	Amendment No. 1 does not contain any matters of BCA public policy.
Costs/benefits	Suitable	From a BCA perspective, the amendment is an inconsequential matter and a PIA is not necessary. The impact will be neutral.
Secondary/tertiary references	N/A	Amendment No. 1 does not contain any references.
ACM harmony to ACP		There will not be harmony issues from referencing amendment No. 1.
Transition		Referencing of Amendment No. 1 will not cause any transition issues.

Comment

This standard test method (Method 6.3.3) is referenced in the BCA to limit gravel size for sand fill used in controlled fill or rolled fill under concrete slabs. The reference in BCA of Amendment No. 1 will not affect the purpose of the BCA reference. Amendment No. 1 is considered suitable for reference in Volume Two of BCA2008.

Amendment No. 1 to AS 1289
Method of testing soils for engineering purposes
Method 6.3.3 - 1997
Determination of the penetration resistance of a soil –
Perth sand penetrometer test

SUMMARY: This amendment applies to clause 1 (Scope)

Published on 5th November 1999

Page 1 clause 1

Add the following text.

This standard may involve hazardous materials, operations and equipment. This standard does not purport to address all of the safety concerns, if any, associated with it use. It is the responsibility of the user of this standard to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.

AS 1860
Installation of particleboard flooring

Recommendation

It is recommended that AS 1860.2 2006 be referenced in Volume One of the BCA.

Background

Standards Committee: TM-005 Reconstituted Timber panel products

ABCB representative: [redacted]

Current version: BCA references the 1998 edition - AS 1860 Installation of particleboard flooring, which is superseded by the 2006 edition – AS1860 Particleboard flooring Part 2 2006 Installation – published June 2006.

Current BCA references:

Volume One:
B1.4 (k)

Volume Two:
N/A

BCC consultation: 2 August 2006 - BCC sent publication draft of the standard, an impact assessment from SA and a memo from ABCB on the revision.

October 2006 - At BCC2006-3, BCC resolved not to reference the standard and requested that the revision comply with the protocol.

History

In April 1998 at the BCC 19 meeting, AS 1860 1998 was accepted for reference in the BCA. Since the standard was published nine years ago, industry has found a number of errors and out of date provisions in the standard and Standards Australia published a revision of the standard in June 2006.

BCC Comment

In 2006, BCC were consulted over the possible reference of this standard. No comments were received from BCC members.

Summary of proposal

For structural particleboard flooring, the BCA references the 1998 edition - AS 1860 Installation of particleboard flooring, which is superseded by the 2006 edition.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Compliance with protocol • Process • Content	 No Yes	The content of the standard complies with the protocol. However, not all steps in the development process were followed.
Justification for revision	Complies	The revision consists of corrections and updates and there is sufficient change and justification to support a revision.
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	The revision does not contain any matters of public policy.
Costs/benefits	Suitable	The PIA advises benefits and no increased cost.
Secondary/tertiary references	Acceptable	The standard references; AS 1684.2 3 & 4, AS 1789 for electro galvanised coatings on ferrous articles, AS 1860.1 the specification for particleboard flooring and AS 4491 a glossary of timber terms. All these references are included for specific purposes and are needed for the purpose of the standard and would not impact adversely on the purpose of the BCA reference.
ACM harmony to ACP		The ACP is not affected by the new reference as AS 1860.2 2006 is proposed for reference in Volume One only and is not required to be referenced in Volume Two.
Transition		Reference of AS 1860.2 2006 will not cause any transition issues.

Comment

While the development process for this revision did not follow the process described in the ABCB Protocol, the content of the standard does comply with the Protocol and the revision is considered suitable for reference in Volume One of BCA2008.

AS 1926
Swimming pool safety
Part 3 2003 Water recirculation systems

Recommendation

It is recommended that AS 1926.3 be referenced in both volumes of the BCA.

Background

Standards Committee: CS-034

ABCB representative: [redacted]

Current version: AS 1926.3-2003

Current BCA reference: Not currently referenced in national BCA

BCC consultation: July 2007 – The proposal was referred to the State and Territory Administrations meeting as part of the Variations Reduction Strategy.

Summary of proposal

As part of work being undertaken on the Board's Variation Reduction Strategy, a number of State and Territory Administrations have identified opportunities to increase national consistency and consolidation in the regulation of swimming pool water recirculation systems.

At the July 2007 State and Territory Administrations meeting, in-principle agreement was reached to reference AS 1926.3-2003 in BCA 2008, along with the relevant extracts from AS 2610-1993 for spa pools. The BCC draft of BCA 2008 reflects this agreement. Consequential amendments may be necessary to affected State and Territory variations and additions in the BCA.

The commitments made in the 2006 ABCB Intergovernmental Agreement (IGA) place a strong emphasis on increasing national consistency and consolidation in building regulations throughout Australia. At its February 2006 and April 2007 meetings, COAG identified building regulation as a "hot spot" area where overlapping and inconsistent regulatory regimes are impeding economic activity and reinforced the commitments made in the IGA to achieve national consistency in building regulations.

Table 1 summarises the current statutory requirements for skimmer boxes and suction outlets in swimming pools throughout Australia. It was prepared in consultation with State and Territory Administrations. Table 1 shows that all jurisdictions except Queensland currently regulate skimmer boxes, albeit without national consistency. Five jurisdictions currently adopt AS 1926.3, which contains additional requirements for suction outlets and two jurisdictions also have additional requirements specifically for spa pools.

TABLE 1 Comparison of State and Territory Regulation of Skimmer Box and Suction Outlets[1]		
S/T	**AS 1926.3**	**Legislation**
ACT	Yes	*BCA*[2], Order under the *Fair Trading (Consumer Affairs) Act 1972*[3]
NSW	Yes	*BCA, Fair Trading (General) Regulation 2002*[3]
NT	No	Notice under the *Consumer Affairs and Fair Trading Act*[4]
QLD	No	None[5]
SA	Yes	*BCA,* Declaration under the *Trade Standards Act 1979*[4]
Tas	Yes	*BCA*
Vic	No	Order under the *Fair Trading Act 1999*[4]
WA	Yes	Order under the *Consumer Affairs Act 1971* [4], *Health Act 1911 Code of Practice for the Design, Construction, Operation, Management & Maintenance of Aquatic Facilities*[6]

Notes

[1] This table was prepared in June 2007.

[2] The ACT BCA Appendix includes requirements relating to this issue, but does not reference AS 1926.3.

[3] This requirement refers to parts of AS 1926.3-1993 and contains additional requirements for certain spa pools.

[4] This legislation effectively bans "potty-type" skimmer boxes.

[5] Part 18 of the *Queensland Development Code* requires skimmer boxes to comply with AS 2818-1986, but has no statutory force.

[6] This Code of Practice references AS 1926.3-2003 and contains additional requirements relating to this issue.

A number of existing Australian Standards deal with swimming pool water recirculation systems, including:

- AS 1926.3-2003 Swimming pool safety – Water recirculation systems. This standard contains requirements for skimmer boxes and suction outlets.
- AS 2610-1993 Parts 1 and 2 (currently under review) Spa pools – Public spas (Part 1) and Private spas (Part 2). This standard references AS 1926.3 and contains additional requirements for suction outlets. The NSW and ACT legislation for spa pools is similar to this standard. The standard also covers other issues relating to spa pools.

The need for development of legislation and Australian Standards has arisen from a number of serious injuries and deaths from swimming pool water recirculation systems over the years. For example, according to the WA Department of Consumer and Employment Protection, legislation banning "potty type" skimmer boxes was introduced in WA after a string of accidents, which included the disembowelment of a young child. More recently, an article in *The Australian* reported the drowning of a young girl in NSW after she was caught by the suction pump on the floor of a spa, while another young girl in NSW nearly drowned after her hair became caught in a spa suction point.

BCC Comment

State and Territory Administrations reached in-principle agreement to referencing AS 1926.3-2003 in BCA 2008 at the July State and Territory Administrations meeting.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for adoption	Suitable	The proposal increases national consistency and consolidation.
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	The standard does not contain any public policy matters.
Costs/benefits	Suitable	The preliminary impact assessment indicates a net benefit.
Secondary/tertiary references	Suitable	The standard does not make normative reference to any new secondary or tertiary references.
Effect on ACP	Suitable	No ACP currently exists.
Transition	Suitable	A transitional period is not considered necessary.

Comment

The water reticulation system standard AS 1926.3-2003 is considered suitable for reference in both volumes of BCA 2008.

AS 2419.1
Fire hydrant installations
Part1 2005 System design, installation and commissioning

Recommendation

It is recommended that Amendment No. 1 to AS 2419.1 be referenced in Volume One of the BCA.

Background

Standards Committee:	FP-9
ABCB representative:	[redacted]
Current version:	2005 edition
Current BCA reference:	**Volume One:** E1.3
	Volume Two: N/A
BCC consultation:	August 2006 - BCC sent correction amendment and ABCB comment.
	January 2007 - BCC sent updated report recommending ABCB change vote to be positive.

Summary of proposal

Amendment No. 1 was published on the 8 June 2007. Amendment No. 1 is to correct typographical and editorial errors and rearrange and restructure some sentences for ease of use and improved understanding by users.

In August 2006, BCC were advised that ABCB voted no to the amendment, based on uncertainty over new secondary references (non compliance with ABCB protocol). Following this, Standards Australia confirmed that these new references did comply with the ABCB Protocol.

Accordingly, a new report was sent BCC members in January 2007 recommending that the ABCB change its vote to be positive. All responses supported the positive. The NSW Administration also commented that:

> A major water supply agency in this State (Sydney Water) is currently implementing its recently introduced Water Pressure Management Program. The program is to be implemented over several years.
>
> It involves installing pressure reduction devices on existing town mains to reduce pressure in the system and consequently reduce the potential for system leaks and burst water mains.
>
> It may result in the need for building owners with water pressure dependent fire safety systems fed directly from the public main to carry out work to maintain the required level of system performance and an adequate level of protection for their building.
>
> It may also impact on water pressure dependent fire safety system design.

Other water authorities in the country are also undertaking such programs (eg Gold coast City Council and Yarra Valley Water), and it is likely there will more that will follow suit.

The concern of this Administration is that a design may assume a certain level of water pressure in accordance with the Standard however, this design assumption may not be correct in the near future due to the water pressure reduction work of the water supply authority.

The questions for the Standards Committee are therefore - are they aware of the Water Pressure Management Program, and does the Standard adequately cater for this scenario in specifying what design pressures must be applied in a design?

This comment was passed to Committee FP–009 with a request for a response. To date, the committee has not considered that matter.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for amendment	Suitable	The amendment corrects mistakes in the standard. It corrects typographical and editorial errors and rearranges and restructures some sentences for ease of use and improved understanding by users.
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	No public policy is contained in the amendment.
Costs/benefits	Suitable	A PIA from SA shows a net benefit from this amendment by elimination of ambiguities.
Secondary/tertiary references	Suitable	Two existing secondary references are deleted (AS 3579 and AS4041). Six other secondary references are included (AS 4728 for welded steel pipes, AS 2280 for ductile iron pipes and fittings - a correction to title, ASME B36.19M correction for stainless steel pipe standard and two new specification standards for stainless steel - pipe A132 and fittings A403). These secondary reference standards are considered acceptable for their purpose in the BCA primary reference.
ACM harmony to ACP	Suitable	As AS 2419.1 is a BCA Volume One reference only, reference of the amendment will not cause any harmony issues between ACM and ACP.
Transition	Suitable	Reference of the amendment will not cause any transition issues.

Comment

Amendment No. 1 to AS 2419.1 is considered suitable for reference in Volume One of BCA2008.

AS/NZS 3500.3
Plumbing and drainage – Stormwater drainage

Recommendation

It is recommended that Amendment No 1 to AS/NZS 3500 Part 3 be referenced in both Volumes of the BCA.

Background

Standards Committee: WS-014

ABCB representative: [redacted]

Current version: 2003 edition

Current BCA reference: **Volume One:**
F1.1 Damp and weatherproofing

Volume Two:
3.1.2 Drainage, 3.5.2 Gutters and downpipes

BCC consultation: As this is a correction amendment prior consultation was not undertaken.

Summary of proposal

Amendment No. 1 is a correction amendment to correct mistakes made in the 2003 edition of the standard. Essentially the mistakes are as follows:

- Note 5 now includes more advice and references
- Figures E10 and E11 are swapped around (published in wrong order)
- Figure 16 - both graphs are improved by inclusion of (a) and (b) determination value statements
- Step (j) is corrected.

A copy of Amendment No. 1 is attached.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for revision/amendment	Suitable	To correct mistakes in the standard
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	
Costs/benefits	Suitable	No impact - a PIA not necessary for this correction amendment.
Secondary/tertiary references	Suitable	

Protocol issue	Compliance	Comment
ACM harmony to ACP	Suitable	Reference of the amendment will not cause any harmony issues between ACM and ACP.
Transition	Suitable	Reference of the amendment will not cause any transition issues.

Comment

Amendment No. 1 to AS/NZS 3500.3 2003 is considered suitable for reference in Volume Two of BCA2008.

Amendment No. 1 to AS/NZS 3500.3

CORRECTION

The edition of AS/NZS 3500.3 is amended as follows; the amendment(s) should be inserted in the appropriate place(s).

SUMMARY: This Amendment applies to Clause 3.5.4, and Appendices E, I and J.

Published on 28 July 2006

Page 28 Clause 3.5.4, Note 5

Delete Note 5 and *replace* with the following:

5 For eaves gutters of domestic buildings with hipped and/or gable roofs of constant slope with no flat roofs or walls contributing to the catchment area, the catchment area calculations may be based entirely on Equation 3.4.3 (2) using F determined by the roof slope and A_h determined from a plan. If Equation 3.4.3 (2) is used, it is not necessary to take account of wind direction. Examples of the use of this method are shown in Appendix H and in HB114.

Page 120 Figure E10

Delete Figure E10 and *replace* it with the following (previously Figure E11)

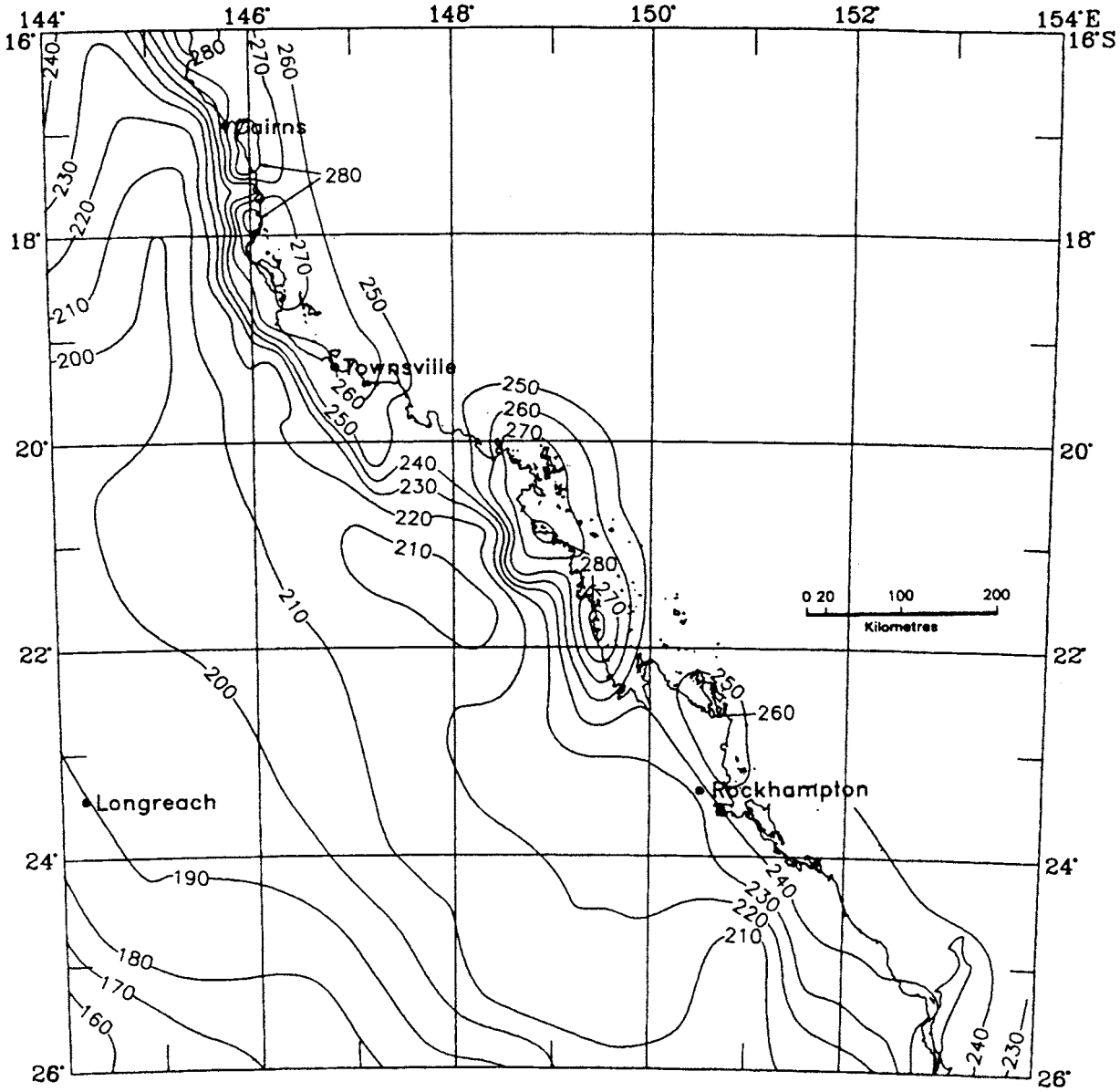


FIGURE E10 AREA 5—RAINFALL INTENSITIES (mm/h)—5 MIN—ARI 20 YEARS

Page 121 Figure E11

Delete Figure E11 and *replace* it with the following (previously Figure E10):

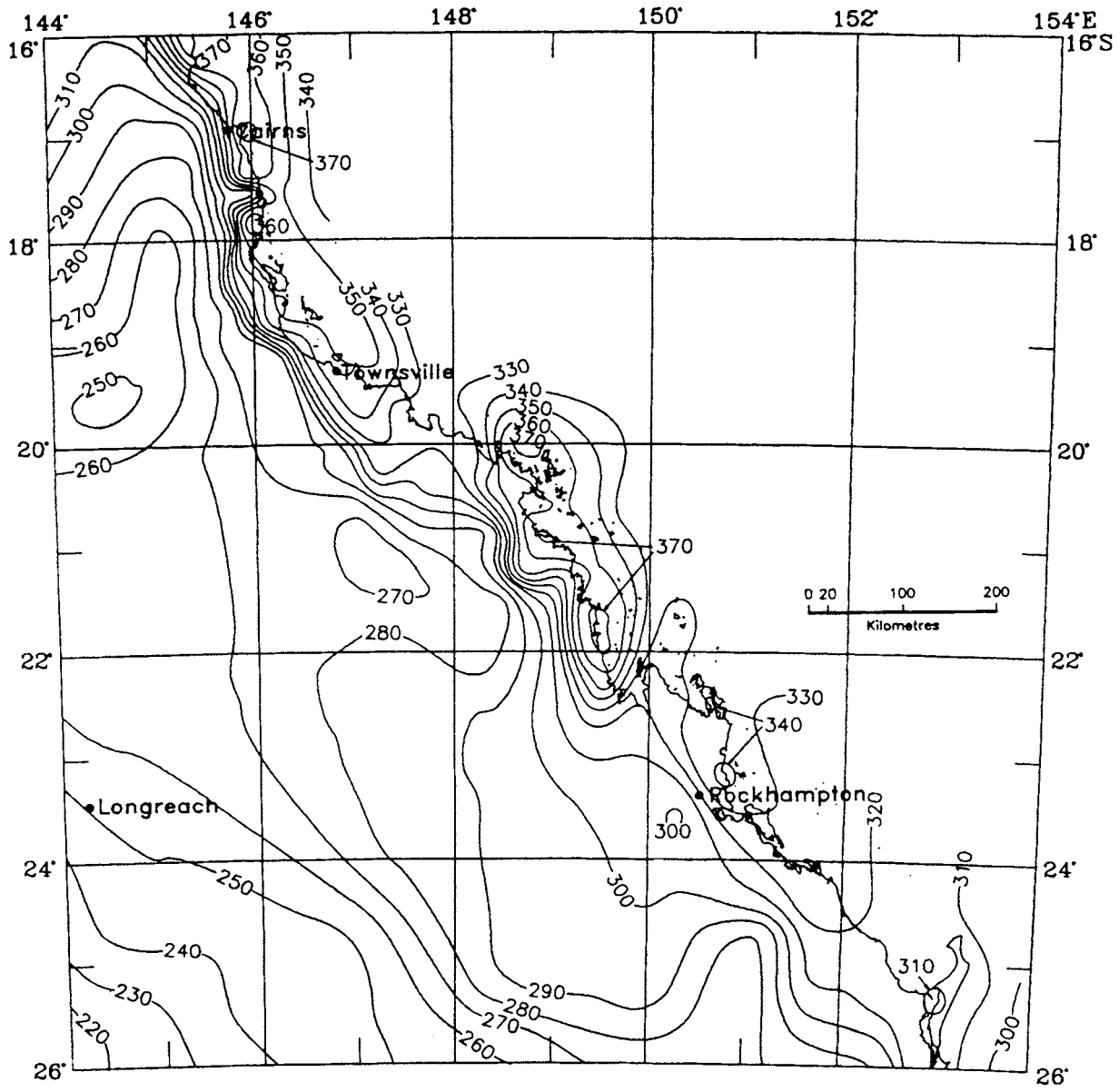
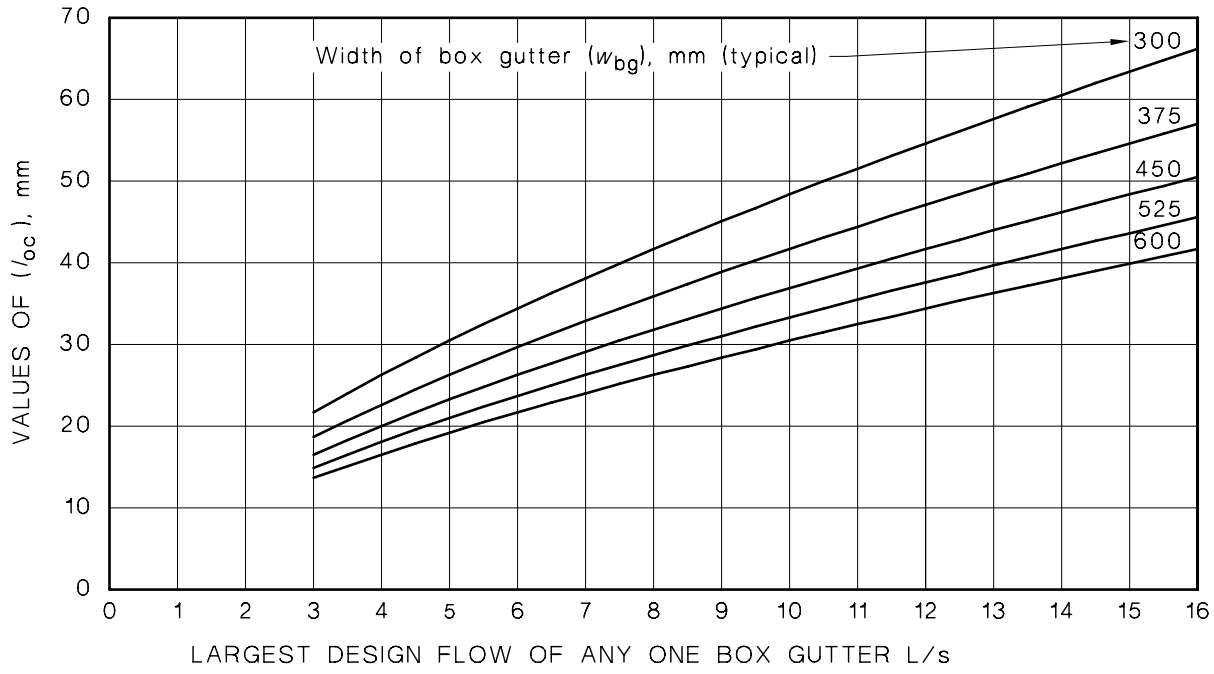


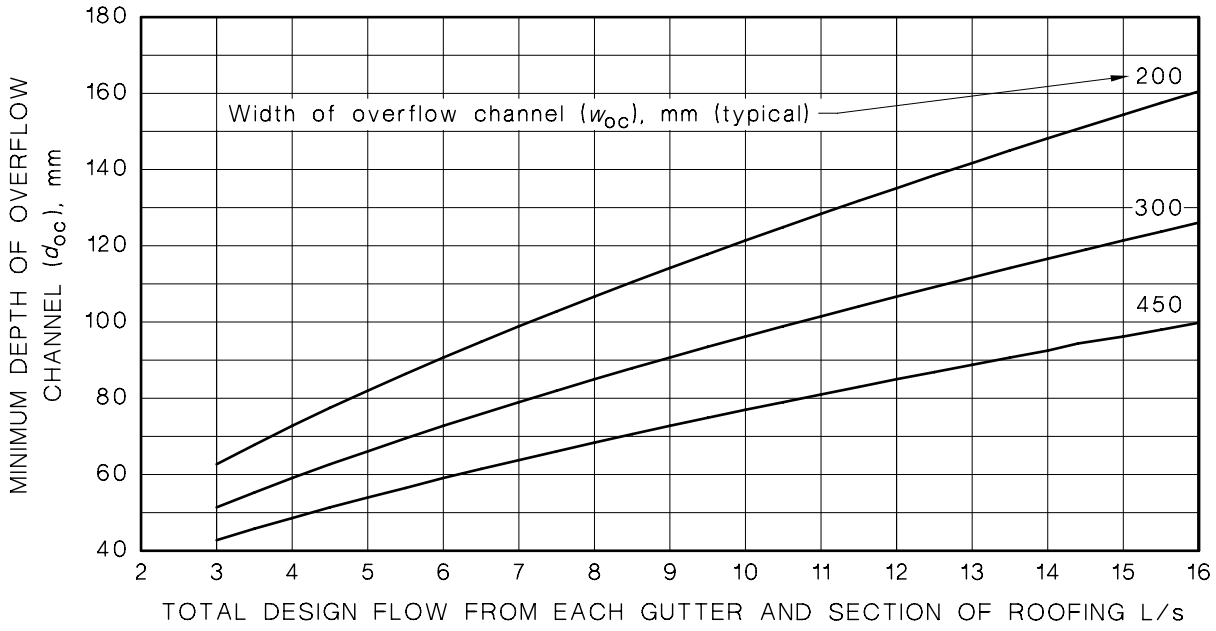
FIGURE E11 AREA 5—RAINFALL INTENSITIES (mm/h)—5 MIN—ARI 100 YEARS

Page 149 Figure I6

Delete Figure I6 and *replace* it with the following:



(a) Determination of values for l_{oc}



(b) Determination of values for d_{oc}

NOTE: Graph (a) applies to both sump/side overflow device, and sump/high-capacity overflow device.

FIGURE I6 DESIGN GRAPH FOR SUMP/SIDE OVERFLOW DEVICE

Page 161 J4.2 Step (j)

Delete Step (j) and *replace* with the following:

(j) Is *l*oc >60? No? Go to Step (p).

AS/NZS 3500.5
Plumbing and drainage – Domestic installations

Recommendation

It is recommended that Amendment No 4 to AS/NZS 3500 Part 5 be referenced in Volume Two of the BCA.

Background

Standards Committee: WS-14

ABCB representative: [redacted]

Current version: 2000 edition - Plus amendments 1, 2 & 3.

Current BCA reference: **Volume Two:**
3.1.2 Drainage, 3.5.2 Gutters and downpipes and 3.12.5.Services

BCC consultation: As this is a correction amendment, prior consultation was not undertaken.

Summary of proposal

Amendment No. 4 is a correction amendment to correct two mistakes made in Amendment No. 3 to the standard. Essentially an error occurred in the publication of the earlier amendment when the two figures were included as part of that amendment (the two figures were incorrectly published with Amendment No. 3). Amendment No. 4 corrects these two mistakes by reintroducing the correct figures in the appendix.

This amendment (copy attached) applies to an informative appendix which is to assist users of the standard in guidance on eaves gutter design. Consequently, the amendment has little effect on the regulatory purpose of the reference of this standard in the BCA.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for revision/amendment	Suitable	To correct a mistake in guidance information in the standard
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Suitable	
Costs/benefits	Suitable	No impact - a PIA not necessary for this correction to informative guidance.
Secondary/tertiary references	Suitable	

Protocol issue	Compliance	Comment
ACM harmony to ACP	Suitable	Reference of the amendment will not cause any harmony issues between ACM and ACP.
Transition	Suitable	Reference of the amendment will not cause any transition issues.

Comment

Amendment No. 4 to AS/NZS 3500.5 2000 is considered suitable for reference in Volume Two of BCA2008.

Amendment No. 4 to AS/NZS 3500.5

CORRECTION

The**Error! Style not defined.** edition of AS/NZS 3500.5 is amended as follows; the amendment(s) should be inserted in the appropriate place(s).

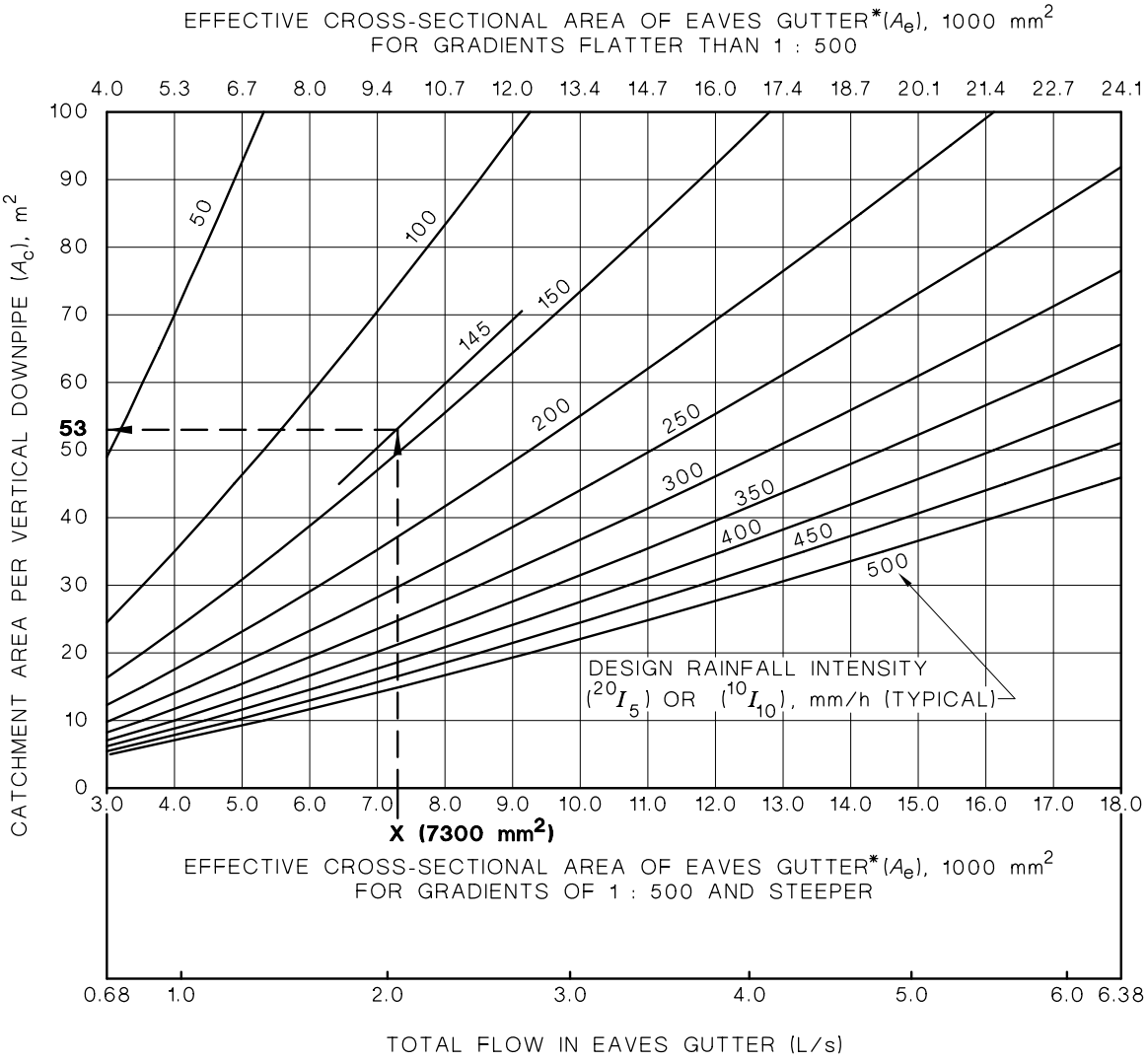
SUMMARY: This Amendment applies to Appendix 5B (incorrectly published with Amendment 3).

Published on 27 July 2006

AMDT No. **Error! Style**

Page 277 Figure 5.30

Delete existing Figure 5.30 and *replace* with the following:

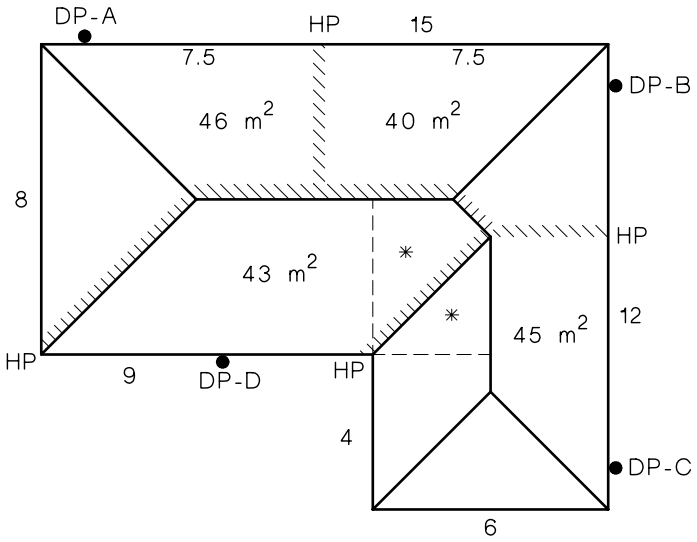


Page 279 Figure 5.31

Delete existing Figure 5.31 and *replace* with the following:

LEGEND:

● = vertical downpipe
HP = high point
DP = downpipe
✳ = roof drained by valley gulley



AS 3700
Masonry structures

Recommendation

It is recommended that Amendment No. 3 to AS 3700 2001 be referenced in both volumes of the BCA.

Background

Standards Committee: BD-004

ABCB representative: [redacted]

Current version: 2001 edition including Amendments 1 and 2

Current BCA reference:

Volume One:
Spec A2.3, Part B1 and Part F5.

Volume Two:
Parts 3.3.1, 3.3.3, 3.3.4, 3.8.6, 3.10 1, 3.10.2 and Part 3.11

BCC consultation:

- The BCC 2006-3 papers contain a detailed history of the BCC consultation for Amendment No. 3.
- Since the BCC 2006-3 meeting there has been no further BCC consultation for Amendment No. 3.

Summary

- The BCC 2006-3 papers contain a detailed history of the development and reasons for Amendment No. 3.
- The ABCB Office suggests that BCC should consider Amendment No. 3 to AS 3700 in conjunction with AS 1170.4 2006 (see Attachment 2).
- A number of BCC members commented adversely on the proposal for screw fixing of face fixed wall ties for other than housing – this has been removed from the amendment.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification	Suitable	
Drafting criteria	Suitable	
Terminology	Suitable	
Structure	Suitable	
ACM harmony to ACP		The ACP in Volume Two is not in conflict with the ACM (proposed Amendment No. 3 to AS 3700).

Protocol issue	Compliance	Comment
Transition		Transition is recommended so that the old AS 1170.4 1993 and Appendix A of AS 3700 continue to be referenced in the BCA for 12 months. However, the new AS 1170.4 2006 edition and Appendix AA of AS 3700 is expected to be favoured by designers due to more comprehensive advice and lower cost solutions.
Regulatory criteria		
Public policy	Suitable	
Costs/benefits		A PIA has been completed by SA and it shows a net benefit to consumers and industry.
Secondary / tertiary references	Suitable	The Amendment references one new standard – AS 1170 Part 4 2006 (the revision). It is proposed that this standard also be referenced in the BCA.

Comment

Amendment No. 3 to AS 3700 is considered suitable for reference in both volumes of BCA2008.

AS4055
Wind loads for housing

Recommendation

It is recommended that Amendment No. 1 to AS 4055 2006 be referenced in Volume Two of BCA 2008.

Background

Standards Committee: BD-99

ABCB representative: [redacted]

Current version: 2006 edition

Current BCA reference: Volume One: N/A

Volume Two: 3.11.5 (b)

BCC consultation: This is the first consultation to BCC over Amendment No. 1. As this is a correction amendment prior consultation was not undertaken.

Summary of proposal

Amendment No. 1 is a correction amendment. The corrections that are proposed to the 2006 edition have been identified by use of the standard by industry since publication in early 2006.

Amendment No. 1 contains 15 corrections to the standard. 13 of the corrections are mistakes/editorial errors that need to be included in the 2006 edition quickly as a few of them could have adverse consequences for safety of buildings, components and products designed using the standard. The remaining 2 corrections are editorial improvements/clarifications that are to reduce ambiguity in the standard and make using the standard easier. AS 4055 is an important standard for housing and ideally the corrections should be published and included in BCA 2008.

Standards Australia has provided ABCB with a proposal for the development of the amendment and that proposal complies with the ABCB protocol. Additionally Standards Australia has provided a PIA for the amendment which includes a summary of the 15 changes proposed and an explanation of consequences of some of the mistakes/editorial errors.

Attached to this report is a copy of Amendment No. 1.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for amendment	Yes	This amendment is to correct mistakes/editorial errors and to reduce ambiguity which is causing confusion. The corrections are needed by users of the standard and this is justification for the changes to the standard
Drafting criteria		
Terminology	Suitable	
Structure	Suitable	
Regulatory criteria		
Public policy	Yes	The amendment does not contain any BCA public policy and is not performance based.
Costs/benefits	Yes	PIA done. Result shows no increased cost.
Secondary/tertiary refer ences	Suitable	No secondary or tertiary references in the amendment.
ACM harmony to ACP		Reference of Amendment No 1 will not cause any harmony issues between ACM and ACP.
Transition		Reference of Amendment No. 1 will not cause any transition issues.

Comment

Amendment No.1 to the 2006 edition on of AS 4055 is considered suitable for publication and to be referenced in Volume Two of BCA 2008.

Building with earth bricks and rammed earth in Australia
Second edition 2007
Earth Building Association of Australia
(EBAA Document)

Recommendation:

It is recommended that-

- Building with Earth Bricks and Rammed Earth in Australia, Second edition 2007 be referenced in both volumes of the BCA
- CSIRO Bulletin 5 be removed from both volumes of the BCA.

Background

Committee:	EBAA Committee for building with earth bricks and rammed earth
ABCB representative:	[redacted]
Current version:	CSIRO – NBTC 1987 Bulletin 5 – Earth wall construction 4th Edition EBAA document proposed for BCA reference - Second edition 2007 Building with earth bricks and rammed earth in Australia. (Draft prepared for BCA). First edition 2005 is an industry advisory document
Current BCA reference: CSIRO Bulletin 5	**Volume One:** B1.4 **Volume Two:** Parts 3.3.5 & 3.11
BCC consultation: CSIRO Bulletin 5	See history of Bulletin 5 below
BCC consultation: EBAA Document	2003/2004 – See history of EBAA document below. March 2007 BCC2007-1 - BCC requested that ABCB Office prepare a report for the 2005 edition of EBAA document to be considered for possible BCA reference for BCA2008. 29 May 2007 - BCC sent 2005 edition for consideration. Comment received from Tasmania, SA and WA. 4 September 2007 - BCC sent 2007 edition and EBAA reply to comment from Tasmania, SA and WA, plus PIA on 2007 edition and comparison list between Bulletin 5 and 2007 edition.

History of CSIRO Bulletin 5 1987

At the 2007-1 BCC meeting and the 2007 NTS, it was agreed that CSIRO Bulletin 5 – 1987 Earth wall construction 4th edition, would be removed from both volumes of BCA 2008. The removal is considered necessary as Bulletin 5 has not been maintained, is out of date and suggests building practices that are inappropriate in contemporary construction.

Also, for the BCA2008 amendment, it is proposed to remove the ACP of Part 3.3.5 Earth wall Construction from Volume Two. This is proposed as the Part 3.3.5 provisions contain a number of references to the old CSIRO Bulletin 5 which make retaining the provisions inappropriate.

EBAA request to reference EBAA document

In March 2007, in response to the ABCB enquiry over the removal of Bulletin 5 from the BCA, the EBAA-

- Requested ABCB consideration of referencing the EBAA document in the BCA; and
- Supported the proposal that Bulletin 5 should be removed from BCA as it is outdated and no longer appropriate for earth building.

History of EBAA document

From 2003 to 2004, the EBAA Committee worked to produce the EBAA document. However, the ABCB was not requested to consider the finished document for reference in the BCA at that time.

During development of the document, the BCC were informed of the various stages, had input to the EBAA Document, and the ABCB was involved in the committee work for the document.

The EBAA document was published in 2005 and since publication has been used as a guideline for construction and education for the earth building industry.

The development of the EBAA document in 2003-04 preceded the 2004 edition of the Protocol for the development of BCA reference documents. Notwithstanding this, the development process for the EBAA document generally complied with the protocol and the contents of the EBAA document is also considered to comply with the protocol.

BCC Comment on EBAA document

July/August 2007 - comment received from Tasmania, SA and WA on 2005 edition of the EBAA document. The EBAA committee's reply was sent to all BCC members on 4 September 2007.

10 &11 September 2007 - additional comment received from SA and Tasmania on the 2007 edition of the EBAA document. (copies of this comment attached below).

The ABCB Office has requested the EBAA Committee provide advice that the 2007 edition of the EBAA document is structurally adequate for earth buildings. Both SA and Tasmanian Administrations have suggested this is desirable. A verbal report will be provided at the meeting on the progress of this request.

Compliance with Protocol for referenced documents

Protocol issue	Compliance	Comment
Justification for the EBAA document as a new BCA referenced document	Yes	CSIRO Bulletin 5 1987 is obsolete and suggests inappropriate superseded construction that conflicts with BCA referenced loading standards. The EBAA document is a contemporary industry-based publication based on current practice prepared by practitioners, consistent with the BCA and BCA referenced standards.
Drafting criteria		
Terminology	Acceptable	
Structure	Acceptable	
Regulatory criteria		
Public policy	Yes	Does not contain any BCA public policy and is not performance based.
Costs/benefit	Yes	PIA shows no increased cost from reference of EBAA document compared to Bulletin 5. PIA suggests that removal of Bulletin 5 without a replacement Deemed to Satisfy will increase cost and have a negative impact on earth wall construction industry.
Secondary/tertiary references	Yes	EBAA document contains six secondary references; the BCA, four BCA primary referenced standards (AS 1170.4, AS/NZS 2904, AS 4055 and AS 3660.1), and AS 1289.3.1.1 1995 a soil classification standard – a test for liquid limit of soil. The soil test is a current standard and is considered an appropriate test method.
ACM harmony to ACP		The ACP for Earth wall Construction in Part 3.3.5 is proposed for removal with Bulletin 5 as Part 3.3.5 is reliant on Bulletin 5.
Transition		Reference of the EBAA document will not cause any transition issues as industry advises that Bulletin 5 is not used at present and that earthwall construction is being undertaken in accordance with the EBAA document.

Comment

The EBAA document is considered suitable for reference in both volumes of BCA 2008.

SA Administration comment of 10/9/2007 on EBAA document 2007 second edition

I have had a look at the revised document and the responses to our comments.

The responses are particularly disappointing. Simply saying that the document is based "on a significant history of design and construction that have provided satisfactory structural performance" is just not good enough and does nothing to allay our concerns. The old CSIRO document was much more thorough in explaining the structural aspects even though it is out of date now.

We in SA can support a document that has lintel sizes and connection details, and has not had an engineer cast a critical eye over it.

Tasmanian Administration comment of 11/9/2007 on EBAA 2007 second edition

One thing I note you have not referred to in your email (that was in addition to the comments of 2005), was my concern in relation to the engineering verification of these provisions for compliance with the structural standards. The same concern SA has.

I note that the scope of the document has been expanded to include wall heights of building etc (clause 1.6). These heights are in excess of normal unreinforced masonry construction (BCA 3.3.1.2). The wall thickness does not refer to internal or external walls and appears to be inconsistent with BCA 3.3.5.3. If we are going to accept this document then in my view we need certified structural advice that the provisions in this document comply with the BCA and associated Standards. Either the EBAA should provide this advice from one of its third party professional adviser or the ABCB gets the document checked. With Bulletin 5 we did have the backing of CSIRO to fall back on, with this document we only have the EBAA. What is their standing in the technical development of construction? Unfortunately, as regulators we have to take account of who is developing the regulation and their compliance, if we are going to include the document in the BCA. Unless this structural verification is provided I will have difficulty in accepting the document for inclusion in the BCA .

I also note that the document is to apply to commercial buildings. From previous comments made I thought this was one of the reasons Bulletin 5 was currently unacceptable, so why are we allowing it in this document? Lets be consistent.

I have to say that I found the Summary Comparison between the EBAA document and Bulletin 5 of concern in relation to the bias shown for the EBAA document over Bulletin 5. It is alright to show where the EBAA is updated but to dismiss all the additional information provided in Bulletin 5 and not in the EBAA document is of concern. It should be remembered that Bulletin 5 has been around since 1952 and if Industry are saying that they have not been using the document for some time then I wonder what they have been building and their compliance with the BCA.

In the past I have relied on the "experts" in EBAA to make sure the technical provisions in the document were correct, and only commenting on the process, however in view of the comments made in the documents provided I have now myself reviewed the document.

I note that the diagrams were not provided in the document for review. I presume they are as in the existing document. If not and they are to be changed then we need to be provided with the proposed changes.

I note also that the document has a high number of performance requirement clauses rather than DTS provisions. This should be of concern to us all. Acceptable Construction Manuals need to include DTS provisions to provide certainty to the Industry. The performance requirements requiring alternative solutions can be costly to Industry and difficult for building surveyors to determine compliance. I would like to see more DTS provisions in this document.

Some Specific Comments:

- Scope - Refer to previous comment in relation to applying to "commercial buildings". Delete "commercial buildings".
- Clauses 1.1 to 1.6 - appear to be application clauses not "criteria". Change lead in to Clauses.
- Clause 1.6 - refer to previous comments.
- Reference documents - either delete "by Australian Building Codes Board" and "by Standard Australia" or correctly include "published by .....)
- Reference Document - AS/NZS2904 Amendment 1 should be "March 1998".
- Shrinkage - 2.2.7 and 3.6.1 - requires the materials and design to allow for shrinkage(depends on the particular climate and can be for an extended period). This document is a DTS Acceptable Construction Manual. Surely there needs to be some provisions included which relate to shrinkage and climate that are within acceptable limits similar to those included for timber framing in 3.3.1.10? If nothing is included how is a designer going to make allowances or a Building Surveyor going to determine compliance? How also is a client going to determine what he/she is going to get if they have one of these building built? The document includes shrinking test parameters so surely it should be easy to determine an amount of shrinkage to allow for in a defined height and length of wall?
- Part 3.1 - what about other materials, such as sand , cement, lime, timber, concrete, and steel and their compliance with Australian standards and where steel is built into walls their corrosive protection requirements?
- Clause 3.2.2 - Explanatory Note d) - "may vary to any degree" seems that anything goes. Surely there is an acceptable finish that can be described? How is a client going to determine what they are going to get?
- Clause 3.3.1 - performance requirement, How is a builder going to determine this?
- Clause 3.6.1 - refer to comments on Clause 2.2.7 above.
- Clause 4.3.1(d) - refers to soil "which have a proven history of successful installations need not be tested". How is this to be determined? Who is to determine? What documentary evidence would be provided ?
- Clause 4.6.3 - delete "where require by the responsible authority" as Acceptable Construction Manuals should not include other approval processes.
- Clause 5.3.2 - This provision and the circumstance need a detail as it not clear, and noting that the footing and slab design have to comply with the BCA. What is meant by "suitably durable for the application"? How is a building surveyor going to determine compliance with this provision?
- Clause 5.4.1 - Should include a detail to show the installation. The BCA is not exactly clear in 3.3.4.1 and 3.3.4.9.
- Clause 1.1.2 (5.4.2) - Table 5.4.2 - subclause e) is not the same as in the BCA. Needs to be checked in relation to Termite Provision and compliance. Reference to "as chosen by the designer or alternatively, by the wall builder" should be deleted as Acceptable Construction Manuals should not include other approval processes or determine liability.
- Clause 5.6.1 - This clause does not read right. Should "will" be deleted?

- Clause 5.6.1 Table 5.6.1 - refer to previous comment on inconsistency with 3.3.5.3 and structural stability issues.
- Clause 5.7.1 - This clause does not read right. Should "will" be replaced with "and"?
- Clause 5.7.1 Table 5.7.1 - refer to previous comment on inconsistency with 3.3.5.3 and structural stability issues.
- Clause 5.9.6 - Performance requirement. What mortar bed thickness is adequate?
- Clause 5.10.2 - does not read well. Delete "as".
- Clause 5.11.1 - Fixings should also be galvanised?
- Clause 5.11.3 - delete "(where deemed necessary)" as it does not add to the clause. If the panel is >900mm then reinforcement is required. Is this reinforcement required for all walls, or for non loadbearing walls or for loadbearing walls? Needs to be clarified.
- Clause 5.14 - Heading only with Explanation Note. Should this be a requirement?
- 5.17.2 - This clause requires a minimum of 100mm end bearing for lintels. For steel lintels this presumably only applies if the opening is <900mm as table 5.17.3 applies to other openings widths. What about timber and concrete lintels spanning these larger openings, should there not be similar tables? I note that Bulletin 5 suggests at least 225mm bearing each side for lintels. Is this minimum 100mm sufficient?
- 5.17.3 - Add before "lintels" the word "steel" to be consistent to the table. What about material compliance with the Australian Standards and the corrosive protection of lintels which we include in the BCA for lintel in masonry work?
- Clause 5.17.4 - performance requirement. What width should the gap be? Need to determine for compliance.
- 5.18 - Movement in Earth Walls - Heading, or should B, C, and D be requirement clauses? Explanatory Note A refers to *a need to limit cracks in a completed wall to a size and quantity that do not affect the structural integrity* yet no detail is included on how this can be achieved. How does a designer, building surveyor or client determine if a builder has complied? What size and quantity of cracks are acceptable? In Note C reference is made to vertical control joints but no detail is provided as to how or where they are required. In regulating other masonry walls, the BCA provides details of where articulated joints are required so why should we exclude then from this proposed Construction Manual?
- Clause 5.19.2 - performance clause. Supported on what and in what manner?
- 6.2.1 Explanatory Note - Replace "are" in first line with "may" to be consistent with 5.2.1.
- Clause 6.3.2 - This provision and the circumstance need a detail as it not clear, and noting that the footing and slab design have to comply with the BCA. What is meant by "suitably durable for the application"? How is a building surveyor going to determine compliance with this provision?
- Clause 6.4.1 - Should include a detail to show the installation. The BCA is not exactly clear in 3.3.4.1 and 3.3.4.9.
- Clause 6.4.2 - Table 6.4.2 - subclause a) is not in the BCA. Delete.
- Clause 6.4.2 - Table 6.4.2 - subclause e) is not the same as in the BCA. Needs to be checked in relation to Termite Provision and compliance. Reference to "as chosen by the designer or alternatively, by the wall builder" should be deleted as Acceptable Construction Manuals should not include other approval processes or determine liability.
- Clause 6.6.1 - Should this be similar to 5.6.1?
- Clause 6.6.1 Table 1.6.1 - refer to previous comment on inconsistency with 3.3.5.3 and structural stability issues.

- Clause 6.7.1 - Should this be similar to 5.7.1?
- Clause 6.7.1 Table 6.7.1 - refer to previous comment on structural stability issues.
- Clause 6.8.1 - performance clause. What must be the position?
- Clause 6.8.2 - performance clause. What is sufficient load bearing wall requirements?
- Clause 6.8.3 - What does "in a fashion" mean. This is not an appropriate word to be used in a technical regulation document.
- Clause 6.11.2 - Provides for timber lintels yet the Explanatory Note suggests it is not normal practice due to the instability of the timber. Either they are acceptable or they are not. If there is concern with the stability of the timber then they should not be used.
- Table 6.11.2 - includes DTS provisions for steel lintels including the opening size and end bearing size. What about timber and concrete lintels, should there not be similar tables? I note that Bulletin 5 suggests at least 225mm bearing each side for lintels. What about material compliance with the Australian Standards and the corrosive protection of lintels which we include in the BCA for lintel in masonry work?
- Clause 6.12.4 - No details of the control joints provided. Needs details similar to BCA for other masonry construction.
- 6.13 - Movement in Rammed Earth Walls - Heading, but only an Explanation Note or should some be requirement clauses? This Explanatory Note refers to the design and detailed drawing showing control and articulated joints yet no detail is included in the document of the specific requirements. How does a designer, building surveyor or client determine if a builder has complied? In Note D reference is made to shrinkage cracks being acceptable but no detail is provided as to the size and number that is acceptable.
- Clause 6.15 - Curing - Heading, but only an Explanation Note or should the requirement to let rammed earth walls dry out slowly be a clause requirement? For other construction material a drying time has been determined. If the experts cannot determine a drying time for inclusion in this document how can a designer specify one, or a builder allow for one or a Building surveyor determine compliance with one?
- Fire separation issues - There are no provisions in relation to the FRL properties of any of these walls so I presume that this type of construction cannot be used where a FRL is required unless an alternative solution is proposed and accepted.
- Sound insulation issues - Similar to fire separation, there are no provisions in relation to the sound level properties of this type of construction so I presume that this type of construction cannot be used in separating walls between dwellings unless an alternative solution is proposed and accepted.
- Energy efficiency - Building Fabric issues - Similar to fire and sound separation there are no R values included in the document for any of the wall thicknesses. This issue is different to the other two as it will be necessary for the R value to be available for the use of this type of construction. Surely there has been some tested results out there that could be included in the document for the wall thickness? Again without these R values the issue becomes an alternative solution rather than a DTS solution.

In conclusion, in my view this document needs a lot of work on it before we can include it in the BCA. Until that is done then we should leave Part 3.3.5 as it is.

Agenda Item 5 BCA 2008 – CONSIDERATION OF PUBLIC COMMENTS

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that BCC:

- Consider the responses received on the public comment draft of BCA 2008; and
- Note the timeframes for the finalisation of BCA 2008.

Background

The purpose of this agenda item is to review responses received on the public comment draft of BCA 2008.

At BCC 2006-3, as a result of feedback on the development process for BCA 2007, it was agreed that the ABCB Office would develop a "BCC draft" to assist BCC in considering the comments received on the public comment draft of BCA 2008. The basis of the BCC draft was to be the ABCB Office view on the responses received, as a basis for discussion at this meeting.

The BCC draft and documents containing responses to the public comment draft have been made available to BCC members. Members should ensure that they bring a copy of those documents to the meeting as they have not been reproduced in these papers.

BCA 2008 timeframes

The table below shows the timeframes for the finalisation of BCA 2008.

Date Action	
16-17 October	BCC meeting to consider responses on public comment draft.
26 October	Last day for S&T Administrations to submit changes to Appendices.
16 November	Pre-publication draft available for BCC consideration.
30 November	BCC agreement.
7 December	Board agreement.
29 January	Distribution of BCA 2008 to subscribers completed.
Feb-March	BCA 2008 seminars.
1 May	Date of operation of BCA 2008.

Decision

Agenda Item 6 UNIFORM STRUCTURAL RELIABILITY IN THE BCA

Contact Officer: [redacted] – ACEA

Recommendation

It is recommended that an appendix be developed and added to the PROTOCOL FOR THE DEVELOPMENT OF BCA REFERENCED DOCUMENTS, which sets out the criteria and nominates quantitative values or achieving uniformity of reliability in structures designed to BCA referenced documents.

Alternatively, a separate protocol could be developed.

Background

The ACEA has voiced concern over the apparent inconsistent reliability (levels of safety) implicit resulting from the combined use of:

- BCA,
- Australian loading standards (e.g. AS 1170, AS 4055),
- Australian structures standards (e.g. AS 4100, AS 3600, AS 3700, AS 1720, AS 1684 etc); or
- Industry prepared documents

Although the BCA specifies the probability of occurrence of loads and requires design to be based on a 95 percentile materials property, it does not specify what the relationship between the two of these should be. (Load factors and materials factors are both applied outside the framework of the BCA) Put simply, the BCA does not require the achievement of a consistent level of safety against collapse across all referenced documents.

With it increasing use of referenced documents, particularly those that are not Australian Standards, it is urgent that the ABCB incorporate into the BCA requirements for uniform reliability (overall safety) in all referenced structural documents.

The ACSE (structural branch of the ACEA) has commissioned Dr Lam Pham to prepare a study of the reliability implicit in the structural standards. This report is now available, and has been distributed to BCC members. The report could form the basis of the proposed Appendix to the Protocol.

Decision

Agenda Item: 7 FIRE RETARDANT COATINGS

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that BCC agree that:

- Volume One clause C1.10 (b) be amended to allow the use of fire retardant coatings to achieve required fire hazard properties. The wording of the proposed amendment, as well as the wording of a supporting Specification, is provided in Attachment A, and
- Volume Two clause 3.7.4.3 (b) be amended in order to provide a consistent approach to the new C1.10 (b) when pre-conditioning samples to be tested to AS3837. The wording of the proposed amendment is provided in Attachment A.
- A technical working group be established to deliberate on the need, scope and content of ancillary documentation to support the use of fire retardant coatings.

Background

A Consultation Paper (CP) proposing the use of fire retardant coatings to achieve required fire hazard properties was sent to the BCC in April 2007. The CP was generated in order to address recommendations arising from Fire Code Reform Centre Project 2 - Stage B-3 "*Testing and Regulation of Fire-retardant Coatings* " and the subsequent BRANZ report DC1003 "*Accelerated Weathering Protoc ols for Fire-retardant Timber Treated Timber*" 2005.

The CP response sheet advised that if no response was received, it was assumed the proposal was supported. Replies were received from 4 members. Of those, only 1 did not support the proposal.

An issue that drew some comment in replies was maintenance. In response, it is mentioned that BCA Table I1.1 currently includes "materials and assemblies *required* to have *fire hazard properties* ", i.e. all materials or assemblies complying with C1.10. In this context, materials and assemblies that use fire retardant coatings to achieve fire hazard properties would be included. As with all other items listed in Table I1.1, the scope of maintenance required would remain an administrative matter.

Another issue raised in comments was the proposed "Code of Practice", which was considered by some to be inappropriate for inclusion in the BCA. As a "Code of Practice" (or similar) was initially envisaged to be an integral part of the proposal, resolution of the need, scope and content of documentation to support the use of fire retardant coatings could be achieved through a technical working group that reports back to the BCC.

In light of the substantial support for the overall proposal, agreement to the scope of the BCA amendments prior to further deliberation on the need for ancillary documentation would provide the working group with a solid platform for the development of any documentation deemed necessary

Decision

FIRE RETARDANT COATINGS

(i) Amend Volume One C1.10 (b). The revised clause will state;

"Fire-retardant coatings may be used to make a substrate comply with the *required fire hazard properties* provided the coated substrate assembly has been subjected to accelerated weathering and durability conditioning as required by Specification C1.10b."

(ii) Amend Volume One by including a new Specification

Specification C1.10b – Fire-retardant Coatings

1. Scope

This Specification applies to fire-retardant coatings used to make a substrate comply with *required fire hazard properties*.

2. Preparation of specimens

Prior to testing fire-retardant coated substrates to AS/NZ3837, prepared specimens must be subjected to an accelerated weathering and durability conditioning regime relevant to the potential exposure of the in-situ coated substrate to weathering.

3. Internal fire-retardant coated substrates

Internal fire-retardant coated substrates must be pre-conditioned in accordance with the Pettitt and Routley[1] method of sample preparation.

1. Pettitt, M and Routley, A F. 1978. Procedure for assessing the change in flame spread characteristics of paints subject to washing. Fire and Materials Vol. 2 No 4: 177-183.

4. External fire-retardant coated substrates

External fire-retardant coated substrates must be pre-conditioned in accordance with ASTM D2898 Method B weathering regime, with the water flow rate modified to be the same as that within ASTM Method A.

(iii) Amend Volume Tw o 3.7.4.3 (b). After the current words "to the regime of ASTM D 2898 Method B" add the words; "with the water flow rate modified to be the same as that within ASTM Method A".

Agenda Item: 8 BUILDING IN FLOOD PRONE AREAS

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that:

- The BCC endorse option 3 of the Building in Flood Prone Areas consultation paper (previously distributed) as the preferred option; and
- The General Manager write to the Planning Officials Group (POG) and the Australian Local Government Association (ALGA) with details of ABCB research for their consideration.

Background

The consultation paper Building in Flood Prone Areas was distributed to the BCC on the 15 May for response by 27 June. An extension of time was provided to 6 July 2007.

Responses from the BCC indicated a clear preference for Option 3. A summary of received responses is included at Attachment A.

Option 3 is for POG and the ALGA to consider and provide recommendations to improve processes and procedures for designated flood prone areas at the Local Government level in a nationally consistent way and for the development of a National Flood Risk Management Guideline.

Option 3 provides a clear first step in providing a nationally consistent approach.

Decision

Building in Flood Prone Areas – Consultation paper responses

BCC RESPONSES RECEIVED

Options	Questions	YES	NO	Specific Comments
1	Do you generally agree with Option 1 to improve the process and procedures for developing and identifying the nominated flood levels, freeboard and fill levels in a nationally consistent way at the Local Government level through consideration and recommendations of POG and the ALGA within the COAG process?	**3**	**1**	General agreeance
2	Do you generally agree with Option 2 for the development of the National Flood Risk Management Guideline?	**1**	**3**	Some comments provided on merits and detriments of guidance or handbooks
3	Do you generally agree with Option 3 to combine Options 1 and 2 for POG and ALGA to consider and provide recommendations to improve processes and procedures for designated flood prone areas at the Local Government level in a nationally consistent way and for the development of a National Flood Risk Management Guideline?	**5**		Preferred option as a first step. Includes consistent approach to importance level of buildings, return periods, freeboard, fill levels, objective includes national consistency in process and application at Local Government level through POG and ALGA process. Expand for NFRAG and AEMC consideration.
4	Do you generally agree with Option 4 to provide advisory Appendices in the BCA referenced documents specifically for flood prone areas?		**3**	Not preferred as option
5	Do you generally agree with Option 5 for a non-regulatory document for Building in Flood Prone Areas?		**3**	Not preferred as option
6	Do you generally agree with Option 6 to remain with the status quo (do nothing)?		**3**	Not preferred as option
7	Are there other viable options than those described in this Consultation Document? Please provide details and impact justification.			Suggestion that the 100 year flood event and freeboard be considered for inclusion in the BCA. Principle similar to Bushfire Prone Areas.

Preferred Option: The preferred option is 3 with emphasis on a first step consideration by POG and ALGA to consider and provide recommendations to improve the processes and procedures for designated flood prone areas at Local Government Level for national consistency.

Agenda Item: 9 SALINITY

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC endorse option 1 of the Salinity consultation paper as the preferred option.

Background

The consultation paper on Salinity was distributed to the BCC on the 14 June for response by 30 July. An extension of time was provided to 3 September 2007.

Responses from the BCC indicated a clear preference for Option 1. A summary of received responses is included at Attachment A.

Option 1 is to amend referenced BCA standards including AS 3600 Concrete Structures, AS 2159 Piling and AS 2870 Residential Slabs and Footings to include technical solutions for construction in salinity affected soils.

Option 1 provides a clear first step in providing a nationally consistent approach.

Decision

Proposal for Salinity - Consultation paper responses

BCC RESPONSES RECEIVED

	Questions	YES	NO	Specific Comments
1	Do you generally agree with Option 1 to amend referenced BCA standards including AS 3600 Concrete structures, AS 2159 Piling and AS 2870 Residential Footings and Slabs to include technical solutions for construction in salinity affected soils?	**4**	**2**	Preferred option. Generally recognised that this process has already started. Some comments indicate that it is preferred to have mandatory technical provisions in the BCA rather than in Australian Standards. Suggested that the AS 2159 does not apply to detached houses, and that the scope should be extended to capture piles/piers for Class 1 & 10 buildings. Concern raised that some Local Government Councils have/are developing individual requirements, which affects national consistency.
2	Do you generally agree with Option 2 to include in the BCA, maps showing regions throughout Australia affected by salt attack and specific technical provisions to reduce the risk of damage to buildings caused by saline soils? The provisions would apply only to the building work in affected areas.	**1**	**5**	Same comments suggest that salinity is more prevalent in localised areas therefore map development & maintenance should be Local Authorities responsibility. Some comments indicate that there is more information and mapping available which could be included as references in BCA, as a long-tem goal.

3	Do you generally agree with Option 3 to develop salt attack provisions for inclusion in the BCA? Provisions would be applicable when a building is considered susceptible to salt attack, similar to the termite provisions.	**3**	**3**	Concerns raised that the Approval Authorities would require construction to the highest level. Some comments suggested that the salinity issue needs to be handled similarly to the bushfire-prone areas rather than the termite provisions.
4	Do you generally agree with Option 4 to develop salt attack provisions for inclusion in the BCA? Provisions would be applicable to all buildings without determining whether they would be susceptible to salt attack.	**2**	**5**	Suggestion that there is no evidence shown to what extent the current provisions are not adequate. Definite proposal of salinity provisions should be provided to enable selection.
5	Do you generally agree with Option 5 that each State and Territory deals with building within their jurisdictions through planning and development controls, and management and construction guidelines?	**1**	**5**	Noted that this process has already started.
6	Do you generally agree with Option 6 to remain with the status quo?	**1**	**5**	Some comments indicate that there is no need to change current BCA or State variation requirements.
7	Are there other viable options than those described in this Consultation Document? Please provide details and impact justification.	**3**	**2**	Suggestion to include only performance requirements in the BCA to avoid disadvantaging alternative, innovative and new technologies. Another respondent suggested inclusion of provisions in BCA and further deliberation on extent of application to buildings.

Preferred Option: Based on the seven responses received, the preferred Option is 1. It has been recognised that process outlined in Option 1 is already occurring, and once it is completed it will provide nationally accepted Deemed-to-Satisfy technical solutions, provided that the relevant Australian Standards are aligned with each other.

Agenda Item: 10 ACID SULPHATE SOILS

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC endorse option 1 of the Acid Sulphate Soils consultation paper as the preferred option.

Background

The consultation paper on Acid Sulphate Soils was distributed to the BCC on the 14 June for response by 30 July. An extension of time was provided to 3 September 2007.

Responses from the BCC indicated a clear preference for Option 1. A summary of received responses is included at Attachment A.

Option 1 is to amend referenced BCA standards including AS 3600 Concrete Structures, AS 2159 Piling and AS 2870 Residential Slabs and Footings to include technical solutions for construction in acid sulphate affected soils.

Option 1 provides a clear first step in providing a nationally consistent approach.

Decision

Proposal for Acid Sulphate Soils - Consultation paper responses

BCC RESPONSES RECEIVED

Questions		YES	NO	Specific Comments
1	Do you generally agree with Option 1 to amend referenced BCA standards including AS 3600 Concrete structures, AS 2159 Piling and AS 2870 Residential Footings and Slabs to include and or clarify better technical solutions for construction in ASS?	**5**	**2**	Preferred option. Generally recognised that this process has already started. Some comments indicate that it is preferred to have mandatory technical provisions in the BCA rather than in Australian Standards. Suggested that the AS 2159 does not apply to detached houses, and that the scope should be extended to capture piles/piers for Class 1 & 10 buildings in order to align with AS 3600 & AS 2870, to minimise confusion. Concern raised that some Local Government Councils have/are developing individual requirements, which affects national consistency.
2	Do you generally agree with Option 2 to include in the BCA, maps showing regions throughout Australia affected by ASS and specific technical provisions to reduce the risk of damage to buildings caused by ASS. The provisions would apply only to the building work in affected areas?	**0**	**6**	Not preferred as option. Some comments indicate that there is more information and mapping available which could be included as references in BCA, as a long-tem goal. Other comments include that ASS is more prevalent in localised areas therefore map development & maintenance should be Local Authorities responsibility.
3	Do you generally agree with Option 3 to develop ASS provisions for inclusion in the BCA. Provisions would be applicable when a building is considered susceptible to ASS, similar to the termite provisions?	**3**	**4**	Some comments provided suggested that the ASS issue needs to be handled similarly to the bushfire-prone areas rather than the termite provisions. Concerns raised that the Approval Authorities would require construction to the highest level.

4	Do you generally agree with Option 4 to develop ASS provisions for inclusion in the BCA. Provisions would be applicable to all buildings without determining whether they would be susceptible to ASS?	**0**	**6**	Not preferred as option. Suggestion that there is no evidence shown to what extent the current provisions are not adequate. Definite proposal of ASS provisions should be provided to enable selection.
5	Do you generally agree with Option 5 to remain with the status quo and acknowledge that each State and Territory would if necessary, deal with building within their jurisdictions through planning and development controls, and management and construction guidelines?	**2**	**4**	Noted that this process has already started. Some comments provided that there could be an issue of Local Government introducing their own technical provisions which could lead to nationally inconsistent requirements. It has been recognised that by identification of sites affected by ASS on a local level with construction requirements contained in standards would provide flexibility without creating inconsistencies.
6	Develop an informative handbook to provide advice on building in areas subject to ASS	**4**	**2**	General agreeance. Suggestion that it would be beneficiary to develop the guidelines without delay for use by industry.
7	Are there other viable options than those described in this Consultation Document? Please provide details and impact justification.	**2**	**3**	Suggestion to include only performance requirements in the BCA to avoid disadvantaging alternative, innovative and new technologies. Another respondent suggested inclusion of provisions in BCA and further deliberation on extent of application to buildings and further research.

Preferred Option: Based on the eight responses received, the preferred Option is 1. It has been recognised that process outlined in Option 1 is already occurring, and once it is completed it will provide nationally accepted Deem-to-Satisfy technical solutions, provided that the relevant Australian Standards are aligned with each other.

Agenda Item: 11 CLASS 1B & 3 BUILDINGS - CLASSIFICATION AND USE

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC:

- Endorse that Option 3 is the most preferred option.
- Consider 2 additional options provided by respondents.

Background

The consultation paper on Class 1b and 3 Buildings – Classification and Use was distributed to the BCC on the 19 June 2007 for response by 20 August 2007. An extension of time was provided to 6 September 2007.

BCC responses (Attachment A) have indicated that the preferred Option is Option 3. Option 3 is to clarify Class 1b building definition to include accommodation for the aged, children and people with disabilities and to retain the current 1b provisions. One respondent added the clarification where the age or disability does not impair their ability to evacuate themselves in the case of an emergency.

Option 1 to delete Class 1b classification from Volumes One and Two and include a boarding-house, guest house, hostel, lodging-house or backpacker's accommodation under Class 3 buildings in Volume One was generally not supported.

Option 2 to include "residential care buildings" in both Volume One and Two to include accommodation for the aged, children and people with disabilities in Class 1b buildings and to retain the current 1b provisions as a concession and Option 4 to stay with the status quo (do nothing) were not supported.

One additional option was proposed by a respondent that included expansion of Class 3 in Volume One only, which would permit more economical construction to accommodate the aged, children and persons with a disability where the building is not greater than 300m² and accommodates no more than 12 people. This option would shift the emphasis into Class 3 buildings for particular occupants and maintain legal interpretation as provided in Victoria for use of Class 1b's.

Another additional option was proposed by a respondent to amend the current definition of a residential aged care building as follows: A Residential Care Building means a Class 9c building used for residential accommodation for persons who, due to varying degrees of incapacity associated with either the ageing process or a disability are provided with personal care services and 24 hour assistance to evacuate the building during an emergency.

Decision

ATTACHMENT A

Class 1b and Class 3 Buildings – Classification & Use – Consultation paper responses

BCC RESPONSES RECEIVED

Questions		YES	NO	Specific Comments
1	Do you generally agree with **Option 1** to delete the Class 1b classification from Volumes One and Two, and include a boarding-house, guest house, hostel, lodging-house or backpacker's accommodation under Class 3 buildings in Volume One?	**2**	**4**	Two of the respondent's preferred option. Requires Class 3 buildings to have the additional fire requirements over a Class 1b. This option, if successful would require a substantial amount of work to have it located in the existing Class 3 classification. A RIS may have to be prepared as the impact of fire and access requirements will place a cost burden on the establishment of these buildings.
2	Do you generally agree with **Option 2** to include "residential care buildings" in both Volume One and Two to include accommodation for the aged, children and people with disabilities in Class 1b buildings and to retain the current 1b provisions as a concession?	**1**	**6**	Not a preferred option
3	Do you generally agree with **Option 3** to clarify Class 1b building definition to include accommodation for the aged, children and people with disabilities and to retain the current 1b provisions?	**3**	**4**	Most preferred option. One respondent recommended that the definition be more clearly noted that occupation includes the aged, children and people with disabilities where the age or disability does not impair ability to evacuate themselves in the case of an emergency. This option could be implemented with minimal change to the BCA and generally reflects what is happening with use of Class 1b buildings.
4	Do you generally agree to stay with the status quo (do nothing)?	**0**	**6**	Not a preferred option.

5	Are there other viable options than those described in this consultation paper? Please provide details and impact justification.	**2**	**3**	This option allowed BCC Members to put forward a range of alternative options. A further option could be to amend the current definition of A residential Aged Care Building as follows: A ***Residential Care Building*** means a Class 9c building used for residential accommodation for persons who, due to varying degrees of incapacity associated with either the ageing process or a disability are provided with personal care services and 24 hour staff assistance to evacuate the building during an emergency. --- An expansion of **Class 3** in **Volume One** only which would permit more economical construction to accommodate the aged, children and persons with a disability where the building is not greater than 300m^2 and accommodates no more than 12 people.

Agenda Item: 12 CLASS 2 & 3 BUILDING CLASSIFICATION AND USE

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC consider the outcomes of the Consultation Paper options.

Background

The consultation paper on Class 2 and 3 Buildings – Classification and Use was distributed to the BCC on the 4 July 2007 for response by 12 September 2007.

Option 1 to indicate/emphasise that Class 2 buildings are primarily intended to be designed, constructed and used as a dwelling where occupants are in continual or habitual residence was supported by 2 respondents.

Option 2 to maintain the status quo (do nothing) was not supported.

Option 3 to amend the present definition of a Class 2 building to include "short term" accommodation was not supported.

Option 4 to include other viable options than those described was preferred by 4 respondents, however the additional options were all different including:

- Include serviced apartment in the definition of a Class 3 building
- Introduce long and short term accommodation based on a percentage (20%) of the number of units within the building or complex.
- In the BCA definition of Class 3 building delete all of (a) except for backpackers accommodation and relocate into the Class 2 Building Classification.
- Include within A1.1 a definition of serviced apartment. '***Serviced apartment*** *means a building providing self-contained tourist and visitor accommodation that is regularly serviced or cleaned by or on behalf of the owner or manager of the building.'* In addition, a further minor amendment is required to Clause F4.1 'Provision of natural light' to ensure that habitable spaces other than bedrooms in serviced apartments such as kitchens and living rooms are provided with natural light.

  The amendment to require natural light to all habitable rooms in serviced apartments is required as this type of accommodation is generally different from hotels and motels – in that the length of stay in serviced apartments is generally of a longer duration compared to that in hotels and motels. Natural light is considered necessary in spaces where extended stays or use is undertaken.

  The following amendment is suggested:

  F4.1 Provision of natural light

  Natural lighting must be provided in:

  (a) Class 2 buildings and Class 4 parts of buildings — to all habitable rooms.

  (b) Class 3 buildings — to all bedrooms and dormitories ***and in sole occupancy units of serviced apartment buildings to all other habitable rooms****.*

  (c) Class 9a and 9c buildings — to all rooms used for sleeping purposes.

(d) Class 9b buildings — to all general purpose classrooms in primary or secondary <u>schools</u> and all playrooms or the like for the use of children in an <u>early childhood centre</u>

- Suggested that consideration should be given to a possible intermediate 'Class 2b' building classification that requires compliance with standards more stringent than those currently applicable to Class 2 buildings, yet not as stringent as those currently applicable to Class 3 buildings. This suggestion will require further investigation and analysis before contemplating implementation. Stakeholders would also need to be consulted.

<u>Decision</u>

ATTACHMENT A

Class 2 and Class 3 Buildings – Classification & Use – Consultation paper responses

BCC RESPONSES RECEIVED

Questions		YES	NO	Specific Comments
1	Do you generally agree with **Option 1** to indicate/emphasise that Class 2 buildings are primarily intended to be designed, constructed and used as a dwelling where occupants are in continual or habitual residence? Clarification to be included in the definition, i.e. long term, live-in tenure. Maintain the present definition of a Class 3 building.	**2**	**4**	Two of the respondent's preferred option
2	Do you generally agree with **Option 2** to maintain the present status quo, (do nothing)? This will permit these types of accommodation buildings to be located in accordance with State/Territory Planning Schemes as presently exists.	**1**	**4**	Not a preferred option
3	Do you generally agree with **Option 3** to amend the present definition of a Class 2 building to include “short term” accommodation?	**1**	**3**	Not a preferred option. One respondent questioned the issue between long and short stay. The issue from a long term tenant's view is exactly that; short stay. Their complaint stems from the fact that the short term holiday stay creates additional noise and restricts access to facilities ie swimming pool, tennis courts gyms etc.

4	Are there other viable options than those described in this consultation paper? Please provide details and impact justification.	**4**	**1**	Generally preferred option. The respondents have submitted a number of options for consideration. • include "Serviced Apartment" in definition of a Class 3 building • Except for *backpackers accommodation*, delete all of (a) in existing Class 3 and relocate into the Class 2 classification. It could therefore be possible to clearly separate very specific uses from general accommodation use. • Introduce "long and short term" on a percentage of the number of units in the complex.

Note: Not all respondents indicated yes or no to options.

Agenda Item: 13 QUANTIFICATION OF PERFORMANCE

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC note the progress of the Quantification of Performance project elements and proposed BCC consideration of assessments.

Background

The Quantification of Performance project is included in the 2007/8 ABCB work plan. The project had its catalyst in the recommendations of the NSW Report Upon the Quality of Buildings (2002) and the Productivity Commission (PC) research report on Reform of Building Regulation that included a recommendation that: *The ABCB should enhance efforts to make the performance-based requirements in the BCA more effective. This should include providing measurable criteria to aid judging compliance and clarifying the assessment process to be used.*

A protocol was developed in 2005 through the Core Strategic Group and Dr Brian Meacham to assess the current BCA provisions. 13 areas in each BCA Volume were trialled in 2006. Work in the area of quantification of performance includes, where practical, identifying the measurable performance criteria and including in the highest practical level of the performance hierarchy. This includes verification methods where possible and clarification of performance.

Current Situation 2007/8 Workplan

Storm Water: Considered at the March 2007 National Technical Summit and BCC meeting. A verification method and clarification of surface water is being developed for BCC consideration.

Glass Human Impact: A verification method is being developed for the BCA. Clarification of the Performance Requirement is being developed for BCC consideration.

Sound Transmission: Currently being assessed for verification methods on impact for walls. The verification method in the BCA is only for impact on floors by way of a site test. Tests are under review. External noise is a current BCA scoping study.

Fire Hazard Properties: Currently being assessed. There are two tests with different measures. It is difficult to assess composite materials by a suitable test. The Standards committee is reviewing tests suitable for composite materials. Clarification is necessary in some of the provisions.

Fire Safety including Occupant Egress: Currently being developed.
The ABCB is working with [redacted] to develop the possible quantification of the load side of fire safety including fire loads, design fires, fire scenarios, ASET>RSET including factor of safety. It is suggested that a green field approach would be the most beneficial method to develop appropriate provisions. This topic formed the Clarity in Performance workshop on Tuesday 25 September at the ABCB Conference.

Maintenance: Currently being assessed, however administered by State and Territory administrations. Not quantified in measurable criteria in the BCA. There may be option to consider deletion from the BCA.

Indoor Air Quality: See Agenda Item 14

Emergency Lighting: Currently being assessed. The Performance criterion is measurable but is in a referenced Standard. A verification method could be included in the BCA and could include scope for low level lighting or photo luminescent material. Would require consideration of Performance Requirement clarification and amended DTS provisions for new technology

Lighting: Currently being assessed. A verification method can be included in the BCA. Overlap of Occupational Health and Safety (workplace safety) and BCA provisions (amenity) to be clarified and/or consideration of amended provisions. State and Territories at various levels (OH&S Acts, Regulations, Guidelines, State Variations et al) call up variations of AS/NZS1680. On this basis there is consideration not to include lighting as amenity in the BCA. Should sustainability measures include indoor environment quality (IEQ) then lighting should be retained in the BCA as amenity.

Room Sizes: It was found that many other acts and regulations including planning at Local Government level control room heights in excess of the minimum BCA standard. Hence concern was expressed that should the BCA take room heights out of the BCA other authorities may include their own provisions revolving back to inconsistency and further duplication. Ceiling Heights remain in the BCA.

Structural Safety: Currently being assessed. Not all actions are listed or clarified in performance. Reliability currently includes the five percentile characteristic material property for structural resistance. Reliability is a difficult term to include for all materials. Structural Safety requires further work.

Agenda Item: 14 INDOOR AIR QUALITY

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC endorse the second phase indoor air quality (IAQ) research to determine amenity performance criteria for all enclosed spaces in buildings using minimum outdoor air rates and Carbon Dioxide (CO_2) as a metric.

Background

The Quantification of Performance project is included in the 2007/8 ABCB work plan. The project had its catalyst in the recommendations of the NSW Report Upon the Quality of Buildings (2002) and the Productivity Commission (PC) research report on Reform of Building Regulation (2004) that included a recommendation: *The ABCB should enhance efforts to make the performance-based requirements in the BCA more effective. This should include providing measurable criteria to aid judging compliance and clarifying the assessment process to be used.*

Current Situation 2007/8 Workplan

Indoor Air Quality: Assessment of BCA provisions for ventilation was carried out in 2006. A preliminary impact assessment has been prepared and a technical paper drafted for BCC information. The current BCA provisions address the amenity of indoor air quality without specifying the minimum Performance Requirements. The BCA references AS1668.2 – 1991 and assumes that by introducing outside air, any non-hazardous contaminants are diluted to acceptable levels.

Controlling particular contaminants would enable better apportionment of outside air flow for occupant density, improving energy efficiency and life cycle benefits. It is anticipated that during the building life, the indoor air quality measures would allow the outside air rate to be adjusted as occupancy populations vary and contaminants change. It is expected that long term variations will reduce outside air rates that will save energy without affecting amenity.

The quality of air can be maintained in a number of ways such as filtration, non-hazardous contaminant collection and scrubbers.

At this stage, one of the main contaminants being examined is $C0_2$. Further examination of the other main contaminants is necessary to determine the measures to be considered in Performance.

A Draft Consultation Paper (Attachment A) is attached for information.

Contaminants proposed to be considered for control are as follows.

Proposal for Acceptable Indoor Air Quality

Pollutant Av	eraging Time	Air Quality Guideline value
Carbon Dioxide	8 hours	1,000 ppm as body odour metric
Carbon Monoxide	15 minutes 30 minutes 1 hour 8 hours	90 ppm 50 ppm 25 ppm 10 ppm
Formaldehyde	30 minutes	0.1 mg/m^3
Lead	1 year	0.5 $\mu g/m^3$
Nitrogen dioxide, NO_2	1 year 1 hour	40 $\mu g/m^3$ 200 $\mu g/m^3$
Ozone, O_3	8 hour, daily maximum	100 $\mu g/m^3$
Particulate matter $PM_{2.5}$ PM_{10}	 1 year 24 hour (99^{th} percentile) 1 year 24 hour (99^{th} percentile)	 10 $\mu g/m^3$ 25 $\mu g/m^3$ 20 $\mu g/m^3$ 50 $\mu g/m^3$
Sulfur dioxide, SO_2	24 hour 10 minute	20 $\mu g/m^3$ 500 $\mu g/m^3$
Total Volatile Organic Compounds	1 hour	500 $\mu g/m^3$

Decision

Attachment A

Australian Building Codes Board

INDOOR AIR QUALITY

CONSULTATION PAPER

May 2007

CONTENTS

1. Introduction

This Consultation Paper examines and analyses issues associated with indoor air quality in relation to outside air ventilation of buildings. The Building Code of Australia (BCA) Performance Measures require that "a space in a building used by occupants must be provided with means of ventilation with outdoor air which will maintain adequate air quality". The minimum acceptable requirements for "adequate indoor air quality" are not defined. This Consultation Paper proposes minimum criteria for that definition that can quantified and verified and that can provide a positive net benefit for air quality, energy savings, and sustainability measures.

This proposal is part of the Quantification of Performance Requirements for the BCA. Quantification will allow Verification Methods, that satisfy the Performance Requirements, to be developed in addition to the Deemed-to-Satisfy provisions. The Verification Methods will allow applications to maintain minimum acceptable indoor air quality through processes that use minimum energy and that address important sustainability issues of indoor environment.

Responses to the options are sought. The Quantification of Performance Measures project is part of the Australian Building Codes Boards (ABCB) 2007/2008 work plan and ongoing improvements in the built environment and BCA provisions.

Under the Inter-Government Agreement (IGA) all options and proposals must be tested against the Council of Australian Governments (COAG) (2004) Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies for any work associated with building reform. These can be found at www.coag.gov.au

For any technical building reform the ABCB must through consultation consider the range of feasible policy alternatives including non-regulatory, self-regulatory, co-regulatory and regulatory options, within a net benefit framework and Government objectives. This Consultation Paper includes consideration of these policy options.

Members of the Clean Air Society of Australia and New Zealand (CASANZ) and members of Standards Australia sub-committee ME-062-02 (AS1668.2) have reviewed the proposal and provided constructive input. In the majority, they concur with the proposal for defining minimum acceptable indoor air quality requirements and have offered some alternatives to the proposed level of CO_2 in the indoor environment.

2. Background

Under a Review of the Performance Measures in September 2006, quantification of ventilation requirements was identified as one of maintaining acceptable indoor air quality for building occupants. Acceptable indoor air quality (IAQ) is more stringent than the requirement of maintaining safe indoor air quality. Safe indoor air quality is regulated under Occupational Health and Safety criteria in each jurisdiction.

Acceptable indoor air quality is a term to describe the situation where the pollutant concentrations are within the recommended goals and the majority of the occupants (80% or more) do not suffer any significant discomfort from the conditions in the internal environment.

The present BCA requirements for ventilation of spaces in Classes 2 to 9 are set out in Volume One clause FP4.3, and detailed in F4.5, and for Class 1 and 10 buildings set out in Volume Two clause P2.4.5, and detailed in clauses 3.8.5.0 and 3.8.5.2.

Clause F4.5 of Volume One requires that mechanical ventilation complies with AS1668.2 – 1991 and that natural ventilation, the detail of which is shown in clause F4.6, has a permanent opening of not less than 5% of the floor area of the room required to be ventilated. The subsequent clauses F4.6 and F4.7 provide further detail on the opening and ventilation characteristics.

Clause 3.8.5.0 of Volume Two also references AS1668.2 for mechanical ventilation and clause 3.8.5.2 describes the minimum requirements for natural ventilation. Broadly, a space may be naturally ventilated if the openable size of the permanent opening is to be not less than 5% of the floor area of the room to be ventilated. The clause also describes additional requirements for natural ventilation of adjoining spaces.

Clauses Volume One F4.5 and Volume Two clauses 3.8.5.0 and 3.8.5.2 are Deemed to Satisfy provisions for mechanical or natural ventilation for acceptable indoor air quality

In both Volume One and Volume Two acceptable indoor air quality is assumed to be provided by dilution of indoor air pollutants through the addition of outdoor air either through mechanical or natural ventilation.

Outdoor Air Quality

The National Environment Protection (Ambient Air Quality) Measure (AAQ NEPM), as amended 2003, sets out minimum standards for ambient (i.e. outdoor) air quality. This act is the outcome of an Intergovermental Agreement on the Environment. The Australian and the States and Territories Governments have adopted and implemented the AAQ NEPM. Under the AAQ NEPM there are minimum standards for six pollutants, viz., carbon monoxide, nitrogen dioxide, photochemical oxidants (as ozone), sulfur dioxide, lead and 10 micron particulates (PM_{10}) . There is also a goal level for 2.5 micron particulates ($PM_{2.5}$) .

Extract from the AAQ NEPM on the Schedule Standards and Goal for Pollutants are shown below.

The NEPM Standard is the minimum acceptable quality of outdoor air.

Standards and Goal for Pollutants other than Particles as $PM_{2.5}$

Item	Pollutant	Averaging period	Maximum concentration	Goal within 10 years (Maximum allowable exceedences)
1	Carbon monoxide	8 hours	9.0 ppm	1 day a year
2	Nitrogen dioxide	1 hour 1 year	0.12 ppm 0.03 ppm	1 day a year None
3	Photochemical oxidants (as ozone)	1 hour 4 hours	0.10 ppm 0.08 ppm	1 day a year 1 day a year
4	Sulfur dioxide	1 hour 1 day 1 year	0.20 ppm 0.08 ppm 0.02 ppm	1 day a year 1 day a year None
5	Lead	1 year	0.50 µg/m³	None
6	Particles as PM_{10}	1 day	50 µg/m³	5 days a year

Advisory Reporting Standards and Goal for Particles as PM2.5

Pollutant1	Averaging Period	Maximum Concentration	Goal
Particles as $PM_{2.5}$	1 day 1 year	25 µg/m³ 8 µg/m³	Goal is to gather sufficient data nationally to facilitate a review of the Advisory Reporting Standards as part of the review of this Measure scheduled to commence in 2005

Note: ppm – parts per million and µg/m³ - micrograms per cubic metre, are set at 101.3 kPa and 0^{o}C.

For the purposes of this Measure the following definitions shall apply:

(1) Lead sampling must be carried out for a period of 24 hours at least every sixth day.

(2) Measurement of lead must be carried out on Total Suspended Particles (TSP) or its equivalent.

(3) In Column 3, the averaging periods are defined as follows:

- 1 hour clock hour average
- 4 hour rolling 4 hour average based on 1 hour averages
- 8 hour rolling 8 hour average based on 1 hour averages
- 1 day calendar day average
- 1 year calendar year average

(4) In Column 5, the time periods are defined as follows:

- day - calendar day during which the associated standard is exceeded
- year - calendar year.

(5) All averaging periods of 8 hours or less must be referenced by the end time of the averaging period. This determines the calendar day to which the averaging periods are assigned.

(6) For the purposes of calculating and reporting 4 and 8 hour averages, the first rolling average in a calendar day ends at 1.00 am, and includes hours from the previous calendar day.

(7) The concentrations in Column 4 are the arithmetic mean concentrations.

For the year 2004 (the last NEPM report for all the Jurisdictions of Australia) the quality of ambient air within the NEPM standards for the six criteria pollutants at all NEPM sites in Australia was as follows.

	CO	**NO_2**	**O_3**	**SO_2**	**Lead**	**PM_{10}**
No of sites	24	48	54	44	8	59
% of time AAQ Meets NEPM	100%	100%	>99.999%	>>99.999%	100%	> 99.995%

The table shows the high levels of compliance reached for the minimum outdoor air requirements. Uniform minimum outside air conditions provides a platform to use dilution ventilation, without the need to treat outside air except for particle filtration, to achieve minimum acceptable indoor air quality.

Indoor Air Quality (IAQ)

In indoor environments, pollutants emitted become concentrated unless they are diluted by the addition of outside air or removed by some other process eg. exhausted through a chimney or adsorption on a surface. Where the pollutants are toxic, the exposure levels must not be greater than described in OH&S regulations or practice guidelines.

Indoor air quality guidelines in buildings are generally based by consideration of the occupants likely to be exposed. For industrial exposures where the workforce is expected to be adult, healthy and working for 8 hours a day over 5 days a week the ASHRAE Standards (See below) are appropriate. However in public places, offices and homes the occupants are expected to include the very young, the elderly and the infirm and these workplace Standards are not appropriate. In indoor environments, guidelines adopted are generally akin to ambient quality standards which are frequently much more stringent than ASHRAE standards. The WHO guidelines, which are applied indoors and outdoors, and the Canadian IAQ guidelines generally set pollutant levels similar to those in the NEPM (outdoor) Standards.

BCA2006

BCA2006 provides a minimum outdoor air rate regulation as per the schedules in AS1668.2 – 1991. AS1668.2 assumes that dilution of the indoor air by the outdoor air will provide minimum acceptable IAQ. BCA and AS1668.2 do not attempt to define the quality of indoor air that will provide the minimum acceptable quality.

There are some limitations in attempting to control IAQ by regulating the minimum quantity of outdoor air, viz.,

a) the quality of the outdoor air cannot be assumed to be better than that of the indoor air;

b) the quantity of outdoor air may be insufficient to meet the proposed guideline value requirements; and

c) the quantity of dilution outdoor air may be more than necessary to achieve the proposed guideline value requirement and so may adversely affect the energy use of the air conditioning system(s).

Canada

Canada has guidelines for IAQ in residential buildings based on exposure levels of ten specific pollutants. The pollutant levels are shown in their current 1995 "Exposure Guidelines for Residential Indoor Air Quality". The table below is the summary, excluding radon, of the exposure ranges extracted from the guideline.

Extract from Canadian 1995 Exposure Guidelines for Residential Indoor Air Quality

Contaminant Acceptable	Short Term Exposure Range	Acceptable Long Term Exposure Range
Aldehydes (total)	$\Sigma c_i/C_i \leq 1$(a)	–
Carbon Dioxide	–	$\leq$ 6300 mg/m^3 ($\leq$3500 ppm)
Carbon Monoxide	$\leq$ 11 ppm – 8 h(b)	–
	$\leq$ 25 ppm – 1 h(b)	
Formaldehyde	(c)	(d)
Nitrogen Dioxide	$\leq$ 480 g/m^3 ($\leq$ 0.25 ppm) – 1 h	$\leq$ 100 g/m^3 ($\leq$0.05 ppm)
Ozone	$\leq$ 240 μg/m^3 ($\leq$ 0.12 ppm) – 1 h	–
Particulate Matter(e)	$\leq$ 100 μg/m^3 – 1 h	$\leq$ 40 μg/m^3
Sulphur Dioxide	$\leq$ 1000 μg/m^3 ($\leq$ 0.38ppm) – 5 min	$\leq$ 50 μg/m^3 ($\leq$ 0.019 ppm)
Water Vapour	30-80% R.H. N summer 30-55% R.H. N winter(f)	–

Notes

a Ci = 120 mg/m^3 (formaldehyde); 50 mg/m^3 (acrolein); 9000 mg/m^3 (acetaldehyde), and c_i are respective concentrations measured over a five-minute period.

b Units given only in parts per million so that guidelines are independent of ambient pressure.

c See Aldehydes (total).

d Formaldehydes are not given short or long term exposure limits but rather have an achievable present exposure limit of $\leq$120 μg/m^3 (0.10ppm) and a long term objective exposure level of $\leq$60 mg/m^3 (0.05ppm).

e < 2.5 um mass median aerodynamic diameter (MMAD).

f Unless constrained by window condensation.

In April 2006 the Canadian exposure guidelines for formaldehydes were changed such that the one hour exposure limit is $\leq$123 μg/m^3 ($\leq$100ppb) and the eight hour exposure limit is $\leq$50 μg/m^3 ($\leq$40ppb).

United States of America

USA has "enforceable regulatory standards" set by the Occupational Safety and Health Administration (OSHA) for IAQ. The maximum exposure levels are set out in the US Department of Labor Regulation 29 CFR 1910.1000, *Occupational Safety and Health standards: Air contam inants*. The levels are set for all known contaminants. The range of air contaminants is exhaustive.

The ANSI/ASHRAE Standard 62.1-2004 has a 2006 Addendum that provides a comparison table of the regulations and guidelines relevant to indoor environments. A copy of the comparison table is shown following.

The following are notes that apply to the table.

a Numbers in brackets [ ] refer to either a ceiling or to averaging times of less than or greater than eight hours (min = minutes; h =hours; y =year; C =ceiling, L =long-term). Where no time is specified, the averaging time is eight hours.

b Target level is 0.05 ppm because of its potential carcinogenic effects. Total aldehydes limited to 1 ppm. Although the epidemiological studies conducted to date provide little convincing evidence that formaldehyde is carcinogenic in human populations, because of this potential, indoor levels should be reduced as much as possible.

c As one example regarding the use of values in this table, readers should consider the applicability of carbon monoxide concentrations. The concentrations considered acceptable for non-industrial, as opposed to industrial, exposure are substantially lower. These lower concentrations (in other words, the ambient air quality standards, which are required to consider populations at highest risk) are set to protect the most sensitive subpopulation, individuals with pre-existing heart conditions.

d MMAD = mass median aerodynamic diameter in microns (micrometers). Less than 3.0 µm is considered respirable; less than 10 µm is considered inhalable.

e Nuisance particles not otherwise classified (PNOC), not known to contain significant amounts of asbestos, lead, crystalline silica, known carcinogens, or other particles known to cause significant adverse health effects.

f See Table B-2 for the U.S. EPA guideline.

g Not to be exceeded more than once per year.

h The U.S. Department of Housing and Urban Development adopted regulations concerning formaldehyde emissions from plywood and particleboard intended to limit the airborne concentration of formaldehyde in manufactured homes to 0.4 ppm. (24 CFR Part 3280, HUD Manufactured Home Construction and Safety Standards)

i Never to be exceeded.

j Carcinogen, no maximum values established.

k Threshold Limit Value (TLV®) for heavy work.

l TLV® for moderate work.

m TLV® for light work.

n TLV® for any work = less than or equal to two hours.

o 62FR38652 - 38760, July 16, 1997.

p Epidemiological studies suggest a causal relationship between exposure to formaldehyde and nasopharyngeal cancer, although the conclusion is tempered by the small numbers of observed and expected cases. There are also epidemiological observations of an association between relatively high occupational exposures to formaldehyde and sinonasal cancer.

Subsequent to this study we have received the following advice from Richard Bukowski of the National Institute of Standards and Technology (NIST). His advice is quoted verbatim.

"NIST began to work through ASHRAE several years ago to develop a performance basis for IAQ regulation. Under the chairmanship of [redacted] *(Head of BFRL's Indoor Air Quality and Ventilation Group) ASHRAE 62.1 incorporated a performance option that is intended to regulate for limiting contaminant concentrations rather than ventilation rates. There is general consensus that this is the correct performance metric. The problem is to achieve consensus on the list of contaminants and their limiting concentrations for long-term exposure.*

NIST has been working to develop the tools to make the performance option in ASHRAE 62.1 practical. The approach is to develop an initial list of contaminants and to quantify their release rates from common products. Also, there needs to be a limiting concentration for each contaminant based on health effects or just being objectionable or uncomfortable. One also needs to consider contaminants that produce allergic reactions in some fraction of the population. The fraction affected that results in regulation is a public policy decision."

Extract from ANSI/ASHRAE Standard 62.1 Addendum

(Note: Radon is not considered in this proposal)

	Enforceable and/or Regulatory Levels			Non-Enforced Guidelines and Reference Levels			
	NAAQS/EPA (Ref. B-4)	OSHA (Ref. B-5)	MAK (Ref. B-2)	Canadian (Ref. B-8)	WHO/Europe (Ref. B-11)	NIOSH (Ref. B-13)	ACGIH (Ref. B-1)
Carbon dioxide		5,000 ppm	5,000 ppm 10,000 ppm [1 h]	3,500 ppm [L]		5,000 ppm 30,000 ppm [15 min]	5,000 ppm 30,000 ppm [15 min]
Carbon monoxide [c]	9 ppm [g] 35 ppm [1 h] [g]	50 ppm	30 ppm 60 ppm [30 min]	11 ppm [8 h] 25 ppm [1 h]	90 ppm [15 min] 50 ppm [30 min] 25 ppm [1 h] 10 ppm [8 h]	35 ppm 200 ppm [C]	25 ppm
Formaldehyde [h]		0.75 ppm 2 ppm [15 min]	0.3 ppm 1 ppm [i]	0.1 ppm [L] 0.05 ppm [L] [b]	0.1 mg/m^3 (0.081 ppm) [30 min] [p]	0.016 ppm 0.1 ppm [15 min]	0.3 ppm [C]
Lead	1.5 µg/m^3 [3 months]	0.05 mg/m^3	0.1 mg/m^3 1 mg/m^3 [30 min]	Minimize exposure	0.5 µg/m^3 [1 yr]	0.~~1~~050 mg/m^3 ~~[10 h]~~	0.05 mg/m^3
Nitrogen dioxide	0.05 ppm [1 yr]	5 ppm [C]	5 ppm 10 ppm [5 min]	0.05 ppm 0.25 ppm [1 h]	0.1 ppm[1 h] 0.0~~2~~04 ppm [1 yr]	1 ppm [15 min]	3 ppm 5 ppm [15 min]
Ozone	0.12 ppm [1 h] [g] 0.08 ppm	0.1 ppm	j	0.12 ppm [1 h]	0.064 ppm (120 µg/m^3) [8 h]	0.1 ppm [C]	0.05 ppm [k] 0.08 ppm [l] 0.1 ppm [m] 0.2 ppm [n]
Particles [e] <2.5 µm MMAD [d]	15 µg/m^3 [1 yr] [o] 65 µg/m^3 [24 h] [o]	5 mg/m^3	1.5 mg/m^3 for <4 µm	0.1 mg/m^3 [1 h] 0.040 mg/m^3 [L]			3 mg/m^3 [C]
Particles [e] <10 µm MMAD [d]	50 µg/m^3 [1 yr] [o] 150 µg/m^3 [24 h] [o]		4 mg/m^3				10 mg/m^3 [C]
Radon	~~See Table B-2~~ [f]			800 Bq/m^3 [1 yr]	~~2.7 pCi/L [1yr]~~		
Sulfur dioxide	0.03 ppm [1 yr] 0.14 ppm [24 h] [g]	5 ppm	0.5 ppm 1 ppm [i]	0.38 ppm [5 min] 0.019 ppm	0.048 ppm [24 h] 0.0~~1~~92 ppm [1 yr]	2 ppm 5 ppm [15 min]	2 ppm 5 ppm [15 min]
Total Particles [e]		15mg/m^3					

WHO/Europe

The World health Organisation, Regional Office for Europe (WHO/Europe) has IAQ guidelines, "Air Quality Guidelines for Europe, Second Edition" that are applicable to the external and indoor environment. The WHO/Europe guidelines are limited to 21 contaminants.

Of those 21 contaminants, six have been identified, in the ASHRAE/ANSI Standard 62 above, as being important for indoor air quality. Subsequently, in October 2005, WHO have updated some exposure limits and the pollutants relevant to this proposal are as shown in the following table.

Selected WHO / Europe Exposure Limits

Pollutant	Averaging time	Air Quality Guideline value
Particulate matter		
$PM_{2.5}$	1 year	10 µg/m^3
	24 hour (99th percentile)	25 µg/m^3
PM_{10}	1 year	20 µg/m^3
	24 hour (99th percentile)	50 µg/m^3
Ozone, O_3	8 hour, daily maximum	100 µg/m^3
Nitrogen dioxide, NO_2	1 year	40 µg/m^3
	1 hour	200 µg/m^3
Sulfur dioxide, SO_2	24 hour	20 µg/m^3
	10 minute	500 µg/m^3
Carbon Monoxide	15 minute	100 mg/m^{3c}
	30 minutes	60 mg/m^{3c}
	1 hour	30 mg/m^{3c}
	8 hours	10 mg/m^{3c}
Formaldehyde	30 min	0.1 mg/m^3
Lead	annual	0.5 ug/m^3
Toluene	1 week	0.26 mg/m^3

Note: exposure at these concentrations should be for no longer than the indicated times and should not be repeated within 8 hours)

OH&S - Australia

The Commonwealth, States and Territories have acts that incorporate regulations and guidelines for exposure to pollutants. The regulations and guidelines generally cover only pollutants considered toxic and/or hazardous. They do not cover total volatile organic compounds (TVOCs) as a group nor those that are only odoriferous such as perfumes, fragrances, and body odours.

Australian IAQ

The National Health and Medical Research Council developed Interim National Indoor Air Quality Goals that culminated in a table of Goals for Maximum Permissible Levels of Pollutants in Indoor Air. However, the table was rescinded in March 2002. The table is still available for reference at http://www.nhmrc.gov.au/publications/synopses/eh23.htm.

The Inaugural meeting on Managing IAQ in commercial buildings by the Building Owners and Managers Association (BOMA) was held in 1991. It was agreed that guidelines based on IAQ were more appropriate than guidelines based on workplace exposure. BOMA has now become the Property Council of Australia. The NHMRC Interim Guidelines on Indoor Air Quality were adopted at this meeting.

The Clean Air Society of Australia and New Zealand (CASANZ) prepared a background and proposal paper on IAQ in 2002 titled "*Indoor Air Quality in Australia: A Strategy for Action"* (FASTS Occasional paper No 5). In this work they identified 21 indoor pollutants, provided an assessment on their individual significance in Australia and indicated what action should be taken to reduce the impact of the specific pollutants on building occupants. The pollutants were ranked on the importance of corrective measures needed to reduce their impact. The summary and recommendations on the pollutants are shown in the following table.

Summary Of 21 Indoor Air Pollutants & Recommendations

Pollutant	**Major sources**	**Priority**	**Immediate action**	**Follow-up action**
Carbon monoxide	Combustion appliances, ETS, vehicle exhaust	High	Education; replace old unflued heaters	Improve ventilation when source active
Nitrogen dioxide	Combustion appliances, ETS	High	Establish goal; education; replace old unflued heaters	Improve ventilation when source active
Environmental tobacco smoke (ETS)	Smoking cigarettes, etc.	High	Urgent education	Urgent education
Formaldehyde	Wood products, furnishings, combustion appliances, ETS	High	Emission standard; education; statistical study	Control of major emitters
House dust mite (HDM)	Discarded skin cells and high temperature/humidity	High	Education; reduce incidence	Education, reduce incidence
Moulds and fungi	Damp areas, air conditioning ducts	High	Establish benchmarks; survey of targeted areas including hospitals; education	Establish standards for maintenance of air conditioning systems
Particulate matter (PM_{10})	Wood combustion appliances, cooking, vacuuming	Medium–high	Statistical study on exposure	Education
Lead	Leaded paint removal, ceiling dust	Medium–high	Education	Further education
Particulate matter of other sizes	Wood combustion appliances, cooking, vacuuming	Medium– high	Education	Further education
Benzene	Petrol vapour and combustion products	Medium–high	Statistical study	Further control if necessary
Bacterial and viral pollutants	Human breathing, sneezing	Medium–high	Establish standards for maintenance of air conditioning systems	Education
Carbon dioxide	Combustion	Uncertain	Statistical study on	Education

	appliances		exposure	
Pesticides	Termicides, insecticides	Medium	Guidelines; statistical study	Action if warranted
Total volatile organic compounds (TVOCs)	Paints, solvents, adhesives, aerosol products	Medium	Statistical study	Reduce levels in major sources
Chlorinated hydrocarbons	Solvents, chlorinated townwater	Medium	Statistical study	Further control if necessary
Other allergens	Cats, dogs, cockroaches	Medium	Education, statistical study	Further education if necessary
Ozone	Ionisers, photocopiers	Low	No action	No action
Radon	Natural rock and earth	Low	Education in certain areas	Watching brief on geology of new housing development sites
Asbestos	Asbestos cement, lagging	Low	Education	Education
Sulfur dioxide	Few	No	No action	No action
Metals	Few	No	No action	No action

Those pollutants of the set identified that can occur, and be regulated, in new or substantially refurbished buildings, and that could cause problems if the buildings are not adequately ventilated, are

- Carbon monoxide;
- Formaldehyde;
- Particulate matter, both PM_{10} and $PM_{2.5}$;
- Lead;
- Bacterial and viral pollutants;
- Carbon dioxide;
- Total Volatile Organic Compounds (VOCs);
- Chlorinated hydrocarbons; and
- Ozone.

One possible pollutant that cannot be easily quantified is body odour. The indoor air procedure in ASHRAE Standard 62-1989, Ventilation for Acceptable Indoor Air Quality contains a guideline value of 1,000 ppm for Carbon Dioxide. This is based on association of elevated carbon dioxide concentrations with unacceptable levels of body odour. It is based on a level of approximately 350 ppm CO_2 in outdoor air and office workers exhaling approximately 300 mL/minute of carbon dioxide. This is approximately equal to a minimum outside air ventilation rate of 7.5 L/s per person. 7.5 L/s per person is the current minimum outside air rate allowed under AS1668.2 – 1991.

3. Proposal

The recommended metrics for maintaining acceptable IAQ are based on the exposure limits described under the WHO/Europe Guidelines with adjustment to include those pollutants considered by CASANZ as being significant in new and substantially refurbished buildings.

The WHO/Europe has not included CO_2 and TVOCs and these have been added subject to review.

The CO_2 proposed guideline in residential premises is the Canadian Indoor Guideline of 3,500 ppm. This is less than the OH&S Standard of 5,000 ppm for an 8 hour exposure.

If the metrics are to become the basis for the determination of minimum outside air for dilution of contaminants and CO_2 is selected as a measure for body odour then the CO_2 level may need to be reduced to 1,000 ppm. This may be set as the initial limit for indoor air quality but the level and the sole use of CO_2 as the measure for body odour should be assessed to ensure its suitability.

The TVOC value selected is based on the rescinded NHMRC guideline and is similar to that used in other Countries.

Environmental tobacco smoke (ETS) can be a significant indoor air pollutant and the control action virtually to ban cigarette smoking in public places is in place. Cigarette smoking in other indoor environments is now highly discouraged and awareness of the dangers should remain a strong deterrent.

The proposed pollutants and their exposure levels are as shown in the following table. The exposure levels assume that there is no environmental tobacco smoke.

Pollutant	Averaging Time	Air Quality Guideline value
Carbon Dioxide	8 hours	3,500 ppm (1,000 ppm as body odour metric)
Carbon Monoxide	15 minutes 30 minutes 1 hour 8 hours	90 ppm 50 ppm 25 ppm 10 ppm
Formaldehyde	30 minutes	0.1 mg/m^3
Lead	1 year	0.5 $\mu g/m^3$
Nitrogen dioxide, NO_2	1 year 1 hour	40 $\mu g/m^3$ 200 $\mu g/m^3$
Ozone, O_3	8 hour, daily maximum	100 $\mu g/m^3$
Particulate matter		
$PM_{2.5}$	1 year 24 hour (99^{th} percentile)	10 $\mu g/m^3$ 25 $\mu g/m^3$
PM_{10}	1 year 24 hour (99^{th} percentile)	20 $\mu g/m^3$ 50 $\mu g/m^3$
Sulfur dioxide, SO_2	24 hour 10 minute	20 $\mu g/m^3$ 500 $\mu g/m^3$
Total Volatile Organic Compounds	1 hour	500 $\mu g/m^3$

Proposal for Acceptable Indoor Air Quality in residential and commercial buildings

The pollutants specified in the above table are considered appropriate at this stage of development of the proposal. They need to be further evaluated after specialist consultation and review.

The levels of formaldehyde and VOCs in new or refurbished buildings may be substantially elevated for the early weeks or months of the use of the building. The WHO short time 30 minute guideline for formaldehyde is 100 ppb (125 $\mu g/m^3$) while the NEPM "Monitoring Investigational Level" for a 24 hour average is 40 ppb. Both these levels can be exceeded in new and renovated buildings. In such cases it may be necessary to increase the amount of outside air or introduce other processes to lower the concentration levels.

Dilution will only be possible where the outdoor air quality is equal to, or better than, the NEPM. The National Environmental Protection Council (NEPC) advises jurisdictions in Australia that where the NEPM air toxic Investigation Level is regularly exceeded at outdoor sites they may wish to consider other management actions.

Contaminants such as biological species (including moulds and fungi) are known pollutants that degrade indoor air. However the methodology for their measurement is not universally agreed and their inclusion should be delayed until a later review. In future reviews additional parameters such as individual VOCs etc. could be considered for inclusion.

4. Development Review of the Proposal

The background to, and the criteria for, defining acceptable IAQ had been initially developed by the ABCB with [redacted], a CASANZ member and major contributor to the CASANZ FASTS Occasional paper No 5. . The proposal has subsequently been assessed by three other members of CASANZ and three members of Standards Australia sub-committee ME-062-02 (AS1668.2). All six reviewers concurred with the objective of the proposal. One reviewer, an engineer, expressed concern about the possibility of precipitating an IAQ testing industry whilst the other reviewers, indoor air quality scientists and medical specialists, provided suggestions on acceptable CO_2 levels greater than and less than the 1,000 ppm proposed as the body odour metric. The latter reviewers also sought more detail on how the IAQ measures would be applied.

5. Impacts

The impacts of quantifying IAQ include the following.

1. Providing acceptable IAQ in occupied spaces.

2. Allowing alternative Verification Methods to any Deemed-to-Satisfy criteria to be developed for particular applications. Such methods could be a mixture of dilution ventilation and local pollutant removal by chemical filtration.

3. Allowing ventilation rates in Class 3 to 9 buildings to be varied by one or more control metrics (one of which could be CO_2) with improvement in IAQ and reductions in fan power energy use, and where air conditioning is used, reduction in heating and cooling energy use.

4. Accurate assessment of the needs for openings in naturally ventilated buildings and determination of the ventilation requirements of inner spaces that are presently assessed as using "borrowed" air.

6. Issues

The quantification of acceptable IAQ will enable the amount of outdoor air introduced to a space by natural or mechanical ventilation to be varied to provide acceptable IAQ. It does not obviate the need to comply with OH&S guidelines on toxic or hazardous pollutants.

If the concept of setting criteria for acceptable IAQ is considered creditable then a number of issues need to be further examined and reviewed before implementation. These include

1. establishing an acceptable level of CO_2 as a metric for body odour and determining if other metrics are required together with identifying single and automatic testing processes;

2. reviewing the proposal for application to all types of occupancy (infants, healthy adults, aged care, etc.);

3. examining if additional metrics need to be included for toilets, bathrooms, carparks, and other facilities;

4. after quantifying all criterion for acceptable IAQ, development of Deemed-to-Satisfy criteria for mechanical and natural outdoor air ventilation;

5. assessing what changes may need to be made to AS1668.2-1991 for the proposed IAQ criteria;

6. development of example Verification Methods using the Performance Requirements for dilution and other strategies for inclusion in the BCA Guide; and

7. undertaking a cost benefit study of the acceptable IAQ criteria after undertaking examination and review of items 1 to 6.

7. Options

The options for inclusion of acceptable IAQ are

1. leaving BCA as it is;

2. developing IAQ guidelines for industry;

3. incorporating the criteria into AS1668.2 and referenced in BCA; or

4. adopting the criteria as a Performance Requirement in BCA.

Option 1

Do not include quantification of IAQ and hence outdoor air ventilation is an option but the option does not meet COAG principles for quantification. Consequently a net benefit study will be carried out of deemed to satisfy measures for the introduction of outdoor air for the life of the building on indoor environment health and amenity and energy use.

In summary:

Benefits:

- no changes to BCA

Disadvantages:

- does not comply with COAG principles
- does not include quantification of performance at highest level in the BCA
- no net benefit analysis of regulation of deemed-to-satisfy IAQ measures on environment health, amenity and energy use

Option 2

Quantifying maximum levels of non-hazardous contaminants in the form of IAQ guidelines will require cooperation between the various organisations with interests in IAQ. It may take some time to develop the guidelines as compromises will need to be made between these organisations. Further the development of the guidelines will not ensure their adoption by industry.

If the levels are not regulated other guidelines may, and in some cases have already (Green Star Rating with credits for exceeding the minimum outside air rates shown in AS1668.2), been adopted by Administrations that may disadvantage other sustainability measures such as saving energy. Further, guidelines may not be applied consistently.

Benefits:

- no changes to BCA

Disadvantages:

- does not comply with COAG principles
- does not include quantification of performance at highest level in the BCA
- other groups may develop other guidelines that will not necessarily reduce energy use or result in minimum sustainability measures
- no net benefit analysis of regulation of deemed-to-satisfy IAQ measures on environment health, amenity and energy use

Option 3

The benefit in establishing minimum criteria acceptable criteria for IAQ is that Verification Methods (VM) can be developed that maintain minimum acceptable IAQ, that can save energy use through innovative operating strategies, and that may be part of any future BCA Sustainability measures. In new of refurbished buildings innovative control strategies may include dilution ventilation by outside air to reduce TVOCs to acceptable levels. Once the building is occupied other control strategies may be implemented that regulate the amount of outside ventilation air to maintain acceptable IAQ but reduce energy use.

If IAQ is defined in the Performance Requirements it will be subject to annual review and the criteria adjusted to reflect current community expectations and health research. Further acceptable VMs can be described in the BCA.

This option provides the benefit that revision can be expedited and that the future IAQ Sustainability measures can all be contained in the BCA.

The disadvantage could be that the ventilation rates in AS1668.2 – 1991 may need to be adjusted to meet the Performance Requirement. Depending upon the degree of difference between the proposed criteria and AS1668.2-1991, there could be a transitional period for the Deemed-to-Satisfy measures whilst AS1668.2 is modified to comply with the Performance Requirement.

In summary:

Benefits:

- clarification of IAQ in the BCA
- quantification of IAQ in BCA
- potential to develop Verification Methods
- net benefit analysis of the quantification will be undertaken
- potential to save energy through innovative air-conditioning control strategies
- in new and refurbished buildings maintain IAQ if TVOCs are a problem

Disadvantages:

- requires a regulatory review process
- may require changes to AS1668.2 - 1991

Option 4

At present the Deemed-to-Satisfy requirements for BCA Volume One are referenced in AS1668.2 - 1991. BCA Volume Two, under Acceptable Construction Practice, prescribes the openable area of permanent openings based on floor area.

The advantage for inclusion of IAQ measures in AS1668.2 is that both the Performance Requirement and the Deemed-to-Satisfy parts on IAQ will be in the one document. Further examples of VMs could also be included.

The disadvantages are that it will take longer to amend any AS1668.2 Performance Requirements compared to the same process instigated under BCA. The standard would only be referenced by BCA when the changes to the standard are complete and a PIA is carried out and reviewed. Further any future IAQ Sustainability measures will be part referenced away from the main issues of sustainability.

Another disadvantage is the intention of including quantification of performance at the highest level such as the verification level is not realised as a first step.

In summary:

Benefits:

- inclusion in AS1668.2 with present deemed-to-satisfy

requirements
- VMs could be included in AS1668.2

Disadvantages:
- development and review process of AS1668.2
- does not include quantification of performance at highest level in the BCA

8. Review

The options provided cover the issues raised. Option 1 meets the objective of quantification and can ensure that future IAQ Sustainability measures are all incorporated into the BCA. Option 2 offers no advantages over Option 1 and has the disadvantage that the review and approval process can take longer.

The option to stay at status quo does not appear to address the commitments of COAG nor improve design clarity, however is included for assessment under IGA principles.

Quantification of Performance of Indoor Air Quality in the BCA has the additional benefit of aligning ventilation measures to those already set under an ICA Agreement and is compliant with the intent of COAG principles and guidelines for regulation setting bodies to reduce bureaucratic discretion and achieve net benefit

9. Response Sheet

Proposal for Quantification of Indoor Air Quality

To:	**– ABCB Project Manager** **Telephone: 02** **Facsimile: (02) 6213 7287**

Name: …….. Date: …….

Organisation: …….

To assist the further development of the proposal presented in this Consultation Document, respondents are requested to reply to, at least, the following questions. Please attach supplementary comments as necessary.

	Questions	YES	NO
1	Do you generally agree with Option 4 to quantify IAQ as a Performance Measure in BCA and identifying the IAQ measures in a nationally consistent way?		
2	Do you generally agree with Option 3 for inclusion of IAQ measures in AS1668.2 with reference from BCA?		
3	Do you generally agree with Option 2 that guidelines be developed for IAQ that may not be binding on industry but can be adopted in a voluntary manner?		
4	Do you generally agree with Option 1 to leave as is?		
5	Are there other viable options then those described in this Consultation Document? Please provide details and impact justification.		
6	Do you agree that the additional research identified is required to enhance the review?		
7	Do you believe other research needs to be carried out? Please provide details and impact justification.		

10. References

COAG (2004) *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies,* Council of Australian Governments, Canberra, Australia

National Environment Protection (Ambient Air Quality) Measure, as amended, prepared by the Office of Legislative Drafting, Attorney-General's Department, Canberra

NEPC Report on the Implementation of the Ambient Air Quality NEPM, National Environment Protection Council annual report 2004 – 2005

Exposure Guidelines for Residential Indoor Air Quality, A Report of the Federal-Provincial Advisory Committee on Environmental and Occupational Health, 1995, Canada

Occupational Safety and Health standards: Air contaminants, US Department of Labor Regulation 29 CFR 1910.1000

Indoor Air Quality, Position Document Approved by ASHRAE Board of Directors, February 10, 2005

Ventilation for Acceptable Indoor Air Quality, ANSI/ASHRAE Standard 62.1-2004

Addendum to Ventilation for Acceptable Indoor Air Quality, ASHRAE Addenda to ANSI/ASHRAE Standard 62.1-2004, 2006 Supplement

European Health21 Target 10 A Healthy And Safe Physical Environment, Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998

WHO air quality guidelines global update 2005, Report on Working Group meeting, Bonn, Germany, 18-20 October 2005.

Indoor Air Quality in Australia: A Strategy for Action, FASTS Occasional paper No 5, Federation of Australian Scientific and Technological Societies, 2002, prepared by Clean Air Society of Australia and New Zealand

Agenda Item 15 2008 BCA INFORMATION SEMINARS

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC:

- note the proposed dates for the 2008 BCA Information Seminars; and
- note the proposed date for the dry run.

Background

The seminar series for BCA 2008 will retain the partnership model established by the Board whereby the ABCB in conjunction with the States and Territories, will partner with an industry association to deliver the seminars. In 2008 this partnership will be with the Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH), who will refresh delegates on aspects of Section J, in particular:

- Part J5 – Air Conditioning and Ventilation – DTS Provisions for new buildings
- Part J6 – Artificial Lighting and Power – DTS Provisions for new buildings
- Verification Methods for New Buildings

A cost recovery approach will be applied to registration fees for the seminars, with a discount offered to BCA and AIRAH subscribers.

It should be noted that the **dry run** for the Seminars will be held in the ABCB Office on **Friday 1 February**. The dry run is an important opportunity to provide input to the development of the seminars and attendance is strongly recommended. Further details will be provided towards the end of the year.

Proposed dates for the BCA 2008 Information Seminars are:

Canberra	11 February	The Marque Hotel
Sydney	14 & 15 February	Bayview Boulevard Sydney
Melbourne	19 & 20 February	Spring Street Conference Centre
Hobart	22 February	Hotel Grand Chancellor
Brisbane	3 & 4 March	Royal on the Park
Darwin	6 March	Novotel Atrium Darwin
Perth	11 & 12 March	City West Function Centre
Adelaide	19 March	Stamford Plaza

Agenda Item 16 BCC WORK PROGRAM

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC note its work program for 2007/2008.

Background

Attachment A contains the revised and updated work program for the BCC.

ATTACHMENT A

ABCB Building Codes Committee 2007-08 Work Plan

The role of the Building Codes Committee (BCC) as described in its Terms of Reference is:

- advise and make recommendations, through the Chair, to the Board on-
    - technical matters relevant to the BCA;
    - strategic policy relevant to building control matters;
    - a list of categorised and prioritised proposals to assist in the development of the ABCB Annual Business Plan; and
- provide advice and guidance to the ABCB Office-
    - at key stages of technical projects; and
    - on the overall direction and development process for technical projects through the review and endorsement of Project Management Briefs.

Building Codes Committee performance indicators

1. BCC recommendations to the Board were consistent with the IGA principles and the policy direction established by the Board
2. BCC members fulfilled their obligations described in the BCC's Terms of Reference
3. BCC processes were conducted in accordance with the BCC's Terms of Reference
4. The BCC contributed to the achievement of outcomes described in the Board's work program and leading to the achievement of the Board's 2011 outcomes

IGA Principles	Board work program projects	BCC work plan to progress BCA development	Timing
Minimum Necessary Performance-Based Codes to Achieve Health, Safety, Amenity and Sustainability of Buildings	Maintain and Update the BCA	Assist in the development of the BCA and the Guide to the BCA, including:	
		▪ Consider public comment received and agree on resulting actions	BCC 2007-3
		▪ Consider new and revised documents proposed for reference	BCC 2007-3
		▪ Endorse pre-publication draft	Early Dec 2007
		▪ Provide advice on the wording of proposed BCA amendments	NTS / BCC 2008-1
		Assist in the development of the ABCB Annual Business Plan through the consideration of Proposals for Change (PFCs) at the National Technical Summit and development of recommendations for Board consideration.	March – April 2008
		Subject to Board decisions on scoping/preliminary work undertaken in 2006-07, the following matters may require further input from BCC during 2007-08:	TBA
		▪ Class 1b/3 classification	BCC 2007-3
		▪ Fire safety in childhood centres	November 2007
		▪ Definition of Class 2/3 buildings	BCC 2007-3
		▪ Control of smoke spread through penetrations	November 2007
		▪ External noise	November 2007
		▪ Use of fire retardant coatings	BCC 2007-3
		▪ Fire Safety (Sprinklers) in Residential Care Buildings – Consultation paper	October 2007
	Standards Coordination and Committees	Review documents proposed for BCA reference for suitability for regulatory use	BCC 2007-3
		Consider and provide comment on drafts of new and revised documents including any supporting impact assessment (Information provided by Standards Australia)	

IGA Principles	Board work program projects	BCC work plan to progress BCA development	Timing
		▪ AS/NZS 1170 Part 0 – amdt 3	End of 2008
		▪ AS/NZS 1170 Part 1 – amdt 2	End of 2008
		▪ AS/NZS 1170 Part 2 – Revision	End of 2008
		▪ AS/NZS 1170 Part 4 – Revision	BCC 2007-3
		▪ AS 1288 – amdt 1	November 2007
		▪ AS 1397 – Revision	June 2008
		▪ AS 1657 – Revision	September 2007
		▪ AS 1668 Part 1 – Revision	October 2008
		▪ AS/NZS 1680 Part 0 – Revision	August 2008
		▪ AS 1860 Withdrawal.	BCA 2008/2009
		▪ AS 2047 – Revision	October 2008
		▪ AS 2118 Part 1 – amdt 1	October 2007
		▪ AS 2118 Part 4 – Revision	April 2008
		▪ AS 2118 Part 6 – Revision	May 2008

IGA Principles	Board work program projects	BCC work plan to progress BCA development	Timing
		▪ AS 2159 – Revision	End of 2007
		▪ AS/NZS 2179 Part 1 – Revision	End of 2008
		▪ AS 2293 Part 1 – amdt 1	November 2007
		▪ AS 2419 Part 1 – Revision	July 2008
		▪ AS/NZS 3500 Part 3 – amdt 1	End of 2008
		▪ AS/NZS 3500 Part 4 – amdt 2	End of 2007
		▪ AS/NZS 3500 Part 5 – Revision	End of 2007
		▪ AS 3600 – Revision	BCA 2009
		▪ AS 3660 Part 1	BCC 2007-3
		▪ AS 3786 – Revision	December 2007
		▪ AS 3959 – Revision	December 2007
		▪ AS 4055 – amdt 1	May 2008
		▪ AS 4254 – Revision	October 2008
	Quantification of Performance Requirements	Review Quantification work documents including: ▪ Stormwater verification method	October 2007

IGA Principles	Board work program projects	BCC work plan to progress BCA development	Timing
		▪ Glass Human Impact verification method ▪ Indoor Air Quality ▪ Lighting/Emergency Lighting ▪ Fire Hazard Properties ▪ Sound Transmission ▪ Maintenance	October 2007 BCC 2007-3 February 2008 April 2008 April 2008 June 2008
	Salinity and Acid Sulphate Soils	Provide advice and direction on consultation outcomes.	BCC 2007-3
	Strategic Research Activities	▪ Note Final Report on Waking up to a Fire – Optimising the Fire Alarm Signal (Stage 2) ▪ Note Final Report on Slips, Trips and Falls ▪ Note Final Report on Architectural Glass Related Injury: Implication for Improving Public Safety (Phase 1) ▪ Note Final Report on Enhanced Probabilistic Modelling of Cyclones ▪ Note Final Report on Economic Benefits of Improved Wind-Loading Design of Buildings in Tropical Cyclone-prone Regions in Australia	August 2008 Early 2008 August 2008 October 2007 Early 2008
	Emergency Egress for All Occupants	Consider research and provide advice to Board on the development of provisions for emergency egress for all occupants including people with a disability	TBA
	Wire Balustrades - Review	Consider research findings and agree on proposed BCA amendments as part of public comment draft of BCA2009	See 'Maintain and Update the BCA'

IGA Principles	Board work program projects	BCC work plan to progress BCA development	Timing
	Penetrations in Class 9c Plasterboard ceilings	When available, consider report	BCA 2009
	Impact of climate change on cyclonic regions of Australia	When available, consider report	2007/2008
	Class 6 and Class 9b Classifications	When available, consider report	BCA 2009
	Sanitary Facilities	When available, consider scoping study and provide direction for further work	2007/2008
Direction Setting to Align with Strategic Priorities as Established by Ministers	Access for People with a Disability	Subject to direction from Ministers	TBA
	Strategic Review of the BCA against COAG Principles	Consider outcomes of the Strategic Review and provide direction for consideration by the Board.	BCC 2007-3
	Building Sustainability (including Energy Efficiency)	Subject to Board and Ministerial direction on the scoping and adaptation studies undertaken in 2006-07, further input from BCC during 2007-08 may be required. Review final draft of ABCB Handbook for Applying energy efficiency measures to new building work associated with existing Class 2-9 buildings. Review and approve final draft of Australia, State & Territory climate zone maps prior to placement on ABCB website	TBA October 2007 October 2007
	Protection from Threats and Natural Disasters	Review and provide advice on any outcomes from TRAAC and NFRAG committees responsible for Natural Hazards guidelines.	TBA
	Buildings in Flood Prone Areas	Provide advice and direction on consultation outcomes.	BCC 2007-3

Transparency, Accountability and Consultation including Increased Impact Assessment	Impact Assessment of all Regulatory Change Proposals	Consider and comment on impact assessment for all regulatory change proposals including:	
		▪ Final RIS for Earthquakes (AS1170.4) ▪ Consultation RIS for Bushfires (AS3959) ▪ Consultation RIS for Sprinklers	October 2007 March 2008 March 2008
Greater National Consistency including Variation Reduction Strategy	Variation Reduction Strategy	As necessary, assist in the reduction of State and Territory BCA variations by reviewing proposals and providing technical advice regarding variations.	On-going
Reduced Reliance on Regulation including Increased Practitioner Skill Levels and Non-Mandatory Handbooks	Non Regulatory Handbooks	Assist in the identification and prioritisation of Handbooks. ▪ Note handbook for the use of Structural Software for building design approval. ▪ Existing Buildings – refer to Building Sustainability (including Energy Efficiency).	November 2007 October 2007 October 2007
	BCA Awareness and Training	As necessary, provide advice and assistance in the development of BCA Awareness Seminars. Participate in dry run of seminars.	January 2008 1 February 2008
Facilitation of Board's Reform Agenda		Provide advice and undertake tasks in response to Board direction on BCA development matters	As required

Building Codes Committee 07-08 key dates

BCC 2007-3 meeting	16 and 17 October
Pre-publication draft of BCA 2008 available	16 November
BCC agreement to BCA 2008 due	30 November
Final day for submission of Proposals for Change	1 February
National Technical Summit	1 and 2 April
Adoption date for BCA 2008	1 May

Agenda Item 17 PROJECT UPDATE

Contact Officer: [redacted] – ABCB Office

Recommendation

It is recommended that the BCC note the advice on the status of ABCB projects.

Background

Attachment A contains a brief summary of the current status of ABCB projects.

Agenda Item 18 OTHER BUSINESS

Contact Officer: [redacted] – ABCB Office

Background

This agenda item provides the opportunity for members to raise other matters for discussion.

Agenda Item 19 DATE & LOCATION OF NEXT MEETING

Contact Officer: [redacted] ABCB Office

Recommendation

It is recommended that BCC note the proposed timing and location of the next meeting.

Background

It is proposed that the next meeting of the BCC be held in conjunction with the next National Technical Summit in Canberra. The NTS is planned for 1 & 2 April and BCC 2008-1 is planned for 3 April.

ABCB

ABCB Board Meeting 2007-2
Adelaide
Thursday 31 May 2007

Agenda Papers

Australian Building Codes Board

ABCB BOARD MEETING 2007-2

Thursday 31 May 2007, 8:30 am – 1:30 pm
The Hyatt Regency, North Terrace, Adelaide

The Board Dinner will be held at Blake's Restaurant, Hyatt Regency Hotel Wednesday 30 May 2007, 7:00pm for 7.30pm.

2011 OUTCOMES				
Nationally Consistent & Cost Effective Regulatory Framework	A More Sustainable Built Environment	Safer and More Socially Inclusive Built Environment	Informed and Responsive Building Industry	Increased Practitioner Skills & Competencies

	AGENDA
1	Opening Remarks
2	Record of ABCB 2007-1 Meeting and Actions Arising
3	Joint Building / Planning Working Group Report
4	Variations Reduction Strategy
5	Strategic Review of the BCA against COAG Principles
6	Progress against 2006-07 Business Plan
7	2007 National Technical Summit Outcomes
8	Contemporary Operating Environment for the Board's work
9	Draft 2007-08 Annual Business Plan and Budget
10	Finalisation of ABCB Stakeholder Communication Strategy
11	BCA Delivery Model
12	National Accreditation Framework for Building Certifiers
13	Financial Statement
14	ABCB Calendar of Events
15	General Manager's Report • Board Member Governance • Plumbing (hot water) and scoping studies • National Forum of Building Appeals • BCA 2007 Seminars • ANAO 'Better Practice Guide': Administering Regulation • Green Statement • China IRCC Meeting • CodeMark/tradeshow • Other Contemporary Issues
16	Correspondence
17	Other Business
18	Place and Date of Next Meeting

IGA PRINCIPLES

Direction Setting to Align with Strategic Priorities as Established by Ministers	*Minimum necessary Performance-Based Codes to Achieve Health, Safety, Amenity and Sustainability of Buildings*	*Reduced Reliance on Regulation including Increased Practitioner Skills and Non-Mandatory Guidelines*	*Greater National Consistency including Variation Reduction Strategy*	*Strengthen Reforms to Building Regulation (through International Collaboration)*	*Transparency, Accountability and Consultation including Increased Impact Assessment*

Agenda Item 1: OPENING REMARKS

The Chairman will open the meeting.

A list of anticipated attendance for ABCB 2007-2 is attached.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

ANTICIPATED ATTENDANCE

PRESENT

[redacted]	Chairman	[redacted]	WA
[redacted]	NT	[redacted]	SA
[redacted]	VIC	[redacted]	TAS
[redacted]	Industry	[redacted]	QLD
[redacted]	ALGA	[redacted]	Industry
[redacted]	Australian Government	Barry Neilsen	Industry
TBA	NSW	[redacted]	Industry
[redacted]	ABCB General Manager	[redacted]	ACT

ABCB Office

[redacted], Deputy General Manager
[redacted], Manager, Policy, Education and Corporate
[redacted] Manager Major Projects and Research (Agenda item 3)
[redacted] Project Manager, (Secretary to the Board)

Others in Attendance

[redacted], Planning, SA

Apologies

None to date

Note – [redacted] (NSW) is on secondment from Planning NSW to another area of Government.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 2: RECORD OF ABCB 2007-1 MEETING AND ACTION ARISING

FOR DECISION

The Board is to consider the attached draft record of meeting 2007-1 and if correct, confirm its contents.

DRAFT

AUSTRALIAN BUILDING CODES BOARD

MEETING 2007-1

SYDNEY

1 MARCH 2007

SUMMARY RECORD OF DISCUSSION

ABCB 2007-1

ATTENDANCE

PRESENT

[redacted] AM	Chairman	[redacted]	ABCB General Manager
[redacted]	NT	[redacted]	WA
[redacted]	VIC	[redacted]	SA
[redacted]	Industry	[redacted]	TAS
[redacted]	ALGA	[redacted]	Industry
[redacted]	Australian Government	Barry Neilsen	Industry
[redacted]	QLD	[redacted]	Industry
[redacted]	ACT	[redacted] (for [redacted]	NSW

ABCB Office

[redacted], Deputy General Manager
[redacted], Manager, Policy, Education and Corporate Services
[redacted] Project Manager, (Secretary to the Board)

Others in Attendance

[redacted] General Manager, Advanced Manufacturing, Action Agendas and Building Branch, Australian Government Department of Industry, Tourism and Resources
[redacted] Di Marzio Research Pty Ltd
[redacted] Chief Executive Officer, Standards Australia
[redacted] Chairman, Standards Australia
[redacted], Operations Manager, Standards Australia
[redacted] Publications and Marketing, Australian Building Codes Board

Apologies

[redacted] - Department of Planning, NSW

AGENDA ITEM 1: OPENING REMARKS

The Chair welcomed all members to the meeting. He introduced [redacted] who replaces [redacted] as the Commonwealth Board member. [redacted] was an apology for the meeting and [redacted] represented the NSW Government on her behalf.

Members were advised by the Chair that planned meetings with State and Territory Ministers to discuss the ABCB's Business Plan had commenced. He expects all meetings to have taken place before the next Board meeting.

The Chair and ABCB's Deputy General Manager met with the Department of Industry Tourism and Resource's Deputy Secretary [redacted] to discuss disability access matters. The Commonwealth Board member agreed to update members on the issue later in the meeting.

AGENDA ITEM 2: RECORD OF ABCB 2006-3 MEETING AND ACTIONS ARISING

At the suggestion of the NSW representative the Board agreed to amend the first outcome under agenda item 4.2 of the previous meeting's minutes, as follows:

'Outcome: The Board would be asked to endorse BCA amendments based on a recommendation from the BCC, that the amendment was suitable for referencing in the BCA and was compatible with any policy direction that had been set by the Board.'

Action: The Board agreed to amend the first outcome under agenda item 4.2 of the previous meeting's minutes to ensure it reflected the amendment made to paragraph 2 regarding signoff of the BCA.

Outcome: With the above change the minutes of 2006-3 were confirmed as a fair and accurate record of the meeting.

AGENDA ITEM 3.1: PROGRESS AGAINST 2006-7 BUSINESS PLAN

The Chair briefed members on progress against the 2006-7 Performance Indicators and noted that all projects were tracking well.

The Board noted progress on the Work Program and recognised that there was a misalignment of some 'Projects' against their relevant 'Output'. The GM undertook to correct the misalignment.

The Chair advised that the review of the RIS process was essentially complete although the 'communication' aspect had been delayed due to the unexpected delay in the release of the revised COAG regulatory principles.

The Board noted progress against the Performance Indicators and Work Program.

Action: Attachment C – 2006-2007 Wo rk Program Project Update is to be revised to ensure alignment between the 'Project' and 'Output'.

AGENDA ITEM 4.1: STRATEGIC REVIEW OF THE BCA AGAINST COAG PRINCIP LES

The Chair advised that major stakeholders had been either directly consulted or advised of the Strategic Review of the BCA against COAG Principles. Stakeholder comment had been sought on the draft public consultation document prior to its release and their participation and involvement in the process had been requested.

The NSW representative questioned the use of the term ‘overly burdensome’ in the public consultation document. The GM agreed to consider an alternative to the use of the term 'overly burdensome' to ensure the wrong message was not sent to stakeholders.

The NT representative questioned the extent that BCA referenced documents, such as Australian Standards, would be considered during the review. The Deputy GM advised that it would be limited to the reference of the document itself and not the technical content.

The NSW representative suggested that consideration be given to seeking comment on the 'framework' that the BCA is administered through to ensure consistency with the COAG principle 'Minimising administrative burden'. There was general agreement from members to the suggestion.

The Chair advised that a final draft of the public consultation document including a description of the changes would be circulated to all members.

Outcome: The Board agreed to the release of the public consultation document.

Action: Consideration is to be given to using an alternative to the term 'overly burdensome' in the public consultation document to ensure the wrong message is not being sent to stakeholders.

Action: Consider seeking comment on the 'framework' that the BCA is administered through to ensure consistency with the COAG principle 'Minimising administrative burden'.

Action: A final draft of the public consultation document including a description of the changes between it and the draft provided in the Board papers is to be circulated to all members.

AGENDA ITEM 4.2: FUTURE OPTIONS FOR THE BCA’S DELIVERY

The Deputy GM spoke briefly about the Productivity Commission review of the ABCB and calls from some stakeholders for the BCA to be made freely available. It was noted that there are currently 23,000 BCA subscribers, which represent only one-third of the potential market. The Deputy GM described future options for the BCA’s delivery to increase market penetration.

Options 3 and 4 were discussed in detail and the Deputy GM presented BCA mock-ups to support these options. Options 3 and 4 provide the BCA mandatory provisions free of charge and an option for the BCA to be purchased in separate modules. It was further explained that these options would provide benefits to industry, for example, framers, stair builders and concreters etc being able to purchase single sections of the BCA applicable to their trade at significantly reduced prices. It was also recognised that there would be a

continued need to provide the BCA in its current consolidated format for building certifiers, architects and builders etc.

The QLD representative sought advice on what timeframes might be required to make the BCA available in the new formats. The Deputy GM indicated that the mandatory provisions could be put on the website for free within 6 months. In relation to the separate modules, it might take until 2009 due to the detailed formatting involved.

Options 1 and 2 were briefly discussed. Some members questioned the financial consequences of making the BCA freely available. The GM advised that in that event the ABCB would need to be 100% Government funded.

Further discussion continued in relation to altering amendment cycles, BCA format and the referencing of Australian Standards. The GM explained that many of the suggested options had been trialled in the past and were unacceptable to industry.

The VIC representative supported the sale of the BCA and preferred Option 4. The Victorian Government is happy with the current funding arrangements and would not support contributing additional funds to make the BCA freely available.

There was general support of Option 4 from members but it was agreed that there needs to be further market testing before its introduction.

The NSW representative stated that any option must not undermine the rest of the BCA and must maintain a 'holistic approach' to the BCA. The BCA is a package and the Board needs to be mindful of this when considering options.

Outcome: The Board supported Option 4 and re quested further analysis, noting comment s from members regarding further consideration of market testing and maintaining a 'holistic approach'.

AGENDA ITEM 4.3: GREEN BUILDING COUNCIL OF AUSTRALIA

A presentation on the Green Building Council of Australia (GBCA) was given by the VIC representative and [redacted] (founding director of GBCA). [redacted] had hoped to make a PowerPoint presentation but as it was not available she agreed to circulate it to members post meeting.

Members were informed that the GBCA has had a relatively short life but is growing fast and currently has 280 member organisations. The GBCA was modelled on a similar USA organisation. It is estimated that 10% of USA construction is applying green construction and it is thought to be approximately 2% in Australia. The GBCA is about best practice and not minimum standards. Income is produced through education activities.

The Chair thanked both the VIC representative and [redacted] for their informative presentation.

The ACT representative questioned where the GBCA was headed in future and whether it would be considering residential construction? The VIC representative advised that health and education rating tools are of a high priority and that multi residential type construction is being considered.

Action: [redacted] *to circulate to members a PowerPoint presentation on the role of the Green Building Council of Australia.*

AGENDA ITEM 5.1: ABCB COMMITTEE REVIEW

The Chair suggested that item 5.2 of the agenda (Joint Building/Planning Working Group) be discussed before considering this item as it may impact on the committee restructure. Members agreed and item 5.2 was discussed.

The ACT representative explained the proposal, which would include disbanding the Sustainability Working Group, as maintaining it would only duplicate the effort of the Joint Building/Planning Working Group.

The GM explained that the work and role of the Core Strategic Group (CSG) had been overtaken by other efforts and it was also proposed that this committee be disbanded.

The TAS representative expressed a concern that by disbanding the committee the Board would lose valuable stakeholder input and ongoing strategic risk advice on the development of the BCA.

The SA representative had similar comments and suggested that there may still be a need for advice on the Quantification of Performance project. It was proposed that the committee's name be changed to the Quantification of Performance Group. The GM advised that the Quantification of Performance project needed to be dealt with more broadly by stakeholders, industry groups and the BCC, not a separate committee.

The NSW representative suggested that the CSG be maintained as a steering committee for the project. The GM requested an opportunity to consult with the ABCB Project Manager, [redacted] before making a decision. All members agreed to this approach.

The GM explained that under the previous IGA the BCC operated though the Standing Orders. As the new IGA has no Standing Orders the BCC now require Terms of Reference (TOR). A revised draft TOR was provided to all members.

Some members were of the view that the role of the BCC including interaction with the Board and their strategic role appears to have diminished in the new TOR. The ACT representative suggested the word 'strategy' be replaced with 'strategic policy'. The NSW representative further added that the role of the BCC included providing advice on matters broader than just 'technical matters' and suggest the words 'strategic policy relevant to building control matters' be inserted. The Board agreed to the proposed changes.

Outcome: With the above alterations members agreed to the proposed committee restructure, including their composition and focus.

Action: The Office is to consider and report back to the Board on whether members of the previous Core Strategic Group be consulted on the Quantification of Performance Project as appropriate.

Action: Under the BCC's Terms of Reference amend their responsibilities by replacing the wording 'strategy relevant to technical matters' with 'strategic policy relevant to building control matters'.

AGENDA ITEM 5.2: JOINT BUILDING / PLANNING WORKING GROUP REPORT

The ACT representative advised members that the first meeting of the Joint Building/Planning Working Group (JWG) had been held on 28 February 2007. At the meeting a revised draft Terms of Reference was developed. A copy of the revised draft TOR was provided to members for consideration. Two additional representatives were to be invited to join the committee to ensure a sufficiently broad representation was achieved. The two additional representatives are [redacted] and [redacted] of E2WG, Department of Energy and Mining Queensland.

It was explained to members that endorsement of the TOR would also be required from the Planning Officials Group (POG) and the Local Government and Planning Ministers Council.

The GM confirmed that he would need to report back on how the work of the JWG might impact on the workload of the Office. There maybe funding from AGO that could underpin this work in the immediate future.

The ACT representative said that POG should also be seen as being able to offer support to the work of the JWG, as well as the possibility of using the Development Assessment Forum. POG will be considering a budget at its March meeting and the work of the JWG is a high priority.

The Board noted the work undertaken by the Western Australian Government on local government interventions and agreed that it would assist with the empirical study.

The WA representative suggested that all Building Ministers be asked to endorse the work of the JWG, possibly at the next Building Minister's Forum (BMF). The Commonwealth representative advised that there was currently no meeting of the BMF confirmed for 2007 but suggested that Minister Macfarlane could write to all State and Territory Ministers. This course of action was supported by all members.

The ACT representative advised he would be providing a paper on the JWG to the next meeting of the Ministerial Council on Energy (MCE).

Action: Circulate the revised Terms of Reference (which were agreed to in principle) for the Joint Building/Planning Working Group electronically to all members.

Action: Report back to the Board at the May meeting on how the work of the Joint Building/Planning Working Group might impact on the workload of the Office.

Action: Request that Minister Macfarlane write to Building Ministers seeking endorsement of the Terms of Reference for the Joint Building/Planning Working Group.

Action: State and Territory members to consult as necessary with Planning Minister and/or Department with planning responsibilities on the revised Terms of Reference for the Joint Building/Planning Working Group.

Action: The next meeting of the Joint Build ing/Planning Working Gr oup is scheduled for Wednesday 30 May 2007, prior to the next Board meeting.

AGENDA ITEM 5.3: VARIATION REDUCTION STRATEGY UPDATE

The Chair briefed members on the variation reduction strategy update paper. It was noted that many variations had been removed but it will become more difficult to identify variations for removal in future.

There was a discussion on the format of the information. Members agreed that future reporting should include a breakdown of the categories and number of variations applicable to each State and Territory.

Action: Future reporting on the Variation Reduc tion Strategy is to include a breakdown of the categories and number of variations applicable to each State and Territory.

AGENDA ITEM 5.4: NATIONAL ACCREDITATION FRAMEWORK FOR BUILDING CERTIFIERS

The GM suggested that the item be deferred to the next meeting as time was limited. All members agreed.

The ACT and NT representatives advised that minor corrections were required to Attachment C for their jurisdictions.

The GM informed members that on 9 February 2007 all State Premiers and Territory Chief Ministers signed a Ministerial Declaration for the mutual recognition of certain occupations. A number of the occupations listed were building industry related. [redacted] confirmed that building certifiers were not included but undertook to investigate the matter further, with the option of taking the matter forward through COAG's processes.

Action: NT and ACT are to be consulted on corrections required to the current Building Certification Qualifications required in those Territories.

Action: Further investigate the possibility of bui lding certifiers being in cluded, in future, on the Ministerial Declaration on Mutual Recognition.

Action: National Accreditation Framework for bu ilding certifiers is to be considered at ABCB 2007-2.

AGENDA ITEM 5.5: REPORT ON ACCESSIBLE HOUSING

The Chair confirmed that this is not the first time that the report had been presented to the Board for public release. The last time it was presented members agreed to delay its release until after Victoria had considered its relative sensitivities.

The Victorian representative advised that the Victorian Planning Minister is currently considering a brief on the matter and suggested that the release of the report be delayed, until clearance has been received.

The NSW representative requested that advance notice be given to members prior to public release to allow the briefing of Ministers. The GM agreed to give advance notice, noting that the report had been available for sometime.

The Chair closed discussion on the item advising that the ABCB will not be regulating accessible housing in the BCA and there will be no public comment sought on the report when it is released.

Outcome: Members agreed to delay the release of the repo rt until the Victorian Planning Minister had been consulted.

Action: Victorian Planning Minister to be consulted on the release of the Accessible Housing Report.

Action: Members to be provided with advance notice of the release of the Accessible Housing Report.

AGENDA ITEM 6.1: REVIEW OF STAKEHOLDER COMMUNICATIONS

The Chair opened discussion and reminded members that the Stakeholders Communication report was commissioned largely as a result of the 2004 Productivity Commission report '*Reform of Building Regulation'* and a recommendation to enhance BCA awareness.

The Chair introduced [redacted] of Di Marzio Research. [redacted] presented the findings of the stakeholder communications study.

At the conclusion of the presentation the Chair thanked [redacted] for an informative presentation.

The SA representative suggested that the next stage of work concentrate on those not currently using the BCA. The SA representative also suggested that further attention be given to promoting the BCA in areas beyond the East Coast.

It was agreed by all members that getting the BCA into the hands of practitioners is only part of the solution. There must also be an accompanying education strategy.

The Deputy GM updated members on negotiations with State and Territory builder licensing bodies to make BCA subscription part of the licensing requirements. There was agreement from members that the Office should push ahead with these negotiations.

Finally, a draft of the new corporate profile for the ABCB was circulated to members for comment.

Action: Members to provide comment to the Office on suggested priority areas for the Stakeholder Communication Strategy.

Action: Office to review options for the next phase of the Stakeholder Communication Strategy noting suggestions to target those practitioners not currently using the BCA and associated education strategies.

Action: Members to review and provide comment on the draft 'Profile of the ABCB'.

AGENDA ITEM 6.2: GM'S REPORT ON RECENT DEVELOPMENTS

In the interest of time, the GM proposed to distribute his report on recent developments subsequent to the meeting (GM's report attached).

Action: Circulate General Manag er's report to members with the draft Minutes of ABCB 2007-1 meeting.

AGENDA ITEM 6.3: ABCB FINANCIAL STATEMENT

The ABCB Financial Statement was noted by the Board. At the request of the Chair, more detail on the financials will be provided in future reports to the Board.

AGENDA ITEM 6.4: CORRESPONDENCE

[redacted] suggested that in light of the change of Minister, the Department of Environment and Water Resources should be contacted regarding the possible release of the report 'An Assessment of the Need to Adapt Building for the Unavoidable Consequences of Climate Change'. The GM agreed to contact the Department.

In relation to the letter received from the Acting Federal Safety Commissioner, the NSW representative offered to provide contact details for the relevant Officer in WorkCover NSW, regarding the work they have undertaken in relation to 'Design Issues on Safe Construction'.

All other correspondence was noted by the Board.

Outcome: In light of the c hange of Minister, the Departmen t of Environment and Water Resources is to be contacted about the possible release of th e report 'A n Assessment of the Need to Adapt Building for the Unavoidable Consequences of Climate Change'.

Outcome: NSW to provide contact details for WorkCover NSW in relation to the w ork they have recently undertaken on 'Design Issues on Safe Construction'.

AGENDA ITEM 6.5: ABCB CALENDAR OF EVENTS

The Commonwealth representative advised members that it was intended that a Building Ministers Forum meeting take place towards the end of the year although a date had not been set. It was also noted that the Federal Election may impact on timing.

The ABCB Calendar of events was noted by the Board.

AGENDA ITEM 7: OTHER BUSINESS

The Commonwealth representative informed members that the Board recommendation for a Disability Standard for Access to Premises was still being considered by Ministers. There has been recent contact at Minister Office level and it is expected that a meeting will take place between officials at both Departments. It was noted that the Disability Discrimination Commissioner, [redacted] AM had written to Minister Macfarlane in December 06. The Commonwealth representative is to meet with the Commissioner on 2 March 2007 to discuss the issues raised in the letter.

The ACT representative raised the matter of a letter that had been received by Board members in relation to smoke detectors. The Deputy GM explained that the Office had not

yet received a copy of the letter but was aware of its existence and the issues raised in the letter. The Deputy GM explained the difference between ionisation and photo-electric smoke detectors and the Office's proposed position on the matter.

It was suggested by the VIC representative that the ABCB respond to the letter on behalf of the Board and a copy of the response be circulated to all members. This would allow members to respond as appropriate in a consistent manner.

The WA representative provided a copy of two publications to members for information:

- Build a Better Future with a 5 Star House; and
- Building Standards in Western Australia.

It was explained that the second brochure would be sent out to all of WA's Local Governments to encourage them not to create new variations.

The NSW representative explained that the occurrence of non-compliant building products and materials was still an issue in NSW. He suggested that the next edition of the Australian Building Regulation Bulletin include an article on non-compliant building materials to keep those in industry aware. The Board agreed.

Action: Respond to letter from World Fire Safety Foundation regarding photo-electric smoke detectors and copy response to all members for action as appropriate.

Action: The next addition of the ABRB is to include an article on the manufacture and supply of non-compliant building materials.

AGENDA ITEM 7.1: PRODUCTIVITY COMMISION'S REPORT 'STANDARD SETTING AND LABORATORY ACCREDITATION' – IMPLICATIONS FOR ABCB

The Chair welcomed the following representatives from Standards Australia to the meeting: [redacted] AM, Chairman, [redacted] Chief Executive Officer and [redacted] Operations Manager.

The Chair spoke briefly about the Productivity Commission Report on Standard Setting and Laboratory Accreditation. It was recognised that any future negotiation of arrangements with Standards Australia (SA) including the MOU, would need to be cognisant of the report's recommendations.

The Chair then invited SA to update the Board on current initiatives and their views on any ABCB implications of the Productivity Commission Report.

The following points were made during the presentation by SA;

- SA is currently printing 500 standards per year, 600 drafts and 1700 projects are currently in-train.
- There are between 7000-8000 committee members.
- It is estimated that SA invest between $100,000 - $150,000 a year in the development of each new or revised Australian Standard.
- SA appreciated the effort and support provided by the GM in helping SA prepare for the PC review.

The Chair commented that ABCB are facing similar issues to SA such as requests to make the BCA available free of charge. SA was asked what they were doing in relation to requests to make Standards available free of charge or at a reduced cost.

[redacted] advised members that Standards are funded on a user pays approach as is the case with most other standards bodies throughout the world. SA is locked into a publishing arrangement with SAI Global for the next 7 years. Government needs to state what they want and then SA will decide how it might be provided. The issue of making Standards free of charge or significantly reducing their cost is not simple as many standards are international and are the subject of copyright arrangements.

Action: ABCB's Memorandum of Understanding with Standards Australia is to be reviewed once the Commonwealth's res ponse to the Productivity Commission's Report on Standard Setting is available. T he review is to consider the Productivity Commission's report and recent process improvements such as the Preliminary Impact Analysis process.

AGENDA ITEM 7.2: REPORT ON ROYALTIES OVERPAYMENT

The Deputy GM briefed members on the background to the royalty overpayment matter. A $250,000 discount was negotiated in favour of the ABCB. The payment will be made back to the publisher this month. Members were informed that a clause will be included in all new publishing contracts in an effort to prevent this from occurring again in future.

The Board noted the report on negotiations and agreed it was a good outcome.

AGENDA ITEM 8: PLACE AND DATE OF NEXT MEETING

The next meeting of the Board is scheduled for Thursday 31 May 2007 in Adelaide.

The next meeting of the Joint Building/Planning Working Group will be held the day before the Board meeting, Wednesday 30 May 2007 in Adelaide.

DRAFT OUTCOMES AND ACTIONS ARISING
ABCB BOARD MEETING 2007-1, 1 MARCH 2007 SYDNEY

AGENDA ITEM	OUTCOMES	ACTION OFFICER	*STATUS*
2. Record of ABCB 2006-3 Meeting and Action Arising	• The Board agreed to amend the first outcome under agenda item 4.2 of the previous meeting's minutes to ensure it reflected the amendment made to paragraph 2 regarding signoff of the BCA, as follows: *Outcome: The Board would be asked to endorse BCA amendments based on a recommendation from the BCC, that the amendment was suitable for referencing in the BCA and was compatible with any policy direction that had been set by the Board.* • With the exception of the above change the minutes of 2006-3 were confirmed as a fair and accurate record of the meeting.	[redacted] [redacted]	Done Done
3.1 Progress against 2006-7 Business Plan	• Attachment C – 2006-2007 Work Program Project Update is to be revised to ensure alignment between the 'Project' and 'Output'.	[redacted]	Done
4.1 Strategic review of BCA against COAG Principles	• Consideration is to be given to using an alternative to the term 'overly burdensome' in the public consultation document to ensure the wrong message is not being sent to stakeholders. • Consider seeking comment on the 'framework' that the BCA is administered through to ensure consistency with the COAG principle 'Minimising administrative burden'. • A final draft of the public consultation document including a description of the change between it and the draft provided in the Board papers is to be circulated to all members.	[redacted] [redacted] [redacted]	Done Done Done
4.2 Future options for the BCA's delivery	• The Board supported Option 4 and requested further analysis, noting comments from members regarding further consideration of market testing and maintaining a 'holistic' approach.	[redacted]	See agenda item 11 in 2007-2 papers.
4.3 Green Building Council of Australia	• Circulate to members a PowerPoint presentation on the role of the Green Building Council of Australia.	[redacted]	Done

AGENDA ITEM	**OUTCOMES**	**ACTION OFFICER**	***STATUS***
5.1 ABCB Committee Review	• The Office is to consider and report back to the Board on whether members of the previous Core Strategic Group be consulted on the Quantification of Performance Project as appropriate. • Under the BCC's Terms of Reference amend their responsibilities by replacing the wording 'strategy relevant to technical matters' with 'strategic policy relevant to building control matters'.	[redacted] [redacted]	Done Done
5.2 Joint Building / Planning Working Group Report	• Circulate the revised Terms of Reference (which were agreed to in principle) for the Joint Building/Planning Working Group electronically to all members. • Report back to the Board at the May meeting on how the work of the Joint Building/Planning Working Group might impact on the workload of the Office. • Request that Minister Macfarlane write to Building Ministers seeking endorsement of the Terms of Reference for the Joint Building/Planning Working Group. • State and Territory members to consult as necessary with Planning Minister and/or Department with planning responsibilities on the revised Terms of Reference for the Joint Building/Planning Working Group. • The next meeting of the Joint Building/Planning Working Group is scheduled for Wednesday 30 May 2007, prior to the next Board meeting.	[redacted] [redacted] [redacted] S/T Board Members All Members	Done Done POG endorsement received. Done
5.3 Variation Reduction Strategy	• Future reporting on the Variation Reduction Strategy is to include a break down of the categories and number of variations applicable to each State and Territory.	[redacted]	Done
5.4 National Accreditation Framework for Building Certifiers	• NT and ACT are to be consulted on corrections required to the current Building Certification Qualifications required in those Territories. • Further investigate the possibility of Building Certifiers being included, in future, on the Ministerial Declaration on Mutual Recognition.	[redacted] [redacted]	Done Done
5.5 Report on Accessible Housing	• Victorian Planning Minister to be consulted on the release of the Accessible Housing Report. • Members to be provided with advance notice of the release of the Accessible Housing Report.	[redacted] [redacted]	Awaiting advice Awaiting advice

AGENDA ITEM	**OUTCOMES**	**ACTION OFFICER**	***STATUS***
6.1 Review of Stakeholder Communications	• Members to provide comment to the Office on suggested priority areas for the Stakeholder Communication Strategy. • Office to review options for the next phase of the Stakeholder Communication Strategy noting suggestions to target those practitioners not currently using the BCA and associated education strategies. • Members to review and provide comment on the draft 'Profile of the ABCB'	All members [redacted] All members	For discussion at 2007-2 See agenda item 10 Final draft at agenda item 10
6.2 GM's Report on Recent Developments	• Circulate General Manager's report to members with the draft Minutes of ABCB 2007-1 meeting.	[redacted]	Done
6.4 Correspondence	• In light of the change of Minister, the Department of Environment and Water Resources is to be contacted regarding the release of the report 'An Assessment of the Need to Adapt Building for the Unavoidable Consequences of Climate Change'. • Outcome: NSW to provide contact details for WorkCover NSW in relation to the work they have recently undertaken on 'Design Issues on Safe Construction'.	[redacted]	Done
7.0 Other Business	• The next addition of the ABRB is to include an article on the manufacture and supply of non-compliant building materials. • Respond to letter from World Fire Safety Foundation regarding photo-electric smoke detectors and copy response to all members for action as appropriate.	[redacted] [redacted]	Done Done
7.1 Productivity Commission's Report 'Standard Setting and Laboratory Accreditation' – Implications for ABCB	• ABCB's Memorandum of Understanding with Standards Australia is to be reviewed once the Commonwealth's response to the Productivity Commission's Report on Standard Setting is available. The review is to consider the Productivity Commission's report and recent process improvements such as the Preliminary Impact Analysis process.	[redacted]	Awaiting Commonwealth consideration of PC report
8 Place and Date of Next Meeting	• Next meeting of the Board is scheduled for Thursday 31 May 2007 in Adelaide.		

Note: Agreed Board outcomes are italicised.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-1

GENERAL MANAGER'S REPORT ON RECENT DEVELOPMENTS

After covering a small number of items the GM offered to provide a written report in the interests of time. The written report follows:

1. **VIETNAM**
   ABCB Office conducted a well attended seminar on building regulations in a market economy in Hanoi in February. An MOU was signed with the Vietnamese Ministry of Construction (copy circulated to the Board separately).

2. **STAFFING MATTERS**
   The Office has 5 new starters which includes 3 new cadets

   [redacted] (previously Building Codes Queensland) and [redacted] (previously [redacted] Tasmania) have joined the ABCB as senior technical officers

3. **PRODUCT NON-COMPLIANCE**
   ABCB is still receiving representations on the issue of product non-compliance(i.e. CCURG)

   The ACCC is in the process of prosecuting insulation manufacturer Autex Pty Ltd for false claims regarding the stated 'R' rating of insulation batts.

4. **NIST RESEARCH** (National Institute of Standards and Technology (NIST) Building and Fire Research Laboratory US Government)

   [redacted] of NIST has agreed to hold discussions with State and Territory Administrations over the US work on protected elevators and the NIST recommendations from the World Trade Centre investigation and their current status relative to proposed changes to US building regulations.

   This outcome of this research may impact on the Board's Emergency Egress for All Occupants project.

5. **CORPORATE PROFILE**
   A hardcopy of the document was tabled at the Board meeting.
   This document was previously known as 'Who We Are, What We Do'. It has been updated to reflect changes to the Board, Office and work program. Some matters from the 1 March Board meeting will impact on the draft (e.g. committee review).

6. **BCA 2007 SEMINARS**
   Seminars have been conducted in half of the States and the remaining States will be completed by end of March. There has been a great response with well over 1,000 registrations (as at 22 Feb).

7. **NTS**
   National Technical Summit to be held at the end of March in Adelaide
   63 PFCs will be considered by the summit. At the 2006 Summit there was a similar number of PFCs considered.

8. NATIONAL FORUM OF BUILDING APPEALS TRIBUNAL

A meeting of the State and Territories to discuss national consistency issues relating to Building Appeals is scheduled for 3 April in Sydney. A draft agenda has been circulated. Initial responses indicate that most states will be attending.

9. ABCB CONFERENCE

The ABCB's 5th National Conference has been confirmed to be held at the Surfers Paradise Marriott Resort from 23 to 26 September 2007.

An indicative program of events at this stage is as follows:

- Conference Registration (½ day on Sunday 23);
- ABCB Conference (3 days from Monday 24 to Wednesday 26);
- Board meeting (Thursday 27).

Topics include:

- Think Today About Tomorrow - Sustainability;
- Threats & Natural Disasters in Buildings;
- Clarity & Certainty in Performance - Putting Surety in Performance; and
- Workshopping on the Top 10 Technical Enquiries to the ABCB Office.

The call for papers has closed and speakers and topics for the plenary component are now being confirmed. We have already received over 80 Expressions of Interest and promotion will continue with the Conference program and registration form being finalised in April and publicised with the next ABRB in May.

Agenda Item 3: JOINT BUILDING / PLANNING WORKING GROUP REPORT

FOR INFORMATION

IGA PRINCIPLE

JOINT BUILDING / PLANNING WORKING GROUP REPORT corresponds with the IGA Principle of ***GREATER NATIONAL CONSISTENCY INCLUDING VARIATION REDUCTION STRATEGY***

RECOMMENDATION

It is recommended that the Board note the oral report provided by the Chairman on the Board's Joint Building / Planning Working Group meeting of 30 May 2007.

BACKGROUND

At the Board meeting of 24 November 2006, it was agreed to set up the Joint Working Group (JWG) with officials from Local Government and Planning Ministers Council (LGPMC) to examine issues relating to local government, planning and sustainability.

The Board considered the outcomes of the JWG at ABCB 2007-1 and agreed on the Terms of Reference. The JWG has met on three occasions prior to ABCB 2007-2. The most recent meeting was held on 30 May 2007.

PROGRESS

Progress to-date covers three main areas.

National Implementation Model

The JWG developed a draft National Implementation Model (NIM). The NIM will assist in the delineation of responsibilities for the national, jurisdictional or local government regulation of building and planning controls. The NIM will also guide policy makers' choices about the appropriate mechanisms for the implementation of initiatives that apply to environmental performance in the built environment. It is proposed that a Senior Officials Group be established to administer the NIM and ensure coordination and exchange of information between the relevant Ministerial Council areas.

Empirical study into Local Government Intervention

The JWG working group has agreed on a strategy for the empirical study. The study will involve the identification of interventions from Commonwealth, State, Territory and Local Government, quantify the interventions, and determine the rationale for the interventions. This study will be complete by mid August 2007.

Suitability of sustainability tools

One of the objectives of the JWG is to determine the suitability of sustainability tools as part of any national action framework, including examination of BASIX as a national tool. The JWG has developed a project scope of this study. The study will be complete by mid August 2007.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 4: VARIATION REDUCTION STRATEGY

FOR GUIDANCE

IGA PRINCIPLE
VARIATION RED UCTION STRA TEGY corresponds with the IGA Principle of ***GREATER NATIONAL CONSISTENCY INCLUDING VARIATION REDUCTION STRATEGY***

RECOMMENDATION

It is recommended that:

- each of the nine jurisdictions provide to the Office by 1 August 2007 a comprehensive list for inclusion in the appendices of BCA 2008 of all jurisdictional mandatory technical requirements defined as those that affect the design and construction of buildings outside the BCA and that address life safety, health, amenity and sustainability;

- the Board give priority in BCA 2008 and BCA 2009 to removing all State or Territory provisions in BCA 2007 that vary or add to a matter that is already regulated in the national BCA, including variations embedded within additions; and

- the Board agree to address jurisdictional mandatory technical requirements affecting buildings that fall outside the BCA and to eliminate these variations in BCA 2010 and BCA 2011; and

That the Board note:

- the impact that variations outside the BCA have on the ABCB's ability to eliminate all BCA variations by 2011 and the need to resolve this matter once the work of the Joint Building/Planning Working Group to establish a clear delineation between building and planning controls progresses further; and

- the attached graphic 4-step approach (attachment 2) to the achievement of a positive outcome for the Variation Reduction Strategy (VRS) in 2011.

OVERVIEW

The VRS is the vehicle to deliver on the Board's strategic commitment to eliminate all BCA variations by 2011. The VRS has delivered a modest reduction of variations in BCA 2007, with several further reductions ear-marked for BCA 2008.

Three issues now need to be addressed by the Board to help guide the project.

First, we need to set priorities. Our analysis of variations within State and Territory Administrations has raised an important question regarding what constitutes a variation for the purposes of the VRS and where we should be focussing our efforts between now and 2011.

Second, the extent of consolidation of variations differs between jurisdictions. While some jurisdictions have consolidated all of their mandatory requirements affecting buildings into the BCA, most jurisdictions still have many variations and additions outside the BCA.

Third, there is a real need to manage local sensitivities about the lengthy time frames inherent in the national BCA model and political and community pressures to act quickly, particularly in respect of societal issues such as sustainability and climate change. A mechanism will be needed soon on handling this dimension. The WA Board member has previously outlined such an approach and the way ahead on this aspect could be informed by that earlier work with which the Board is familiar.

The direction the Board takes on these three issues will influence the focus of the project on some jurisdictions and not others in the immediate term. But, all jurisdictional variations will be eliminated if the comprehensive national process identified in this paper is committed to between now and 2011.

PROGRESS TO DATE

The Office has met with each Administration to develop proposals for dealing with variations. These proposals will be reported to the Board in August 2007 and subsequently to Ministers following consultation with Administrations.

A breakdown of variations in BCA 2007 is at **Attachment 1**. Variations are reported by topic for ease of analysis. The topics can be expanded out into sub-variations. These, too, will of course need to be addressed in detail.

INTERPRETATION OF "VARIATION"

The meaning of "variation" differs between Administrations. A consistent interpretation would be helpful down the track and, in the first instance, there needs to be agreed prioritisation of variation reductions to facilitate progress with the VRS.

For the time being, the ABCB Office has interpreted "variation" to include any State or Territory provision in the BCA that varies or adds to a matter already regulated in the national BCA, including variations embedded within additions. We now seek agreement from the Board to give priority to variations falling into this categorisation.

VARIATIONS IN THE BCA

There are broadly three types of variations in the BCA:

- individual State and Territory variations based on natural phenomena such as geographical, geological or climatic factors;
- additions to BCA requirements that arise from the consolidation of mandatory requirements affecting buildings; and
- individual State and Territory variations based on local practices or preferences, community expectations and/or policy positions of States and Territories.

The IGA recognises that the first two BCA categories are not so problematic. The BCA needs to address natural phenomena in a cost effective manner. For example, the Northern Territory variation relating to termite risk management in areas where the Mastotermes darwiniensis species is prevalent could be onerous in areas where they are not prevalent. It may be possible to incorporate this type of variation into the national BCA under the VRS.

Additions to the BCA in State and Territory appendices are encouraged. Additions are an effective mechanism for consolidating regulation in accordance with commitments made in the IGA. This strategy assists practitioners in particular jurisdictions by providing a one stop shop approach to building regulations.

However, the third BCA category is more problematic and the persistence of long standing State and Territory variations is of concern when they override the BCA.

Past efforts to reduce variations in the BCA have been successful, with almost 80% of variations reduced between 1990 and 2003 (359 variations reduced to around 100). But, in recent years, the overall reduction in variations has been offset to some extent by the emergence of new variations, both within and outside the BCA.

VARIATIONS OUTSIDE THE BCA

There are two types of variations *outside* the BCA:

- variations and additions in State, Territory or Commonwealth legislation, such as regulations and codes; and

- variations and additions in Local Government legislation, such as planning schemes and local laws.

Variations outside the BCA are of particular concern as they are often not subject to the same level of rigour as the BCA in their development, they have the potential to fragment the regulatory environment and consequentially impose unnecessary cost burdens on industry and the community.

With the VRS now underway, a potential impediment to the Board's 2011 commitment has become evident. This relates to the degree to which each jurisdiction may be targeted by the VRS. Jurisdictions that have consolidated all of their mandatory requirements affecting buildings into the BCA typically have large appendices and many variations. On the other hand, jurisdictions that have most of their variations outside the BCA may have small appendices and few variations.

As the VRS has to date only targeted variations *within* the BCA, those jurisdictions that have consolidated into the BCA are targeted more than those who have not. Similar variations to those consolidated into the BCA can often be found outside the BCA in those jurisdictions that have not consolidated. These non-consolidated variations are not covered by the VRS at this time.

The Options

Options available to address variations outside the BCA could be to:

1. consolidate all existing and future mandatory requirements into the BCA;

2. de-consolidate BCA variations by moving them outside the BCA; or

3. restrict the VRS scope to deal only with BCA variations not the result of consolidation.

Option 1 best reflects Productivity Commission recommendations and aligns with the commitments made by Building Ministers in the IGA and reinforced by COAG. Neither of the other two options achieves such a comprehensive outcome. However, the reality of governments' needing to react quickly to emerging issues, often with a regulatory response, is a valid issue that needs to be managed.

Option 2 has the ability to deliver a quick reduction in BCA variations. But, the consequence would be that variations would be transferred elsewhere, becoming less accessible and transparent to users and more fragmented. Jurisdictions would be free to introduce new mandatory requirements affecting buildings without the disciplines inherent in Option 1.

Option 3 would reduce the scope of variations to be dealt with under the VRS to those that have not been consolidated into the BCA from elsewhere. By reducing the scope, this option has the ability to complete the VRS more quickly than Option 1 but is also a second order outcome that falls short of the Board's 2011 commitment.

Recommendations 6.1 and 6.2 of the Productivity Commission's 2004 report *Reform of Building Regulation* called for all mandatory requirements affecting buildings to be incorporated into the BCA and suggested that each jurisdiction (including the Commonwealth) could do this using BCA appendices. The report found that consolidation and consistency would help achieve quality regulation, including:

- accessible, transparent and accountable regulations;
- integration and consistency with other laws;
- effective communication of regulations; and
- enforceable regulations.

Building Ministers have incorporated these, and other, recommendations into the IGA by committing their jurisdictions to:

- take reasonable steps to consolidate all of their State or Territory's mandatory requirements affecting the design, construction and performance of buildings into the consolidated version of the BCA;
- use the BCA to set the minimum requirements for design, construction and performance of buildings throughout Australia;
- report areas of duplication and inconsistency in State and Territory legislation and identifying opportunities for greater consistency in building regulations between the States and Territories; and
- restrict any new variations by, as far as practicable:
  A. limiting variations to those arising from particular geographical, geological or climatic factors, as defined in the BCA;
  B. requiring that any variations be subject to a regulatory impact assessment; and
  C. requiring that any variation be approved by the State or Territory Minister.

At its February 2006 and April 2007 meetings, COAG identified building regulation as a "hot spot" area where overlapping and inconsistent regulatory regimes are impeding economic activity and reinforced the commitments made in the IGA to achieve national consistency in building regulations.

The report *Consolidation of Building Regulations in Australia* , which was commissioned by the ABCB's predecessor, AUBRCC, in 1992 could be a useful starting point to assist in consolidating existing mandatory requirements affecting buildings.

The preferred Option 1 involves the consolidation of all *existing* mandatory requirements affecting buildings into the BCA and to consolidate all *future* mandatory requirements affecting buildings into the BCA.

Option 1 involves considerable effort by the States, Territories and Commonwealth to consolidate all of their existing mandatory requirements affecting buildings into the BCA. In some cases, ABCB assistance may be necessary. Once consolidated, variations could be dealt with under the VRS.

Option 1 also involves the need for an agreed approach to manage the transition from local to national action when new regulatory issues emerge.

Moreover, there is overlap between the question of what constitutes a "mandatory requirement affecting buildings" and the work currently being undertaken by the Joint Building/Planning Working Group (JWG) to establish a clear delineation between building and planning controls. Any future consolidation framework would need to incorporate the findings of the JWG and decisions taken by Ministers in response.

It is also recommended, as a first step, that all nine jurisdictions include a comprehensive list of all mandatory requirements affecting buildings outside the BCA in appendices to BCA 2008, along the lines of the ACT (see example with these papers) and Victorian models. This would make such requirements more accessible and transparent to BCA users.

ATTACHMENT 1

VARIATIONS IN BCA 2007 BY TOPIC

AUSTRALIAN GOVERNMENT

Volume One	Volume Two
Nil	Nil
0 0	

NEW SOUTH WALES

Volume One	Volume Two
Swimming pool access	Bushfire areas
Bushfire areas	Salinity
Places of public entertainment	Swimming pool access
Fire hazard properties	Earthworks
Large isolated buildings	Masonry for class 10a buildings
Compartmentation and separation of class 9c buildings	Energy efficiency
Protection of openings in external walls	
Bounding construction	
Smoke hazard management in class 9b buildings	
Monitoring of smoke and fire detection systems	
Microbial (legionella) control	
Theatres, stages and public halls	
Temporary structures	
Maintenance	
Energy efficiency	
15 6	

VICTORIA

Volume One	Volume Two
Early childhood centres	Energy efficiency
Aged care buildings	
Sprinklers in occupancies of excessive fire hazard	
Monitoring of smoke and fire detection systems	
Natural lighting in class 9b buildings	
Places of public entertainment	
Fire safety in class 2 and 3 buildings	
Energy efficiency	
8 1	

QUEENSLAND

Volume One	Volume Two
Swimming pool access	Termite risk management
Timber	Swimming pool access
Sound transmission and insulation	Timber
	Sound transmission and insulation
	Energy efficiency
	Windows in cyclonic areas
3 6	

SOUTH AUSTRALIA

Volume One	Volume Two
Access for people with disabilities	Salinity
Salinity	Drainage
Provision of floor wastes	Concrete
Waterproofing of wet areas	Waterproofing of wet areas
Sanitary facilities in schools	Bushfire areas
Location of sanitary facilities	Energy efficiency
Bushfire areas	SA Housing Code
Space between buildings	Space between buildings
Attachments to buildings	
Bulk grain storage facilities	
Farm buildings	
Maintenance	
Energy efficiency	
13 8	

WESTERN AUSTRALIA

Volume One	Volume Two
Swimming pool access	Swimming pool access
1 1	

TASMANIA

Volume One	Volume Two
Automatic fire detection systems	Non-combustible roof coverings
Early childhood centres	Ventilation of non-flushing toilets
Ventilation of non-flushing toilets	Energy efficiency
Fixed natural ventilation	
Swimming pools	
Projections over ways	
Workplaces	
Food premises	
Dining rooms and bar rooms	
Meat premises	
Farm dairy premises	
Pharmacies	
Hospitals and nursing homes	
Skin penetration premises	
Mortuaries	
Foundries	
Premises for manufacture or processing of glass reinforced plastic	
Premises for production or processing of isocyanates	
Premises for electro-plating, electro-polishing, anodising or etching	
Lead processing premises	
Spray-painting or spray-coating booths	
Electricity distribution substations	
Premises for storage of dangerous goods	
Hairdressers premises	
Temporary structures	
25 3	

NORTHERN TERRITORY

Volume One	Volume Two
Swimming pool access	Swimming pool access
Swimming pool drainage	Swimming pool drainage
Termite risk management	Termite risk management
Metal roofing in cyclonic areas	Metal roofing in cyclonic areas
Strengthened area in cyclonic areas	Masonry veneer in cyclonic areas
Masonry veneer in cyclonic areas	Sound transmission and insulation
Sprinklers in class 9a buildings	Energy efficiency
Sound transmission and insulation	
Food premises	
Skin penetration premises	
Mortuaries	
Maintenance	
Energy efficiency	
13 7	

AUSTRALIAN CAPITAL TERRITORY

Volume One	Volume Two
Awnings and projections	Nil
1 0	

TOTAL

Jurisdiction	Volume One	Volume Two
Australian Government	0	0
New South Wales	15	6
Victoria	8	1
Queensland	3	6
South Australia	13	8
Western Australia	1	1
Tasmania	25	3
Northern Territory	13	7
Australian Capital Territory	1	0
Total 79		**32**

4-STEP APPROACH TO THE VRS

Current	Provide by August 2007	For inclusion in BCA 2008	BCA 2009	BCA 2010 & BCA 2011

All existing and future jurisdictional mandatory requirements are consolidated into BCA
All variations are eliminated.

State, Territory and Commonwealth Appendices to include reference to jurisdictional legislation which affects the design and construction of buildings.

States, Territories and Commonwealth to provide a comprehensive list of all mandatory jurisdictional legislation affecting the design and construction of buildings

Continue to remove State and Territory provisions in BCA 2007 that vary or add to a matter already regulated by the national BCA (by BCA 2009)

(e) Storage tanks and other associated fittings: AS 1692.

Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

In addition to the requirements of the ACT *Building Act 2004*, administered by ACT Planning and Land Authority (PLA) builders and designers should be aware of other legislation which contains building requirements.

The following is a list of some of the other relevant legislation:

1. **Building Control Legislation**

   Public Health Regulations 2000 (ACT Health)

2. **Fire Safety Regulations**

   Dangerous Substances ACT 2004 (Chief Minister's Department — "CMD")

   Emergencies Act 2004 (Department of Justice and Community Safety — "JACS")

3. **Environmental Control and Emission Standards**

   Environmental Protection Act 1997 (Territory and Municipal Services — "TAMS")

4. **Licensed Premises**

   Food Act 2001 (ACT Health)

   Liquor Act 1975 (JACS)

   Licensing Standards Manual (JACS)

5. **Occupational Health and Safety**

   Safe Demolition Work Code of Practice (CMD)

   Occupational Health and Safety Act 1989 (CMD)

6. **Public Housing**

   Housing Assistance Act 1987 (Department of Disability, Housing and Community Services — "DHCS")

7. **Scaffolding and Temporary Works**

   *Scaffolding and Lifts Regulations 195*0 (CMD)

8. **Urban Design Standards, Land Title and Tenure**

   ACT (*Planning and Land Management) Act 1988* (Comm) (National Capital Authority — "NCA", PLA)

   City Area Leases Act 1936 (For leases before the Land Act commenced) (PLA)

   Common Boundaries Act 1981 (PLA)

   Land (Planning and Environment) Act 1991 (PLA)

   National Land Ordinance 1989 (Comm) (NCA)

   Unit Titles Act 2001 (PLA)

9. **Utility Services and Urban Infrastructure**

   Gas Safety Act 2000 (PLA)

   Roads and Public Places Act 1937 (TAMS)

   Utilities Act 2000 (PLA, JACS, CMD, TAMS)

   Water and Sewerage Act 2000 (PLA)

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 5: STRATEGIC REVIEW OF THE BCA AGAINST COAG PRINCIPLES

FOR INFORMATION

IGA PRINCIPLE

STRATEGIC REVIEW OF THE BCA AGAINST COAG PRINCIPLES corresponds with the IGA Principle of ***MINIMUM PERFORMANCE-BASED CODES TO ACHIEVE HEALTH, SAFETY, AMENITY AND SUSTAINABILITY OF BUILDINGS***

RECOMMENDATION

It is recommended that the Board note progress.

INTRODUCTION

Background

The Building Minister's Forum held on 25 July 2006 recommended the inclusion of this project in the ABCB 2006/07 work program.

Reduction of regulatory burden is an aim of the IGA. The Strategic Review project assesses the BCA against the COAG *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies* to identify provisions that are redundant or greater than the minimum necessary to achieve the ABCB objectives.

The Board considered the Strategic Review project at ABCB 2006-3, endorsed the proposed approach and agreed to closely monitor the project, including Board Member involvement in State consultations.

Meetings have been held with the Tasmanian, Victorian, South Australian, Queensland, Northern Territory and ACT Board members, Australian Institute of Building Surveyors, Property Council of Australia, Master Builders Association, Housing Industry Association, and the Australian Local Government Association. The Board's Core Strategic Group (CSG) was also consulted. The comments received from stakeholders and the CSG informed the review strategy and the public consultation document.

At ABCB 2007-1, the Board agreed to the release of the public consultation document. Letters and emails were sent to major industry and government stakeholders, the CSG and the BCC. Information on the review and a copy of the public consultation document were placed on the ABCB website. The closing date for comment was 11 May 2007, however late submissions are still being accepted.

In parallel with the public consultation, an ABCB Office workshop was held on 11 April 2007 to contribute to the review. Once the consultation process is complete, the outcomes of the workshop will be combined with the public input, evaluated and included in the final report to the Board.

The Review operates in parallel with other ABCB projects

A number of responses to the review identified matters considered redundant or excessive which are the subject of separate active ABCB projects. Many of these projects seek to improve the BCA or reduce the regulatory burden and are therefore consistent with this review. These projects include the variation reduction strategy, the National Technical Summit, the ongoing BCA review and amendment process including quantification of performance requirements, the BCA research program, and international liaison. This review is not intended to replace these projects but to operate in parallel. In some cases, these other projects are more appropriate to deliver the desired COAG reforms. For example, the project to reduce State/Territory variations is consistent with a number of COAG Principles including minimum national standards and minimising regulatory burden. However, the review of State/Territory variations is not within the scope of this review. Likewise, the quantification of performance requirements is consistent with the COAG Principles of predictability of outcomes, and flexibility of standards and regulations, but is being progressed outside of this review.

Preliminary Analysis of Responses

A preliminary analysis of responses identifies five possible categories-

1. matters (primarily deletions or minor amendments) that could be addressed in the next BCA amendment process
2. matters requiring some further work, consultation and analysis
3. matters requiring significant work for consideration on the future work program
4. matters not supported
5. matters dealt with by another active ABCB project.

Proposals received to date include deleting the minimum ceiling heights for dwellings, deleting the maintenance provisions, deleting the natural light requirements for certain habitable rooms, including tolerance provisions, rationalising the fire hazard requirements for floors, reviewing restrictions on glued/laminated timber in non-fire isolated stairways, permitting further concessions for encroachments and structures between a house and the property boundary, and reviewing the heights of house floor concrete slabs above ground level.

Final Report

A final report will be completed by end June 2007 for consideration at the next Board meeting, to meet our obligation to Ministers on regulatory reform.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 6: PROGRESS AGAINST 2006-07 BUSINESS PLAN PERFORMANCE INDICATORS (INC PROJECT STATUS AS AT MAY 2007)

FOR INFORMATION

IGA PRINCIPLE

PROGRESS AGAINST 2006-7 BUSINESS PLAN PERFORMANCE INDICATORS INCLUDING PROJECT STATUS AS AT MARCH 2007 corresponds with the IGA Principle of ***DIRECTION SETTING TO ALIGN WITH STRATEGIC PRIORITIES AS ESTABLISHED BY MINISTERS***

RECOMMENDATION

It is recommended that the Board note the progress made against 2006-07 Business Plan Performance Indicators and the Work Program as at May 2007.

BACKGROUND

It was agreed at Board meeting 2006-3 that this item become a standing item to ensure that the Board is kept informed of progress against the current Work Program and Performance Indicators. Progress against each of the Performance Indicators is provided below.

PROGRESS AGAINST 2006-07 PERFORMANCE INDICATORS	
Performance Indicator	**Progress**
Landslide Hazards non-regulatory guideline published by December 2006	Completed.
BCA 2007 delivered by May 2007 on budget and in line with COAG Principles	Completed.
RIS processes reviewed and improved by October 2006	Completed.
Variation Reduction Strategy initiated and implemented by May 2007	Completed. Further work required to deliver more reductions in BCA 2008 & BCA 2009, refer agenda item 4.
Existing BCA evaluated against COAG Principles by June 2007	Report to be completed by end June 2007; refer agenda item 5.

2006-07 Work Program Project Update

Attachment A provides a summary of the Work Program Projects including their status/last action, associated output, ABCB contact officer and expected timeframes.

ATTACHMENT A

2006-2007 Work Program Project Update

Project Name	*Status / Last Action*	*06-07 Output*	*Contact Officer*	*Timeframes*
1. Maintain and Update the BCA	BCA 2007 published and distributed to subscribers. Preliminary work commenced on the development of BCA 2008	Improved and updated BCA core technical requirements.	[redacted]	Proposals for Change to the BCA were discussed at the 2007 National Technical Summit at the end of March
	Protective coatings for steelwork – Project scoping work underway			Proposed for inclusion in BCA 2008
2. Quantification of BCA Performance Requirements	Draft report on Quantification of Fire Provisions in the BCA completed. Report includes proposed strategy for quantification in the fire area over next 3 years. ABCB Office to provide comments on Draft report prior to BCC paper and Board consideration. Further development of Stormwater and Glass Human Impact in progress. Indoor Air Quality consultation paper under development. Room heights part of principle in paper to board for reduction of variations and additions.	Measurable BCA performance requirements and/or additional verification methods.	[redacted]	Paper for Quantification of performance of Fire Provisions to be developed for BCC after Brian Meacham's report is finalised. BCC to consider mid to late 2007
3. BCA Referenced Documents	For BCA2008, Standards Committees are proposing changes to eight referenced documents. Six old referenced documents are also planned for deletion from BCA2008. Participation in development of reference documents by staff continues to shows dividends in the gate keeping role to prevent regulatory creep through referenced documents. Also, we have the opportunity, in consultation with the States and Territories to further reduce variations.	BCA referenced documents including inter alia Australia Standards that are suitable for regulatory use.	[redacted]	Changes proposed for BCA2008 must be finalised by end of August 2007
4. Energy Efficiency	Minor technical enhancements and clarification of some provisions agreed for BCA 2007. Draft Handbook on the national application of the energy efficiency provisions in existing buildings is being developed.	Progress in the resolution of technical and national consistency issues for existing efficiency measures.	[redacted]	As per 'Maintain and update the BCA'. Existing building handbook complete, considering publication options
5. Salinity and Acid Sulphate Soils	Consultation Documents on Salinity and Acid Sulphate Soils approx 80% completed. Final document to be submitted for BCC input and Board decision when completed	Advise Board on whether BCA should address resistance of buildings to salinity and acid-sulphate soils.	[redacted]	Consultation paper by June 2007
6. Strategic Research Activities	Research into slips, trips and falls. An open tender process has been undertaken, and a selection has been made. Monash University Accident Research Centre to under take research.	Research to inform decisions on future BCA and non-regulatory measures.	[redacted]	To be completed by October 2007
	The CRC Construction Innovation (CRC CI) has completed field testing on Stage 2 of the way finding project. The final report is due to be published by CRC CI		[redacted]	Final report complete. CRC CI aim to publish in July 2007
	JCU has submitted a final report on Cyclone Larry. Since then Cyclone George impacted on the Western Australia coast and a report from JCU was received in April. A public education campaign on lessons learnt from both investigations is to be developed for joint delivery with JCU.		[redacted]	A schedule of proposed seminars dates and content to be available June 2007
	JCU is producing an enhanced probabilistic model to address damage mitigation from cyclones. The interim report has been submitted to the ABCB.		[redacted]	To be completed by Sept. 2007
	ABCB has agreed to become a funding partner with Monash University Accident Research Centre to investigate architectural glass related injuries. Australian Research Council funding.		[redacted]	To be completed in Dec. 2008
7. Emergency Egress for All Occupants	Awaiting outcomes of the research being conducted by the National Institute of Standards and Testing (USA).	Advise Board on the development of provisions for	[redacted]	Outcomes due mid 2007

Project Name	*Status / Last Action*	*06-07 Output*	*Contact Officer*	*Timeframes*
		emergency egress for all occupants including people with disabilities.		
8. Fire Safety (Sprinklers) in Buildings Accommodating Aged Persons	Consultation paper 75% completed.	A review of fire safety provisions in residential care accommodating the aged, children and people with disabilities to determine whether sprinkler protection is required.	[redacted]	Consultation paper to be finalised by June 2007
9. Class 1b and 3 Building Classification and Use	Consultation paper 90% completed.	Revised BCA provisions to clarify the use of Hotels and Boarding houses as special accommodation, including fire safety measures.	[redacted]	Consultation paper to be finalised by June 2007
10. Review of Wire Balustrade Provisions	Contract for research to be signed in May 2007. Draft change to BCA plus findings from research including more choice of wires sizes for balustrades expected to be ready for BCC consideration by August 2007.	Refined BCA wire balustrade provisions.	[redacted]	Results of research to be considered by BCC in August 2007
11. Fire Safety in Early Childhood Centres	A draft report has been received. Statistical data required for inclusion in the draft report is yet to be provided by AFAC	Scoping study to determine if there is a need to review the BCA Fire Safety Provisions for Early Childhood Centres.	[redacted]	Draft report to be considered by BCC at July meeting
12. Definition of Class 2 and Class 3 Buildings	Responses received currently being collated for preparation of consultation paper	Revised BCA provisions to clarify classifications for Class 2 and 3 buildings.	[redacted]	Consultation paper to be finalised by June 2007
13. Control of Smoke Spread Through Penetrations	Consultation paper 80% completed	Scoping study on whether there is a need for the BCA to address smoke spread through penetrations in building elements.	[redacted]	Final report paper due by 1 June 2007
14. Scoping Work on External Noise	Consultation paper 80% completed	Scoping study to determine if there is a need for a regulatory or non regulatory solution.	[redacted]	Consultation paper to be finalised by June 2007
15. Use of Fire-Retardant Coatings	A Consultation Paper has been sent to the BCC for consideration. Any resulting amendments are scheduled for inclusion in BCA2009.	Revised BCA provisions to remove restrictions on use of fire retardant coatings.	[redacted]	Response due from BCC early June

ATTACHMENT A

Project Name	Status / Last Action	06-07 Output	Contact Officer	Timeframes
16. Strategic Review of the BCA against COAG Principles	Refer Agenda Item 5.	Progressive strategic changes to BCA to reflect contemporary and future regulatory needs.	[redacted]	Review will be complete by June 2007.
17. Building Sustainability	AGO-funded scoping studies on building materials and water efficiency are complete. Refer Agenda Item 3. Joint Building/Planning Working Group considering approach to sustainability and climate change.	A strategic framework for addressing building sustainability issues, informed by scoping studies undertaken with AGO/DEH.	[redacted]	Scoping study report on water and materials published May 2007. ABCB currently evaluating studies and will report at ABCB 2007-3.
18. Access for People with Disability	In June 2005 the Board provided advice to the Federal Industry Minister and Federal Attorney-General on changes to the BCA to allow it to form the basis of a Premises Standard. In March 2006, a revised RIS on the Board's proposal was provided to Ministers to assist them in their consideration of the proposals.	Respond to Government policy direction on disability access to buildings as it applies to the BCA.	[redacted]	Awaiting response from Federal Ministers
19. Protection of Buildings from Threats and Natural Disasters	Monitor development of Geosciences Australia hazard data collection under COAG and Emergency Management Australia and through Technical Risk Assessment Advisory Committee (TRAAC) meetings and National Flood Risk Advisory Group (NFRAG).	Assessment of BCA implications arising from protection of critical infrastructure.	[redacted]	Attend TRAAC and NFRAG meetings and participate in development of general guideline 2007.
	Bushfires – SAI Committee is still in the process of reviewing AS 3959. Workshop convened between Standards Committee and S&T Administrations to resolve outstanding issues on site assessment method. Adoption of a revised standard will be subject to favourable outcomes from a RIS to be commissioned by the ABCB. Stage 1 of the RIS (collection of information on building losses and building activity in bushfire-prone areas) has commenced.		[redacted]	Awaiting finalisation of AS 3959 by SAI committee
20. Buildings in Flood Prone Areas	Consultation paper 90% completed.	Discussion paper and impact assessment for protection of buildings in flood prone areas.	[redacted]	Final Consultation paper by June 2007.
21. Regulation Impact Assessment	• RIS Protocol communicated to all industry stakeholders in February. No significant feedback has been received. The Office will proceed to disseminate the Protocol more widely. • On-going liaison with Standards Australia on implementation of 'good practice' Preliminary Impact Assessment, including revision of Protocol for the Development of BCA Referenced Documents. • Financial Analysis Procedure component of ABCB Impact Assessment Manual nearing completion	Enhanced RIS processes in consultation with OBPR, including RIS Protocol and Manual and impact assessment of all regulatory processes.	[redacted]	Agreement on revised Referenced Document Protocol to be sought by June. Impact Assessment Manual due for completion by June.
	AS 3959 Construction in Bushfire-prone areas: as noted in (19), the contract for Stage 1 of the RIS (data collection) is currently underway and due for completion at the end of May. Stage 2 (impact assessment of revision) will be undertaken upon finalisation of the revised Standard.		[redacted]	Stage 1 of RIS to be finalised by end of May. Stage 2 subject to finalisation of Standard
	AS 2118.1 Fire Sprinklers: Revised Standard rejected by BCC due to insufficient impact analysis. Proposed RIS of Standard on hold, subject to development of new BCA-referenced document for Fire Sprinklers.		[redacted]	New provisions to be developed and impacts assessed for consideration for BCA 2009.
	AS 1170.4 Earthquake actions: Revised Standard rejected by BCC due to insufficient impact analysis. Independent Cost Benefit Analysis undertaken with results indicating net benefits. BCC satisfied with revised assessment. OBPR requested minimal additional work to satisfy RIS requirements. Consultation RIS being developed and expected to be included with BCA Public Comment Draft (June/July).		[redacted]	RIS to undergo Public consultation during June / July. Final RIS due by September.

ATTACHMENT A

Project Name	*Status / Last Action*	*06-07 Output*	*Contact Officer*	*Timeframes*
22. Study of Stakeholder Communication Strategy	In response to the study, Agenda Item 10 details a proposed ABCB Stakeholder Communication Strategy	Current stakeholder communications activities identified, documented and where required, improved.	[redacted]	Seeking endorsement of proposed strategy at 31 May 2007 Board Meeting
23. Corporate Financial Services	ABCB financial position tracking well (refer Agenda Item 13).	Financial, HR and administrative services including Business Management and Records Management Systems.	[redacted]	Monthly reporting to DITR, quarterly reporting to Board and annual financial statements prepared.
24. Reduction of BCA Variations	Meetings held with each State and Territory Administration to develop proposals for dealing with each variation. Report on proposals being prepared for endorsement from Administrations and Board. Sixteen variations deleted in BCA 2007 and numerous variations marked for deletion in BCA 2008.	BCA variations identified for resolution in consultation with States and Territories and annual report to Ministers.	[redacted]	Report on proposals to be completed by early June.
25. National Consistency in Technical and Administrative Systems	A meeting of the National Forum of Building Appeals Tribunals was held in April and minutes are available. The ABCB is also involved in other national consistency initiatives such as the Development Assessment Forum and Australasian Building Certification Forum.	Interaction with existing national forums and control authorities to facilitate a nationally consistent approach to building regulations.	[redacted]	Attending relevant meetings on an as required basis and providing relevant feedback as appropriate.
26. Building Product Certification - CodeMark	SAI Global accredited as a CodeMark Certification Body. Global Mark accredited as a CodeMark Certification Body. Three organisations are awaiting accreditation as a CodeMark Certification Body. NZ are yet to launch CodeMark, NZ anticipate launching CodeMark by 1 July, currently working with DBH NZ on joint scheme rules and attendance at DesignBuild Australasia Expo in Sydney...	Management and facilitation of third party product certification scheme.	[redacted]	Scheme Rules finalised. NZ launch on I July. Attendance at DesignBuild to market CodeMark 3-6 June.
27. Non Regulatory documents	Handbooks on existing buildings and structural engineering software under development.	Non-mandatory guideline documents on matters not suitable for regulation.	[redacted]	Both handbooks complete. Publication options to be considered at July 2007 BCC meeting.
28. BCA Advisory Service	A new database has been developed to manage the Advisory Service. The system enables detailed monitoring and reporting of enquiries which now average over 20 per day. Refer Agenda Item 10 for further background on usage	BCA advice to subscribers, practitioners and the general community.	[redacted]	On-going service to stakeholders
29. BCA Awareness and Training	BCA 2007 National Seminar Series was successfully conducted with 1,270 attendees and preparation has commenced for 2008. Energy Efficiency Resource Kit for housing has been released and commercial module expected to be available in June 07. Advertising for the 2008 ABCB Cadetship has commenced.	Seminars, training resource kits and other mechanisms to enhance awareness of the BCA for industry associations, education providers and administrations.	[redacted]	BCA 2008 Seminars to commence in Feb 2008 and preparation (venue bookings etc) has commenced.

ATTACHMENT A

Project Name	Status / Last Action	06-07 Output	Contact Officer	Timeframes
30. BCA Marketing and Promotion	The major recommendations in the Principal Publisher Marketing Communications Strategy have been implemented with a review to commence early 2007 in alignment with the Stakeholder Engagement Strategy as well as the new Publisher and Third Party Tender. The ABCB's core technical magazine, the ABRB, has continued to broaden in content development and a widened market reach. Recently the Office has engaged Winter Communications to undertake an editorial review of the publication and assist in raising advertising revenue. The Office has also put together packages for the State & Territory Administrations to assist with providing current information to practitioners relating to BCA 2007 and related publications as well as providing them with content and graphics to aid update their websites.	Raised awareness of the BCA and other ABCB activities.	[redacted]	30 June 2007 (ongoing). Distribution of State Admin BCA Information Packages – Jan 07, ABRB commissioned advertising – Nov 06.
31. ABCB National Conference	A Call for Papers and Expression of Interest form were released in October seeking an indication from potential delegates, speakers and sponsors. Contracts with the venue, financial management, accommodation providers and off site venues have all been signed and an accompanying persons program options will be discussed at the next meeting. A software upgrade and secretariat training has been finalised in the online registration package and promotional material is currently being sourced. The trade display provider has been acquired and negotiations are currently underway with potential Conference sponsors. Further program and speaker details will be confirmed in the registration package which is due out in April 2007 until then a concentrated marketing campaign will ensue.	Delivery of an ABCB Conference supported by industry.	[redacted]	A National Conference to be held in September 2007.
32. Student Scholarship Program	The Student Research Program is being funded at $25,000 a year to fund research by undergraduate and postgraduate students. Currently 3 students engaged in the program.	Scholarship program offering ABCB employment experience for building professional students.	[redacted]	Student research program is currently being marketed to relevant tertiary institutions.
33. International Code and Research Collaboration	As a result of the IRCC meeting in Beijing, the findings of the IRCC workshop have been published and placed on the IRCC website www.ircc.gov.au Copies have been sent to the BCC and the Board. At the Beijing meeting, it was agreed that countries should pool resources and undertake studies into quantification of performance and the development of a guideline on the development of good practice performance based regulatory systems. The next IRCC meeting is in Austria and a workshop on the quantification of performance is planned.	Access to international research and regulatory developments.	[redacted]	October 2007
34. Japan / Australia Regulatory Cooperation	A guideline (including information on the Japanese Evaluation Body) for building material / system manufactures exporting to Japan is being developed in collaboration with DITR. The guideline will be completed by August 2007 and released at an industry workshop in September 2007. The next Code Development Committee (CDC) meeting will be held on September 2007 in Australia. Research collaboration will be the focus of discussions. Research collaboration into slips, trips and falls is providing significant benefits for both countries.	Collaboration on mutual regulatory issues, including research, product evaluation and access to Japanese markets.	[redacted]	CDC meeting September 2007 (Australia)

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 7: 2007 NATIONAL TECHNICAL SUMMIT OUTCOMES

FOR INFORMATION

IGA PRINCIPLE

NATIONAL TEC HNICAL SUMM IT cor responds with t he I GA P rinciple of MINIMUM PERFORMANCE-BASED C ODES TO AC HIEVE HE ALTH, SA FETY, AM ENITY AN D SUSTAINABILITY OF BUILDINGS

RECOMMENDATION

It is recommended that the Board note the outcomes of the 2007 National Technical Summit and associated BCC meeting.

EXECUTIVE SUMMARY

The purpose of the ABCB's National Technical Summit (NTS) is to seek wide feedback on proposals to change the BCA, and forms part of the development of the Board's Annual Business Plan. The 2007 NTS was held on 27 & 28 March and discussed 63 Proposals for Change (PFCs) to the BCA. The BCC meeting which followed the NTS considered the views expressed at the NTS and developed recommendations for consideration by the Office and Board.

BACKGROUND

An ABCB National Technical Summit has been held annually since 2000. In 2006, the role of the Summit changed from resolving specific technical issues to providing wide input into consideration of proposals to change the BCA. The Summit is an important consultative mechanism to assist in the development of the ABCB's Annual Business Plan. In addition to members of the BCC, participants at the NTS included approximately 20 senior industry and government representatives who were invited by State and Territory Administrations and the ABCB Office.

The views expressed by representatives at the NTS assist the BCC in its assessment and prioritisation of proposals and in formulating recommendations for consideration by the Office and the Board. PFCs can be submitted by individuals or organisations from industry and government agencies.

OUTCOMES OF THE NTS/BCC MEETINGS

There were 63 PFCs presented to the NTS and BCC for consideration. The NTS discussed the merits of the proposals using criteria based on the COAG principles for good regulatory practice and provided an indication of the level of support for the proposal to proceed and whether the matter was considered to be a high priority. The BCC then reached agreement on its recommendations.

PFCs were separated into the following categories:

1. Proposals that had merit and that could be considered for inclusion in the 2007-08 Annual Business Plan with indication of whether the matter was a high priority (9 PFCs including 2 that fall within current projects);
2. Proposals that had merit and could be included in the public comment draft of BCA 2008 (35 PFCs); and
3. Proposals not supported for inclusion in the 2007-08 Annual Business Plan for a variety of reasons such as no merit, additional work required or lack of evidence/justification (19 PFCs).

The BCC also considered the priority of the 8 PFCs from the 2006 Summit that were considered to have merit but were not included in the ABCB 2006-07 Annual Business Plan. Two of these have been included in the draft ABCB 2007-08 Annual Business Plan.

The NTS and subsequent BCC meeting were undertaken in a cooperative spirit allowing the significant workload to be completed in the time allocated. Feedback from participants at the Summit indicates that the process is a valuable component of the Board's regulatory gatekeeper role and its consultative mechanisms.

Agenda Item 8: CONTEMPORARY OPERATING ENVIRONMENT FOR THE BOARD'S WORK

FOR INFORMATION

RECOMMENDATION

It is recommended that the Board note the outcomes from the 13 April 2007 COAG meeting in preparation for the development of the 2007/08 Annual Business Plan (Refer Agenda Item 9).

BACKGROUND

The last few years have seen the regulatory landscape undergo significant scrutiny and review from a variety of sources, creating an operating environment in which regulation is now at its most contestable. The area of building regulation has not been exempt from these concerns and issues such as announcements at the 10 February 2006 COAG meeting and the Banks Report "Rethinking Regulation" significantly shaped the ABCB's 2006-07 Annual Business Plan. At the February 2006 meeting, COAG identified regulatory reform as a key priority and announced the National Reform Agenda (NRA). Under the NRA COAG committed to reducing the regulatory burden imposed on business by the three levels of government through the establishment and maintenance of arrangements to maximise the efficiency of new and amended regulation and avoid unnecessary compliance costs and restrictions on competition.

More recently, at its 13 April 2007 meeting COAG made further commitments that impact on the ABCB's future operating environment. Matters of direct relevance concerned the confirmation of commitments under the NRA, and the endorsement of a National Climate Change Adaptation Framework.

ISSUES

The NRA endorses the ABCB's gatekeeping role to facilitate building regulation reform and the development of a nationally consistent BCA. Under the National Climate Change Adaptation Framework potential areas of action may require the ABCB to undertake work on the likely effects of climate change and extreme weather conditions to physical infrastructure and settlements.

The ABCB is currently undertaking a study to determine the consequences of high wind events (including cyclones) on Australian buildings, and the benefit of current building code provisions. This work will continue in 2007/8. Post-event analysis (e.g. Cyclone Larry) will inform the efficacy of the current provisions. In addition, the 2007/08 work program proposes a study into the potential impact of climate change on wind speeds. The ABCB has also undertaken work into other climate related hazards, such as work into construction in flood-prone areas and the revision of the bushfire standard AS 3959.

The ABCB has been; and will continue to be, involved in national and international initiatives to evaluate and address the impact of climate change. National initiatives include the Australian Greenhouse (AGO) study into climate change impacts, the Australian Academy of Technological Sciences and Engineering (ATSE) study into anticipating climate change risks for infrastructure and the National Risk Assessment Group established in response to the COAG study into natural hazards. On the international front, the ABCB continues to collaborate and share information with other building code developers in this area.

National Reform Agenda (NRA)

The affirmation of the NRA reconfirms COAG's commitment made at its 10 February 2006 meeting to facilitate best practice regulation, apply review processes in relation to the BCA, and remove unnecessary variations to the BCA. Specifically, COAG agreed to refer building regulation issues to the COAG Reform Council (CRC) initially for monitoring of progress and subsequently for assessment. As reforms are implemented and economic, fiscal and other benefits are being realised, the CRC will provide COAG with a broad ex-post assessment of the costs and benefits of individual reform packages. Further details on these processes are expected to be released shortly.

COAG endorsed the BCA as an instrument for setting out the statutory standards and policies for building rules consent and the new accountability measures, reporting requirements and gatekeeping mechanisms for implementing further building regulation reform encapsulated within the IGA. This was canvassed under the National Competition Policy reform agenda as part of the NRA and its allocation of work to the Local Government and Planning Ministers' Council (LGPMC). This decision was:

Decision 5.10

(a) *COAG noted the findings of the Productivity Commission research paper, Reform of Building Regulation;*

(b) *governments committed to achieve a nationally ‐ consistent Building Code of Australia based on minimum regulation and will formalise that commitment by signing the new inter ‐ governmental agreement; and*

(c) *COAG will request the Local Government and Planning Ministers Council, co opting where necessary Ministers with responsibility for building regulation, to report back by mid 2006 on the content and timetable for implementing further building regulation reforms including a nationally consistent building code.*

COAG reconfirmed a number of decisions under the NRA, addressing best practice regulation, that bear upon the work of the ABCB and building regulation reform. Notably these include:

- *Decision 1.1*: *Recommitment by states and territories to the principles contained in the Competition Principles Agreement*
- *Decision 5.1: (a) Establishing and maintaining "gate-keeping" mechanisms; (b) improving the quality of regulation impact analysis; (c) better measurement of compliance costs; (d) broadening the scope of impact analysis to include the regulatory effect on individuals and the cumulative burden on business; and (e) applying these arrangements to Ministerial Councils*
- *Decision 5.2: Each jurisdiction to review existing regulations with a view to reducing the regulatory burden*
- *Decision 5.3: (a) adopt a common framework for benchmarking, measuring and reporting on the regulatory burden; and (b) consider setting targets for "redtape" reduction*
- *Decision 5.4: Use the reviews conducted under Decision 5.2 to identify opportunities for further reforms*

The responsibility for Decision 5.10 rests with the Building Ministers' Forum (BMF) to report to COAG. COAG requested that the LGPMC and the BMF work cooperatively to reduce inconsistencies which impact on efficiency and increase the cost of applying the BCA on a national basis, and report to COAG at the end of 2007. Once endorsed by the BMF, the draft Business Plan at Agenda Item 8.1 will be forwarded to the LGPMC as part of this process.

National Climate Change Adaptation Framework

COAG endorsed a National Climate Change Adaptation Framework ("the framework") as the basis for jurisdictional actions to climate change adaptation over the next five to seven years. The framework includes potential actions to assist the most vulnerable sectors and regions such as agriculture, biodiversity, fisheries, forestry, settlements and infrastructure, coastal, water resources, tourism and health to adapt to the impacts of climate change. The endorsement provides a number of possible areas of action for the ABCB to undertake work on the likely effects of climate change on physical infrastructure, and the effects extreme weather events on the social economic and economic fabric of settlements.

COAG acknowledged that climate change is likely to affect the physical infrastructure and the social and economic fabric of settlements in Australia as urbanisation and expansion in coastal and regional areas increases. COAG recognised the importance of implementing adaptive measures to combat climate change through codes and standards targeting the impacts of different climatic conditions including higher temperatures and changes to precipitation, water tables and humidity. The framework highlights that decision makers need additional information about the vulnerability of major infrastructure and building stock, in order to develop adaptation strategies. In addressing these issues COAG decided to implement a number of actions. This decision was:

Decision 2.7

a) *Research to address key knowledge gaps about human settlements and climate change impacts, including information needed to effectively implement actions set out below in relation to planning, codes and standards and major infrastructure.*

b) *All jurisdictions will evaluate and share relevant information about the extent to which planning and development systems promote decisions that increase resilience to the impacts of climate change and discourage decisions that increase vulnerability, and consider changes where appropriate. The Local Government and Planning Ministers Council would coordinate a national report based on these assessments.*

c) *Analysis and revision of planning systems including revision and development of codes, standards and guides to increase resilience to climate change including:*
   - *the Australian Building Codes Board consider climate change as part of their periodic reviews; and*
   - *reviewing standards used for building, plumbing and electrical standards and specification for the development and subdivision of land. This would include a particular focus on standards related to buildings and utilities and would be ongoing as better information becomes available.*

The framework is complimentary to COAG's endorsement of a 'Natural Disasters in Australia Reforming Mitigation, Relief and Recovery Arrangements Review' at its June 8 2001 meeting. The review examined arrangements for natural disaster relief and community recovery, gaps in disaster insurance, disaster mitigation programs, and Australia's capacity to respond to such emergencies. The review recommended that reform commitments be made to target the effects of natural disasters. Reform commitments relative to the ABCB's operating environment included:

Recommendation 4

1. *Develop and implement a five year national program of systematic and rigorous disaster risk assessments; and*
2. *Establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation.*

The recommendations were considered by COAG at its 29 August 2003 meeting and it endorsed a National Risk Assessment Framework to be guided by the National Framework Assessment Group (NFRAG) and the Technical Risk Assessment Advisory Committee (TRAAC). The ABCB currently sits on TRAAC with the Department of Transport and Regional Services (DOTARS), Geosciences Australia, CSIRO, HIA, and the MBA. The ABCB's input to TRAAC includes providing discussion papers and handbooks relating *inter alia* to land slides, flooding, bushfires, and earthquakes.

Related COAG announcements relevant to the ABCB's operating environment

Other announcements were made under the NRA relating to Development Assessment, Infrastructure and Environmental Development, Occupation Health and Safety, Benchmarking, Annual Reviews and a Skill Protocol:

Development Assessment

Under the National Reform Agenda COAG remains committed to streamlining and harmonising development assessment processes to reduce administrative costs and to deliver positive economic, social, and environmental outcomes to the community. COAG acknowledged the LGPMC Report on Development Assessment Reform indicating that:

(a) States and Territories have reviewed, or are reviewing local government development assessment legislation, policies and objectives to ensure that they remain relevant, effective, efficiently administered, and consistent across their jurisdictions;
(b) States and Territories have put in place, or are putting in place, strategies to ensure that referrals are limited to agencies with a statutory role relevant to the application, and that referral agencies specify requirements in advance and comply with clear response times;
(c) all jurisdictions agree to review the outcomes of the current system and software trials of electronic development assessment processing and, if appropriate, facilitate further trials, with the aim of maximising the uptake of electronic development assessment processing by the end of 2009; and
(d) all jurisdictions agree that all new tender specifications for electronic development assessment software purchased by Commonwealth, State, Territory and Local Government will incorporate a National Communication Protocol for transferring development application information electronically from 1 July 2007.

COAG requested the LGPMC to continue its work towards implementing key elements of the Development Assessment Forum's Leading Practice Model.

Infrastructure and Environmental Development

COAG discussed the importance of jurisdictions implementing rigorous assessment processes to ensure that the environmental impacts of proposed developments are well understood and mitigated against. The responsibility of each government to protect the environment was also discussed in relation to the need for consistent regulatory requirements to ensure that regulation does not unnecessarily hinder economic activity. Against this background, COAG agreed that the Commonwealth Minister for the Environment and Water Resources will develop a proposal, in consultation with States and Territories, for a more harmonised and efficient system of environmental assessment and approval as soon as possible.

Occupational Health and Safety (OHS)

COAG acknowledged that the impact of the inconsistent application of occupational health and safety regulation across jurisdictions is regularly identified by business as an area of concern. COAG agreed to achieving national OHS standards and harmonising elements in principal OHS Acts, subject to there being no reduction or compromise in standards for legitimate safety concerns in current OHS standards.

COAG agreed that the national OHS standards framework be recast to comprise the following components:

(a) national standards focussed on safety requirements (specified as outcomes where possible) as the basis for jurisdictional regulations;
(b) a core document containing the key principles found in OHS Acts to be used as the common framework for developing and reviewing national standards;
(c) national codes of practice that provide more focussed practical guidance on how to meet an outcome;
(d) guidance material;
(e) regulatory interpretative documents; and
(f) a handbook that documents the principles and processes of the national standards framework.

Benchmarking

COAG has agreed to proceed to the second stage of a study to benchmark the compliance costs of regulation, to be undertaken by the Productivity Commission. Benchmarking the compliance costs of regulation will assist all governments to identify further areas for possible regulation reform. The benchmarking study will examine the regulatory compliance costs associated with becoming and being a business, the delays and uncertainties of gaining approvals in doing business, and the regulatory duplication and inconsistencies in doing business interstate.

Annual Reviews

COAG has agreed that each jurisdiction will review existing regulations with a view to encouraging competition and efficiency and streamlining and reducing the regulatory burden on business by:

(a) initiating at least annual targeted reviews to reduce the burden of existing regulation in its own jurisdiction through a public inquiry and reporting process that provides opportunities for input from a range of stakeholders including business groups, with each review to identify priority areas where regulatory reform could provide significant gains to business and the community; and
(b) acting on the recommendations of the reviews referred to above, and co-ordinating reform measures with other jurisdictions if appropriate.

Skills Protocol

COAG agreed to endorse a new skill protocol with major revisions to occupational registration. The protocol requires jurisdictions to consult each other when revising or introducing occupational registration with a view to achieving nationally-consistent scopes of work authorised by the registration, as well as nationally-consistent definitions and types/classes of registration. Under the protocol COAG agreed for major revisions to occupational registration and to further work on arrangements for on-shore skills assessment processes for people with overseas qualifications. COAG also agreed to the development of a new offshore skills assessment service providing a single assessment for both visa and licensing purposes for skilled migrants to commence from 1 July 2007 for key trades in the major source countries. COAG also discussed integrating climate change into education and training for key professions, including engineering, architecture, planners, reserve managers and local government.

COAG noted that new arrangements for mutual recognition of occupational licenses had come into effect on 22 February 2007 for 22 occupations within the six priority trades, four months ahead of schedule. The new arrangements make it easier for licensed tradespeople, and authorities that issue licences, to know what licence a worker is entitled to when applying for a licence in another state or territory. The new arrangements cover licences issued to electricians, electrical fitters, line workers, and cable jointers, tradespeople with restricted electrical licences, plumbers and gas-fitters, carpenters and joiners, bricklayers, and builders, refrigeration and air-conditioning mechanics, and auto-gas installers. COAG noted that the new mutual recognition arrangements will be extended to the remaining vocationally trained licensed occupations by December 2008.

Agenda Item 9: DRAFT 2007-08 BUSINESS PLAN & BUDGET

FOR DECISION

IGA PRINCIPLE
Draft Annual Business Plan 2007-08 corresponds with the *IGA Principle* of **DIRECTION SETTING TO ALIGN WITH STRATEGIC PRIORITIES AS ESTABLISHED BY MINISTERS**

RECOMMENDATION

It is recommended that the Board:

- Agree to the attached draft Performance Indicators, milestones, Work Program outputs and budget to fund the year's work; and
- Agree that this paper form the basis of the 2007-08 ABCB Business Plan.

BACKGROUND

ABCB is required by the IGA to develop a Business Plan annually (the Plan) to ensure that our operations are transparent and accountable. Ministers are able to review annual outputs and progress against IGA objectives and to consider an annual State and Territory *Variations to the BCA* report (refer Agenda Item 4). Following discussion at the May meeting, the Plan will be conveyed to Building Ministers by the Chairman in August 2007 following any comment by Board members out of session.

THRUST OF 2007-08 BUSINESS PLAN

Process

The development of the draft Budget and Project proposals has been an iterative process, with drafting being heavily influenced by the IGA. The Plan reflects direction from the ABCB Strategic Plan 2007–11, COAG and Ministerial Councils, outcomes from the recent National Technical Summit (NTS) and subsequent BCC consideration of 64 Proposals for Change (PFCs), as well as deliberations by the Office.

Content

The package affords a high priority to maintenance and update of the BCA, climate change and sustainability, variation reduction, strategic research and education and training.

Attachment A details the Draft 2007-08 Budget and **Attachment B** provides specific detail on individual projects and their outputs. At **Attachment C** is the Strategic Plan 2007-11 which includes several projects that have been included in the draft program such as building/planning delineation, JAS ANZ Quality Assurance, facilitation of national consistency in administrative systems, implementation of a Stakeholder Communication Strategy and investigation of new BCA delivery models. **Attachment D** provides draft 2007-08 Performance Indicators and headline Milestones.

Next Steps

Once agreed to by the Board, these details will be used to form the basis of an Annual Business Plan package to the Building Ministers Forum (BMF). The timing of BMF engagement will need to be guided by the Commonwealth. It provides the BMF secretariat.

Summary of Attachments:

Attachment A - Draft 2007-08 Budget
A**ttachment B -** Draft 2007-08 Project Outputs and Descriptions
Attachment C - ABCB Strategic Plan 2007-11
Attachment D - Draft Performance Indicators and high level Milestones for 2007-08

2006-07 OUTPUTS

Full details of progress made during 2006-07 are set out in AI 6 and elsewhere in the papers on specific topics. 2006-07 has been another busy year for the ABCB with all five Performance Indicators delivered substantially (or about to be) and some significant achievements, including:

Direction by Ministers/COAG

- Joint Working Group established and work commenced on building/planning delineation and climate change/sustainability issues

Headline PIs (as per 2006/07 Business Plan)

- BCA 2007 delivered on 1 May 2007 on budget and in line with COAG Principles
- RIS process reviewed and enhanced with acknowledgement from the Office of Best Practice Review validating our RIS work and changes to our impact analysis processes
- Landslide Hazards non-regulatory handbook published in December 2006
- Variation Reduction Strategy initiated and progressed
- Strategic Review of BCA against COAG Principles initiated and progressed

Education and awareness initiatives

- BCA2007 Seminar series conducted with 1270 delegates attending
- Well-attended and successful National Technical Summit conducted
- BCA Awareness Resource Kits for Energy Efficiency released to industry and education institutions
- Ministerial, industry and general community briefings, speeches and seminars by the Chairman, General Manager and senior staff on the key reform messages
- A report on the effects of Cyclone George in the greater Port Headland area completed and made publicly available to reinforce the value of the BCA in life protection

IGA issues

- ABCB Annual Business Plan 2006-07 developed and endorsed by Ministers
- Review of BCC Role, Terms of Reference and membership to align with new IGA completed and implemented.
- Regulatory gatekeeper role upheld; resulting in rejection of a number of standards proposals due to insufficient justification as well as NTS/BCC action to reject other regulatory proposals
- 2nd meeting of the National Forum of Building Appeals Tribunal facilitated in the interests of promoting national consistency.

CHALLENGES AND EMERGING ISSUES FOR 2007/08

- **The need to meet IGA accountability requirements on building regulation reform**

  IGA requires:

  - Reports on progress and future ABCB priorities to the Building Ministers' Forum and subsequently through LGPMC and COAG each year and on reducing variations to the Building Code
  - enhanced impact assessment and better transparency, accountability and consultation
  - Delivery of opportunities for greater national consistency of regulation

- **A review of existing Code measures against COAG principles and quantify performance objectives**

  - Reduction of the regulatory burden is a key objective of the IGA
  - Redundant or overly burdensome Code measures are to be removed
  - Also need to assess existing BCA performance requirements to clarify and verify their appropriateness

- **The development of a more effective delineation of planning and building controls to create greater regulatory certainty for industry and curb Local Govt action to undermine the national Code**

  - The BMF believes it has a mutual obligation with the LGPMC to ensure clear separation between building and planning regulation and that where regulation is required, COAG Principles will apply, including the need for regulation impact assessment

- **The development of a National Implemen tation Model to address climate change and sustainability and the need, if any, for nationally consistent building regulations**
    - A Joint ABCB/POG/EEWG Working Group has been established to meet this objective and delineate building and planning controls, address climate change and sustainability and make recommendations to LGPMC, BMF and MCE
    - A National Implementation Model is being developed to reduce duplication in the sustainability area by assigning policy and/or operational responsibilities across governments and industry
    - Evaluate research into water, materials and adaptation to climate change to determine if regulatory intervention is required
    - A report will need to be made to relevant Ministers

- **The need to explore future options for the delivery of the Building Code to increase its uptake by industry**
    - At the professional level in industry there is good uptake of BCA
    - But builders uptake is low – will work with State licensing authorities to change this
    - This would result in ABCB becoming more involved in BCA training for builders
    - Also examining how to better format the BCA for particular users

Draft ABCB Budget 2007-08

Attachment A

IGA PRINCIPLES	No.	New / PFC	PROJECT NAME	ASL	IP and BCA Delivery Costs #	Consultancies	Other Major Costs >20k	Total ABCB Costs
Minimum Necessary Performance-Based Codes to Achieve Health, Safety, Amenity and Sustainability of Buildings	1		Maintain and Update the BCA	3.0	452,175		60,000	512,175
	2		Standards Coordination and Committees	2.0	301,450			301,450
	3		Quantification of Performance Requirements	1.1	165,798	40,000		205,798
	4		Salinity and Acid Sulphate Soils	0.3	45,218			45,218
	5		Strategic Research Activities	0.5	75,363	150,000		225,363
	6		Emergency Egress for All Occupants	0.2	30,145	60,000		90,145
	7		Wire Balustrades - Review	0.1	15,073	33,000		48,073
		8	PFC - Penetrations in Class 9c Plasterboard ceilings	0.1	15,073			15,073
		9	PFC - Impact of climate change on cyclonic regions of Australia	0.1	15,073	38,000		53,073
		10	PFC (NTS 2006) - Class 6 and Class 9b Classifications	0.1	15,073			15,073
		11	PFC (NTS 2006) - Sanitary Facilities	0.2	30,145			30,145
Direction Setting to Align with Strategic Priorities as Established by Ministers	12		Access for People with a Disability	0.5	75,363			75,363
	13		Strategic Review of the BCA against COAG Principles	0.5	75,363			75,363
	14		Building Sustainability (including Energy Efficiency)	2.0	301,450	100,000		401,450
	15		Protection from Threats and Natural Disasters	0.2	30,145			30,145
	16		Buildings in Flood Prone Areas	0.1	15,073			15,073
		17*	Building / Planning Delineation (incl. empirical study)	1.5	226,088	100,000		326,088
Transparency, Accountability and Consultation including Increased Impact Assessment	18		RIS Process on all Regulatory Change Proposals (incl. Standards Matters)	2.0	301,450	200,000		501,450
		19*	JAS-ANZ Quality Assurance	1.0	150,725		20,000	170,725
	20		Corporate Financial Services	2.8	422,030			422,030
Greater National Consistency including Variation Reduction Strategy	21		Variation Reduction Strategy	1.0	150,725	100,000		250,725
		22*	Facilitation of National Consistency in Technical and Administrative Systems	0.3	45,218			45,218
	23		Product Certification - Codemark	1.0	150,725			150,725
Reduced Reliance on Regulation including Increased Practitioner Skill Levels and Non-Mandatory Handbooks	24		Non Regulatory Handbooks	0.3	45,218	50,000		95,218
	25		BCA Advisory Service	1.0	150,725			150,725
	26		BCA Awareness and Training	1.5	226,088			226,088
		27*	Implementation of Stakeholder Communication Strategy	0.5	75,363		50,000	125,363
	28		BCA Marketing and Promotion	1.2	180,870			180,870
	29		National Conference	0.2	30,145			30,145
	30		ABCB Cadetship	3.0	452,175			452,175
Strengthen Reforms to Building Regulation (through International Collaboration)	31		Japan/Australia Regulatory Cooperation (incl. JEB)	0.3	45,218	50,000		95,218
	32		International Code Research and Collaboration	0.4	60,290			60,290
Facilitation of Board's Reform Agenda	33		Executive Management	2.7	406,958			406,958
	34		Policy Advice	0.6	90,435			90,435
	35		Board Servicing	0.2	30,145		170,000	200,145
		36*	BCA Publishing Program (including Delivery Models)	3.0	452,175	100,000	60,000	612,175
	37		BCA Subscriber Management	2.2	331,595			331,595
	38		IT Infrastructure	2.3	346,668			346,668
TOTAL				**40.0**	**6,029,000**	**1,021,000**	**360,000**	**7,410,000**

*** - 5 year Strategic Plan initiative**

 # - Includes salary, administrative and BCA production costs

	($m)
Sources of revenue to fund ABCB activities	
Australian Government	1.00
Department of Environment and Water Resources	0.10
State & Territory Goverments	1.00
Accumulated Fund draw down	0.50
BCA and other (Conference and Seminar) revenue	4.81
TOTAL	**7.41**

Attachment B

PROJECT OUTPUTS AND DESCRIPTIONS FOR 2007-08

MINIMUM NECESSARY PERFORMANCE-BASED CODES TO ACHIEVE HEALTH, SAFETY, AMENITY AND SUSTAINABILITY OF BUILDINGS

1. MAINTAIN AND UPDATE THE BCA

Output
- Improved and updated BCA core technical requirements

Description - Volumes One and Two of the BCA
The BCA, as the national technical code, must be maintained and updated in accordance with COAG regulatory principles to ensure it remains relevant and keeps pace with emerging needs and in response to feedback from users. Changes planned for BCA 2008 include:
- Volume One
    - consistency in terminology between the BCA and referenced documents
    - removal of outdated and superseded provisions
    - rationalise height of door handles on egress paths
    - clarification of type of fire resisting construction required for buildings containing a Class 4 part
    - clarification of smoke hazard management provisions
    - refine energy efficiency measures
    - update references to other documents
    - minor technical changes and corrections
- Volume Two
    - update rainfall intensity values for determination of gutter and downpipe sizes
    - provide additional examples of fire separation details for external walls
    - achieve consistency with Volume One on balustrades at window openings
    - updated corrosion protection requirements for structural steel members
    - refine energy efficiency measures
    - update references to other documents
    - minor technical changes and corrections

Guide to BCA
The Guide to the BCA has been developed to assist industry by explaining the intent and background to Volume One of the BCA. Volume Two was developed with considerable commentary integral to the text and, as such, a separate guide was unnecessary. The Guide was released in 1998 and is being maintained to mirror the development of the BCA. The maintenance process includes:
- changes to reflect BCA updates
- inclusion of additional content to explain issues that the Guide does not currently address

National Technical Summit
Facilitate a forum for industry and government stakeholders to consider and discuss proposals for inclusion in, or amendment to, the BCA.

2. STANDARDS COORDINATION AND COMMITTEES

Output
- BCA referenced documents, including Australian Standards, that are suitable for regulatory use.

Description
This project includes ongoing review of the Memorandum of Understanding with Standards Australia, updating and application of the ABCB's Protocol for BCA Referenced Documents, Preliminary Impact Assessment submissions and processes for continual improvement of coordination with Standards Australia and other organisations that may propose and develop technical regulatory documents. ABCB Office staff participate on Standards committees and consult with the BCC during the development of new or revised BCA referenced documents to ensure COAG regulatory principles are followed.

3. QUANTIFICATION OF PERFORMANCE REQUIREMENTS

Output

- Measurable BCA performance requirements and/or additional verification methods

Description

This project seeks to address concerns that qualitative Performance Requirements lack clarity on what is intended and makes the task of judging compliance of Alternative Solutions difficult. Where possible, it is intended to develop measurable Performance Requirements and/or Verification Methods to overcome these concerns, while maintaining the benefits of a performance-based code in accommodating flexibility and innovation.

4. SALINITY AND ACID SULPHATE SOILS

Output

- Recommended option/s from consultation paper submitted for Board direction

Description

Damage caused to buildings by salt attack and acid sulphate soils is a growing problem affecting Australia's building stock. It is primarily caused by the construction of buildings in saline areas and areas containing acid sulphate soils. Consultation paper considered by the BCC with preferred option developed for Board consideration.

5. STRATEGIC RESEARCH ACTIVITIES

Output

- Research to inform decisions on future BCA and non-regulatory measures.

Description

The Productivity Commission considered that the ABCB research program has been effective and it is important that it continue. It also stated that research priorities should be guided by the future work program. Operational research management is now devolved to individual ABCB project managers whose focus is on specific elements of the future work program. Elements of the research program include:

- Discretionary Research Fund to undertake strategic research and research into emerging issues guided by the Board's agreed work program. This currently includes fire safety components and systems, slips, trips and fall hazards, fire statistics and adaptation to climate change
- Student Scholarship Program. research undertaken by undergraduate and postgraduate students to aid the ABCB reform agenda
- partnership with the CRC on construction innovation and drawing on those elements of that work program which are directly relevant to future amendments of the BCA.

$150,000 consultancy costs includes: Research fund $100,000 and CRC $50,000.

6. EMERGENCY EGRESS FOR ALL OCCUPANTS

Output

- Advice to Board on the development of provisions for emergency egress for all occupants including people with a disability

Description

The aim of this activity is to examine the feasibility and viability of technically sound and economically cost-effective amendments to the BCA. International studies will inform the Board's work in this area, in particular the work of the National Institute of Standards and Technology (NIST).

7. WIRE BALUSTRADES – REVIEW

Output
- Refined BCA wire balustrade provisions

Description
Since the introduction of the wire balustrade provisions in BCA 2005, there has been a significant reaction from industry, reflecting both confusion about the requirements as well as disagreement with the stated values in the table.

A post-implementation review of the wire balustrade requirements was commenced in 2006-07 and included consultation with industry and the commissioning of research to address the issues raised. For 2007-08, this project consists of finalisation of the research and development of changes to the BCA provisions.

8. PFC - PENETRATIONS IN CLASS 9c PLASTERBOARD CEILINGS

Output
- Determine if allowing tightly fitting penetrations through Class 9c ceilings is appropriate.

Description
The aim of this project is to review the original fire engineering analysis to determine if allowing tightly fitting penetrations through Class 9c ceilings would be appropriate. If so, develop a BCA Amendment proposal. Review the location of the provisions within the BCA.

9. PFC – IMPACT OF CLIMATE CHANGE ON CYCLONIC REGIONS OF AUSTRALIA

Output
- Evaluate whether the current design wind load criteria is representative of the Australian climate.

Description
The aim of this project is to seek data from the Bureau of Meteorology to review the suitability of the current design wind load criteria for the Australian climate. The data will also be reviewed to establish any trend in the data which indicate increased wind speeds.

10. PFC (NTS 2006) - CLASS 6 AND CLASS 9b CLASSIFICATIONS

Output
- Improved building classification descriptors for Class 6 and Class 9b uses.

Description
The aim of this project is to develop a BCA amendment proposal that provides clear delineation between Class 6 (hotel and bar) and Class 9b (nightclub/entertainment) uses.

11. PFC (NTS 2006) - SANITARY FACILITIES

Output
- Scoping study on the need for revisions to the BCA provisions for sanitary facilities.

Description
This project was suggested at the 2006 National Technical Summit but was not included on the 2006-07 work plan due to other priorities. The need for a review of the provisions for sanitary facilities in buildings is now seen as a high priority by the majority of BCC members. The first stage of this project is to undertake a scoping study to determine whether the number of sanitary facilities required by the BCA is appropriate including a review of recent research.

12. ACCESS FOR PEOPLE WITH A DISABILITY

Output

- Respond to Government policy direction on disability access to buildings as it applies to the BCA

Description

Development of revised BCA provisions for people with a disability, which can form the basis of an Access to Premises Standard, would be aimed at providing certainty for industry and the disability sector about obligations under the DDA. In consultation with industry, the disability sector, HREOC, Attorney-General's Department and S&T Administrations, the Board has made recommendations to Ministers on revised BCA provisions and supporting documentation that could form part of DDA Disability Standards for Access to Premises. Once Commonwealth Ministers have agreed, in consultation with States and Territories, on a proposal for tabling in Parliament, implementation of appropriate changes to the BCA will be undertaken.

13. STRATEGIC REVIEW OF THE BCA AGAINST COAG PRINCIPLES

Output

- Implement the Board's decision on the findings of the Strategic Review undertaken in 2006/07.

Description

Reduction of regulatory burden is an aim of the IGA. The aim of this project is to assess the BCA for provisions that are redundant due to assessment under principles of good regulation. The COAG Guideline for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies sets the standard for regulatory reform principles.

The Strategic Review will be completed in June 2007. The responses are being categorised into the following areas: matters that could be addressed in the next BCA amendment, matters that required further work, consultation and analysis, matters that required significant work for consideration on the future work program and matters dealt by other ABCB projects. Although the strategic review has been completed, the findings need to be implemented. Implementation of the review findings will be the focus for this financial year.

14. BUILDING SUSTAINABILITY (INCL. ENERGY EFFICIENCY)

Output

- Develop a national implementation model to address climate change and sustainability and the need, if any, for nationally consistent building regulations.

Description

This project relates to the environmental sustainability of buildings. The ABCB will, in conjunction with the Commonwealth Department of Environment and Water Resources, examine problems associated with the environmental impacts of building, starting with energy, water, indoor environmental quality, materials and adaptation to climate change. These, and any other proposals for mandatory standards for other factors, need to rigorously assessed to ensure that:

- their role is evaluated against other instruments, including information provisions and market instruments
- the level and form of protection they embody would provide a net benefit
- there is, in fact, a case for regulations.

COAG recommitted (13 April 2007) to its earlier NRA commitments for building regulation. Additionally, COAG endorsed a National Adaptation Framework to combat the likely effects of climate change to physical infrastructure, and the social economic and economic fabric of settlements through extreme weather events. The framework highlights that decision makers need additional information about the vulnerability of major infrastructure and building stock, in order to develop adaptation strategies. This decision involved:

Decision 2.7

- *a) Research to address key knowledge gaps about human settlements and climate change impacts, including information needed to effectively implement actions set out below in relation to planning, codes and standards and major infrastructure.*
- *c) Analysis and revision of planning systems including revision and development of codes, standards and guides to increase resilience to climate change including:*
  - *the Australian Building Codes Board consider climate change as part of their periodic reviews; and*
  - *reviewing standards used for building, plumbing and electrical standards and specification for the development and subdivision of land. This would include a particular focus on standards related to buildings and utilities and would be ongoing as better information becomes available.*

The addition the Local Government and Planning Ministers Council (LGPMC) has also requested its officials consider the national application of the NSW Building Sustainability Index (BASIX), within the context a broader national examination of a national framework for environmental performance within the built environment.

15. PROTECTION FROM THREATS AND NATURAL DISASTERS

Output

- Assessment of BCA implications arising from protection of critical infrastructure

Description

The ABCB Office is monitoring initiatives to improve the protection of critical infrastructure and iconic structures against threats such as terrorism and natural disasters. Any proposals for the BCA to play a role will be subject to analysis using the COAG principles for regulatory action including analysis of costs and benefits.

The work on protection from natural disasters is a response to a report to COAG that recognised the role of the BCA in natural hazard mitigation. COAG reform commitments and COAG/DOTARS report recommendations included that priority be given to reviewing the code and standards in respect of mitigating the effects of natural hazards. This work is ongoing, in conjunction with several other organisations including Emergency Management Australia and Standards Australia.

This project also includes quantification of the BCA Performance Requirements for buildings in bushfire-prone areas and materials testing in bush fire prone areas subject to satisfactory impact assessment.

16. BUILDINGS IN FLOOD PRONE AREAS

Output

- Recommended option/s from consultation paper submitted for Board direction

Description

BCC recommended option/s for consideration of issues relating to buildings in floodprone areas to be considered by the Board. This project considers options on minimising damage from flooding to Class 1, 2 and 3 residential buildings in flood prone areas.

17. BUILDING / PLANNING DELINEATION (INCL. EMPIRICAL STUDY)

Output

- Develop a more effective delineation of planning and building controls to create greater regulatory consistency and curb Local Government action to undermine the code.

Description

The genesis of this project is largely attributable to the Productivity Commission's Report on 'Reform of Building Regulation' (Nov 2004). The report noted that local governments have been using planning laws to extend or alter building requirements over and above the Building Code of Australia (BCA) and that invariably the distinction between building and planning law has become blurred.

The Productivity Commission concluded that action needs to be taken to reduce inappropriate erosion of nationally consistent building regulation and recommended that the ABCB should examine ways to

combat this problem to foster national consistency.

Minister Macfarlane, on behalf of the Building Ministers' Forum (BMF), forwarded a report to COAG through the LGPMC noting that the BMF believes it has a mutual obligation with the LGPMC to ensure clear separation between building and planning regulation. At its 4 August 2006 meeting the LGPMC supported a proposal to establish a joint working party between the ABCB and LGPMC Officials to discuss how this matter can be jointly progressed, albeit with a focus on environmental performance in the built environment. This proposal was subsequently endorsed at the ABCB meeting of 24 November 2006.

TRANSPARENCY, AC COUNTABILITY AND CONSULTATION I NCLUDING INCREASED IMPACT ASSESSMENT

18. RIS PROCESS ON ALL REGULATORY CHANGE PROPOSALS (INC. STANDARDS MATTE RS)

Output

- Enhanced regulation impact assessment processes in consultation with the Office of Best Practice Regulation (OBPR) and impact assessment of all regulatory processes in accordance with COAG principles.

Description

The aim of this activity is the production of technically sound and economically cost-effective amendments to both Volumes of the BCA.

Under the COAG Agreement on national standard setting, the ABCB is required to prepare a Regulation Impact Statement (RIS) and invite public comment on the impact assessment. In order to meet its obligations under the Agreement, the ABCB has developed a model and processes that have been endorsed by the OBPR, for impact assessment activities.

19. JA S-ANZ QUALITY ASSURANCE

Output

- ABCB recognised by JAS-ANZ as meeting the quality management standard

Description

ABCB achievement of JAS-ANZ quality assurance is a milestone of the 2007-2011 Strategic Plan and requires compliance with the ABCB Standard, a quality management system standard developed by JAS ANZ which is sourced from ISO 9001:2000 (an internationally recognised quality management system standard). The ABCB is required to develop a quality management system that fully documents all operational processes. The system will be audited by JAS-ANZ and be used to continually improve ABCB processes.

20. CORPORATE FINANCIAL SERVICES

Output

- Financial, HR and administrative services including Business Management and Records Management Systems

Corporate Financial Services will be provided to the Board and Office in accordance with the statutory framework provided by Commonwealth Government such the FMA act, CEI's and Government Procurement Guidelines. The ABCB is required to produce monthly financial reports to DITR, quarterly reports to the Board and annual audited financial statements.

GREATER NATI ONAL CONSIST ENCY IN CLUDING VA RIATION REDU CTION STRATEGY

21. VARIATION REDUCTION STRATEGY

Output

- BCA variations identified for resolution in consultation with States and Territories and annual report to Ministers

Description

A variation reduction strategy has been developed to assist the Board address existing and new variations to the BCA. This includes a Register of Variations and Additions to be provided to Ministers.

22. FACILITATION OF N ATIONAL CONSISTENCY I N TECHN ICAL AN D ADMINISTRATIVE SYSTEMS

Output

- Interaction with existing national forums and control authorities to facilitate a nationally consistent approach to building regulations

Description

Priority projects for ABCB involvement in the promotion of national administrative consistency were identified by the Board in 2006-07. It was agreed that the ABCB should play a facilitative role in the following projects:

- Sustainability Tools
- National Forum of Building Appeals Tribunal
- Australian Building Certification Forum (ABCF)

The ABCB will also continue its involvement in other activities that facilitate a nationally consistent approach to building regulations. Specific actions include Office liaison with a range of forums and projects including Builders Licensing Australasia, National Accreditation Framework (NAF) for building certifiers, the Development Assessment Forum, CodeMark and the development of a variety of administrative protocols and guidelines. It should be noted that the NAF has also been identified as a milestone under the 2007-2011 Strategic Plan.

This project also recognises that there are a number of other regulatory systems that have the potential to interact with building regulation or influence building design and construction, for example, planning, workplace health and safety, utilities and plumbing regulation. Monitoring initiatives of other control authorities and seeking opportunities for co-regulatory solutions is important in achieving good regulatory outcomes.

23. BUILDING PRODUCT CERTIFICATION – CODEMARK

Output

- Management and facilitation of Australian/New Zealand third party product certification scheme

Description

The ABCB/DBH Scheme for the certification of building products was introduced in September 2005 to provide New Zealand and State/Territory governments, local government, building professionals, designers, product manufacturers and builders a system of product certification that:

- is responsive to Government and Industry needs for a reliable, timely and cost effective source of recognition of compliance of products /systems with the provisions of the BCA.
- provides Governments with the necessary degree of confidence to endorse the proposal for industry organisations to deliver this service to the broader industry.
- is commercially viable for participating industry organisations.

This project is the operation and facilitation of a third party Product Certification Scheme. Key tasks are: establishment by JASANZ of agreements with prospective Certification bodies and implementation and operation of the new scheme in Australia and New Zealand**,** trademark registration, auditing of prospective certification bodies with JASANZ until 2008.

REDUCED RELI ANCE ON REGUL ATION I NCLUDING INCR EASED PRACTITIONER SKILL LEVELS AND NON-MANDATORY HANDBOOKS

24. NO N-REGULATORY HANDBOOKS

Output
- Non-mandatory documents on matters not suitable for regulation

Description
This project aims to provide advice and guidance on topics that, for a variety of reasons, have been deemed inappropriate for regulation.

25. BCA ADVISORY SERVICE

Output
- BCA advice to subscribers, practitioners and the general community

Description
All enquiries are logged through the BCA advisory service with caller information and enquiry type redirected through to the appropriate ABCB area. Enquiries are addressed within 24 hours.

In order to deal with the demand on Office resources created by a marked increase in calls to the Service, a single point of contact has been created to receive and distribute calls.

26. BCA AWARENESS AND TRAINING

Output
- Seminars, training resource kits and other mechanisms to enhance awareness and understanding of the BCA among building and construction practitioners, the tertiary sector and community.
- The BCA Training Gateway website which links customers to industry and tertiary sector websites that offer BCA courses based on the Awareness Resource Kits, or related material.

Description
The ABCB's BCA Awareness and Training initiative seeks to enhance awareness of the BCA within the building and construction community through partnerships with industry and the tertiary sector.
The ABCB participates in a variety of industry conferences, seminars and information forums. Its participation ranges from hosting/facilitating events and speaking opportunities, to presentations on changes to the BCA, delivered in partnership with industry associations and State and Territory Administrations.

27. IMPLEMENTATION OF STAKEHOLDER COMMUNICATION STUDY

Output
- Implementation of a Stakeholder Communications Strategy

Description
In response to an independent study conducted in 2006, a Stakeholder Communication Strategy has been developed and its implementation will involve (subject to Board approval - refer Agenda Item 10):
- release and broad distribution of the ABCB Corporate Profile;
- development, release and broad distribution of "A Builders Guide to the BCA";
- increased promotion of ABCB publications;
- broader communication and distribution of the ABCB Business Plan;
- formalisation of 'reverse feedback mechanisms' to inform stakeholders of reasons for decisions and for their early engagement in consultation processes.

Additional research is to be undertaken by the Office to gain a better understanding of issues specific to builders.

28. BCA MARKETING AND PROMOTION

Output
- Raised awareness of the BCA and other ABCB activities

Description
A number of activities will be undertaken during 2007/08 to raise awareness of the ABCB portfolio and the BCA in the market. This will include implementation of individual project marketing strategies involving promotion, advertising and targeted publications. The office's marketing and promotion activities are also likely to be guided by the recommendations of the independent study of ABCB Stakeholder Communications.

29. ABCB NATIONAL CONFERENCE

Output
- Delivery of an ABCB Conference supported by industry

Description
The ABCB's fifth National Conference will be held from 23-26 September 2007 in Queensland. The level of involvement in the lead up to this event is extensive and includes gaining sponsorship, contract management, formalising presentations/speakers/papers/program, ensuring high level IT/AV capabilities, printing and publishing in both electronic and hard copy formats, processing Expressions of Interest/Registrations, coordinating social programs in conjunction with transport, sufficient accommodation options, financial accountability and an intense marketing and promotions campaign.

30. ABCB CADETSHIP

Output
- Scholarship program offering ABCB employment experience for building professional students

Description
The ABCB Cadetship seeks applications from students in construction related courses. Placements are for 12 months in the Office. The students (3) have a structured work program in a variety of technical areas. Opportunities for future placement in the ABCB, industry or the administrations may also be possible.

STRENGTHEN REF ORMS TO BUILD ING RE GULATION (THR OUGH INTERNATIONAL COLLABORATION)

31. JAPAN / AUSTRALIA REGULATORY COOPERATION (INC. JEB)

Output
- Collaboration on mutual regulatory issues, including research collaboration, product evaluation and access to Japanese markets

Description
ABCB is an active member of the "Japan Australia Building and Housing Committee" and has signed an MOU with MLIT that establishes the "Code Development Committee" and have an ongoing officer exchange program. ABCB Officer secondment to MLIT proposed for October to December 2007. Japanese Secondment Officer has successful completed the first year of a two year secondment with the ABCB.

* This project also includes the Japanese Evaluation Body project. The Australian Government with the assistance of the ABCB Office has been recognised by the Japanese Ministry of Land Infrastructure and Transport as an Evaluation Body. This enables the ABCB Office to evaluate building products and systems for compliance with the Building Standard Law of Japan (BSL). The ABCB will be working closely with CSIRO and other agencies to trial particular products which will provide valuable export opportunities for the Australian building industry. Key tasks include the finalisation and implementation of the marketing strategy and development of scope for testing of products under Japanese Building Law. One product is currently progressing in the system.

32. INTERNATIONAL CODE AND RESEARCH COLLABORATION (INC. IRCC and WFTAO)

Output
- Access to international research and regulatory developments

Description
ABCB continues to develop relationships with CIB, WAFTAO, BCA Singapore, CSIR South Africa and MOC Beijing, all of which provide opportunities for research exchanges and regulatory reform information sharing including successes and failures. Data will be collated and analysed for consideration by the Board.

* This project also includes the ABCB's presence on the Inter-jurisdictional Regulatory Collaboration Committee (IRCC) and International Council for Construction research and Innovation (CIB) to work with its international partners in focusing on leading edge regulatory reform issues through collaboration in research and development. An office representative to attend IRCC Summits or important meetings as appropriate.

FACILITATION OF BOARD'S REFORM AGENDA

33. EX ECUTIVE MANAGEMENT

Output
- Management of ABCB including implementation of Board directives and an Annual Business Plan to Ministers

34. POLIC Y ADVICE

Output
- Provision of strategic and policy advice to Ministers, the ABCB Chairman and the Board
- Responsibility for preparation of Annual Business Plan and submissions and responses to external reports, discussion papers etc

35. BOAR D SERVICING

Output
- Secretariat support to the Board (including meetings)

36. BCA PUBLISHING PROGRAM (INC. DELIVERY MODELS)

Output
- Improved sale and delivery mechanism for ABCB products, consistent with the Australian Government's cost recovery guidelines

Description
2007-08 will see a variation to the current Principal Publisher arrangements, with the Publishing & Marketing section increasing its current level of involvement as a result of the development of the ABCB's in-house Subscriber & Subscription Management (Database) System. These new arrangements will provide for improved marketing, management and sales of the BCA products and services and have been developed to assist in the ABCB's Cost Recovery program.

37. BCA SUBSCRIBER MANAGEMENT

Output
- In-house management of the ABCB's BCA subscriber database

Description
Subscribers to the ABCB's BCA products are managed through an online database. Subscriptions will be maintained by the ABCB Office's call centre in 2007/08 through an online interface with printing and delivery undertaken by ABCB's contracted printer.

38. IT INFRASTRUCTURE

Output

- Development and maintenance of ABCB's websites, including subscriber and content management systems

Description

The ABCB's existing public and members' websites will be continually developed to provide improved access for stakeholders to ABCB information and services.

The Online Database and Content Management System will continue to be enhanced in 2007/2008. This will streamline and improve subscription management, ordering and delivery processes for BCA subscribers and other ABCB commercial products (such as the IFEG).

This database system will be completely independent of any current or future Principal Publisher subscriber systems and will provide the ABCB with greater opportunities to interrogate the data for internal reporting purposes. The system will also allow ABCB marketing to implement regular communication programs to BCA subscribers (and subscriber segments) and provide access to selected website content for specific access reasons (ie 7-day limited access, student access, Multi-user IP authentication, etc).

ABCB Strategic Plan 2007-2011

Attachment C

2007 Milestones

1. Determined sustainability framework subject to Ministerial/COAG endorsement (water, IEQ, materials, energy)
2. Met the 2005-06 business plan 5 performance indicators
3. National accreditation framework adopted by the Board with a 3 year implementation cycle by the States and Territories
4. Researched the impact of BCA in target audience
5. Substantial reduction in State variation in BCA
6. Completed Local Govt interventions empirical study
7. Jurisdictional consensus on 2007-08 business plan (incl responding to Govt policy direction on disability access to buildings as it applies to the BCA)
8. Comprehensive communications strategy prepared and phase 1 implemented
9. ABCB office is recognised as a quality assured organisation by JAS-ANZ
10. Developed new strategies for funding and delivery of BCA
11. Clarified and defined the respective roles of building regulations versus planning laws

2011 Scorecard

2011 Scorecard	2011 Outcomes
No variations All RIS complied with Used as exemplar for other regulatory regimes	**Nationally Consistent & Cost Effective Regulatory Framework**
National targets for water, IEQ, materials Energy in BCA Demonstrated reductions in energy and water use inbuilt environment Climate change issues reflected in BCA	**A More Sustainable Built Environment**
Less deaths and injuries from slips, trips, falls, fires and building defects Contributed through cost-effective regulation to support housing affordability Subject to Commonwealth legislation, more buildings accessible to greater proportion of population	**Safer & More Socially Inclusive Built Environment**
High awareness and uptake of BCA Increased take-up of performance based provisions Industry feeding into performance based solutions	**Informed & Responsive Building Industry**
High level of compliance with BCA and more innovative solutions Increased attendance at and demand for training Satisfactory skills pool (greater retention, higher attraction, competent practitioners)	**Increased Practitioner Skills & Competencies**

Pathways

Timeliness	**Leverage COAG/BMF/ LGPMC**	**Better Stakeholder Communication**	**Achieve Quality Assurance**	**Promote, Attract Develop & Retain Skill Levels**	**High Performing & Cohesive Board**	**Enhance Strategic Research Capability**	**Minimise Cost of Compliance**

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 10: FINALISATION OF ABCB STAKEHOLDER COMMUNICATION STRATEGY

FOR DECISION

IGA PRINCIPLE

Review of Stakeholder Co mmunications corresponds with the *IGA Princi ple* of **TRANSPARENCY, ACCOUNTABILITY AND CONSULT ATION INC LUDING INCREASED IMPACT ASSESSMENT**

RECOMMENDATION

It is recommended that in response to the recent independent review, the Board endorse the proposed Stakeholder Communication Strategy which involves:

- release and broad distribution of the ABCB Corporate Profile (final draft to be provided at meeting);
- broader communication and distribution of the ABCB Business Plan;
- development, release and broad distribution of "A Builder's Guide to the BCA";
- increased personal contact with other key industry associations;
- development of new BCA delivery model (refer Agenda Item 11);
- broader promotion of the ABCB's recently enhanced RIS processes;
- increased promotion of ABCB publications such as the Awareness Resource Kits, the ABRB and Non-Regulatory Handbooks;
- consideration of 'Account Manager' approach to customer relations; and
- formalisation of 'reverse feedback mechanisms' to better inform stakeholders of reasons for decisions and for their early engagement in consultation processes.

BACKGROUND

The 2006-07 Annual Business Plan required the ABCB to progress of a range of stakeholder communication and consultation priorities arising from the work of the 2004 Productivity Commission report *Reform of Building Regulation* . Recommendation 9.1 calls for enhancement of the BCA Awareness campaign including greater engagement with stakeholders, while Recommendation 8.4 stresses the importance of maintaining comprehensive consultation processes.

In addition, the current operating environment has seen several high-level Government reports (COAG, Banks etc) calling for enhanced levels of stakeholder consultation and communication to ensure robust impact assessment processes are in place, particularly for when regulatory change is being considered.

In late 2006, Di Marzio Research was commissioned to conduct an independent review of the ABCB's stakeholder communication activities with a view to ensuring that optimal arrangements are in place. Fifty stakeholders across various segments of the building industry underwent in-depth interviews that probed specifically on …'their attitudes towards ABCB engagement particularly in the areas of communication and consultation'.

[redacted] Di Marzio presented the report's finding to the 1 March 2007 Board meeting, and the Board requested that the Office consider its implications in the development of a draft

Stakeholder Communication Strategy. There was broad agreement to the research recommendations that saw a need to:

- *dramatically increase the ABCB's interaction with builders;*
- *clarify the ABCB's role and its functions;*
- *increase aw areness of A BCB publications such a s the Austra lian Regulation Bulletin (ABRB) and Non-Regulatory Handbooks, which few respondents had heard of;*
- *increase awareness of our consultations processes such as RISs and PFCs; and*
- *promote the 1300 number enquiry service more widely, particularly builders.*

The report also made several specific recommendations including:

- *better communicating on an ongoing basis of [the ABCB's] overall objectives, its strategy for achieving those objectives and at the very least its priorities for the year ahead*
- *segmenting ABCB stakeholders in o rder to gaug e those which require more 'persona l' attention, as opposed to those which simply need to be made aware of the website or 1300 number enquiry service*
- *potentially establishing a 'reverse feedback mech anism' to inform stakeho lders of th e reasons behind decisions, or to engag e stakeholders earlier in the consultation process, if possible.*

ISSUES

The ABCB seeks feedback from stakeholders through a variety of mechanisms including the biennial ABCB Conference, National Seminar Series, National Technical Summit and the 1300 number inquiry service. Equally, the ABCB consults broadly on proposed regulatory changes through Board/Committee processes and the Regulatory Impact Study consultation process. There is also contact at least twice a year with the 23,000 BCA subscribers. All of these channels were considered in the development of the proposed Stakeholder Communication Strategy.

PROPOSED STAKEHOLDER COMMUNICATION STRATEGY

Release and broad distribution of the ABCB Corporate Profile

A revamped ABCB Corporate Profile is now complete and ready for release pending Board approval. The Profile details the decision making process and history of the BCA, broadly outlines the Board and its committees and clearly defines the responsibilities of the ABCB. The Profile also details the functions of the ABCB Office. It is intended that the Profile will be widely disseminated through the following channels:

- the ABCB National Conference in September
- as a handout in the 2008 National Seminar series satchels
- as a supplement with BCA renewals
- through the networks of State and Territory Administrations
- as a handout at various industry conferences and
- via the ABCB website.

Broader communication and distribution of the ABCB Business Plan

At the time that the Di Marzio report was commissioned, the 2006-2007 Annual Business Plan had only just been finalised and awareness was low. As detailed in Agenda Item 9, the

Annual Business Plan outlines the ABCB's funding, core business and performance indicators, while showcasing our products and detailing the year's work program. Endorsed by Ministers, the Plan defines the roles of the ABCB, and communicates objectives for the year ahead. The Plan is available on the ABCB website and has been provided to Ministers, State and Territory Administrations, BCC and various stakeholder groups.

It is proposed that the Plan be bundled with the Corporate Profile and disseminated at the National Conference in September where a broad range of stakeholders will be present. The Plan will also be included in the 2008 National Seminar series satchels, which are generally provided to upwards of 1,000 delegates from across industry. The Plan could also be provided with BCA subscription renewals.

Development, release and broad distribution of "A Builder's Guide to the BCA"

A simplified guide will be developed that focuses on the BCA and targets builders specifically, in response to the report's suggestion that a need exists to "dramatically increase the ABCB's interaction with builders" and in a "less high end" manner. The purpose of the guide would be to provide a basic understanding of the philosophy and application of the BCA to builders. The style of the guide could take a first-person approach and pose the question: *Don't I just need to foll ow plans and specifications?* while its contents could cover such frequently asked questions as:

- Who is responsible for compliance with the BCA?
- Who is responsible if something is built that doesn't comply?
- Design and construct business versus construct only
- Be aware of the Trade Practices Act
- Building design requirements in government regulations other than the BCA

The guide could be distributed to the HIA and MBA for dissemination to their members and could be posted to builders using the 1300 number enquiry service. It could also be widely disseminated via local government, industry associations and at industry conferences. However, a final decision on its distribution would need to be considered as part of the training initiatives that are being developed as part of the new BCA Delivery Model (refer agenda item 11).

In addition, the 1300 number enquiry service itself could be more heavily promoted to builders, to provide them with more personal contact with the ABCB and increase overall communication with this important segment of the industry. For the Board's information, at Attachment A is a summary of key trends relating to the 1300 number enquiry service.

For the information of the Board the Office is also undertaking further quantitative analysis (through Di Marzio Research) to gain a better understanding of issues specific to builders, which will also inform development of the Guide.

Increased personal contact with other key Stakeholders

As well as increased activities with builders and their industry associations, it is also proposed that ABCB-initiated contact could be increased with the CEO's of a number of other key industry associations to ensure improved stakeholder communications.

Proposed associations include the Australasian Fire Authorities Council, Building Designers Association Australia, Royal Australian Institute of Architects, Engineers Australia, and the Association of Consulting Engineers Australia. More personal contact could be established

in the first instance through face-to-face meetings to discuss the Annual Business Plan and other relevant issues of interest. Each of these organisations would be invited to be further involved in ABCB consultative processes, where appropriate.

Development of new BCA delivery model

The development of a new BCA model forms an important part of the Stakeholder Communication Strategy and is discussed at Agenda Item 11.

Broader promotion of enhanced RIS process

A number of issues were raised in the Di Marzio report regarding the ABCB's RIS processes. As a result of the renewed interest in regulatory governance more broadly and impact assessment specifically, the ABCB undertook a review of its RIS processes late in 2006.

The review recommended a range of improvements including more robust, early stage analysis, more transparent consultation processes and better communication of our processes to our stakeholders. The majority of the review recommendations are currently underway including the development of Impact Assessment communication documents which have received approval from the Office of Best Practice Regulation as being consistent with COAG Regulatory Principles.

In February 2007 the ABCB wrote to industry stakeholders to discuss positive developments in our impact assessment processes. This is part of on ongoing dialogue with our industry partners that also includes discussions with Standards Australia regarding improved early-stage analysis of Standards proposed for referencing in the BCA.

In addition, an ABCB Impact Assessment Manual is currently under development that will improve the transparency and understanding of ABCB processes. The Manual will be available electronically on our website and distributed widely through appropriate channels.

Increased promotion of ABCB publications such as the Awareness Resource Kits, the ABRB and Non-Regulatory Handbooks

While the Di Marzio report found that awareness of ABCB publications other than the BCA was low, the Office is of the view that the BCA remains our core product and should remain the priority in regard to promotion. However, it is acknowledged that more could be done to raise awareness of other important ABCB publications.

One method of increasing awareness could involve including electronic copies of selected publications (such *Introduction to the BCA* and *Understanding the BC A's Performance Requirements* Resource Kits) with BCA subscription renewals. These publications address many of the frequently asked questions that are responded to via the 1300 enquiry service and may assist stakeholders. It is estimated that production of the CDs and their inclusion in the BCA mail-out would cost in the vicinity of $50,000 p.a.

Publications such as the ABRB and Non-Regulatory Handbooks could also be further promoted through more frequent advertising in relevant industry publications. Certain publications could also be included in satchels at the National seminars but this could prove expensive. The associated costs would need to be examined as some publications are distributed on a cost recovery basis.

Consideration of 'Account Manager' approach to customer relations

A further recommendation of the Di Marzio report was the adoption of an 'account manager' system to communicate with stakeholders. This would involve a dedicated ABCB staff member handling specific enquiries for each industry segment, e.g. one account manager would be responsible for all telephone calls and correspondence from architects, another account manager would be responsible for all the building surveyors and so on.

The Office seeks the guidance of the Board as to whether this is a recommendation that could realistically be considered in light of the current budget and Business Plan constraints. An account manager system would require significant additional resources, but may provide stakeholders with the more 'personal' attention that the Di Marzio report suggested would be effective.

The Office is of the view that an account manager approach to stakeholder communication would be too resource intensive and should not be supported.

Formalisation of 'reverse feedback mechanisms' to inform stakeholders of reasons for decisions and for their early engagement in consultation processes

The Office is of the view that 'reverse feedback mechanisms' are already in place but may require better documentation and communication to stakeholders.

For example, the Proposal for Change (PFC) process is a key aspect of the annual National Technical Summit and the number of submissions received has increased incrementally in recent years. Should a member of the public wish to make a submission to the Summit, guidance on how to prepare a PFC as well as a user template are available on the ABCB website. In addition to this, a reverse feedback mechanism was put in place in 2006 for applicants whose submission to the NTS was unsuccessful. Each applicant was sent a letter of acknowledgment outlining the reason why their application was unsuccessful. Similar letters will be sent out again this year, keeping the stakeholders abreast of the decision-making processes of the Office.

Another example of how the ABCB provides a 'reverse feedback mechanism' was demonstrated through the Chairman's 9 March 2007 letter (see Correspondence, Agenda Item 14) which addressed the correspondence from a smoke detector manufacturer. The manufacturer was concerned about the continued use of both photo-electric and ionisation smoke detectors as per AS3786 Smoke Alarms. The Chairman's letter clarified that, having considered a Standards Committee review proposing an amendment which would effectively relegate the latter to a state of non-compliance, the Board deemed the available evidence inadequate to amend AS3786 and so both types of detector would remain permissible. The Chairman's response to this matter demonstrates the ABCB's commitment to stakeholders to swiftly address their concerns in an open and transparent manner.

It is recommended that set criteria be agreed upon for responding to calls from industry where they are unsuccessful in their call for BCA change. If agreed, this criteria would be developed by the Office and brought back to the Board for endorsement prior to being made publicly available.

ATTACHMENT A

ABCB 1300 ENQUIRY SERVICE

FOR INFORMATION

The ABCB operates a 1300 enquiry service which is a free advisory service available to practitioners and the general public. The service allows anyone with a technical enquiry to draw upon the knowledge, skill and expertise of ABCB staff relative to the BCA. Enquiries are made by telephone or email. Advice is not given on matters relating to State and Territory regulation, planning, the design and approval process and specific construction techniques. Enquiries that cannot be resolved by the ABCB technical team are directed to State and Territory administrations, local government, Standards Australia, or other institutions depending on the nature of the enquiry.

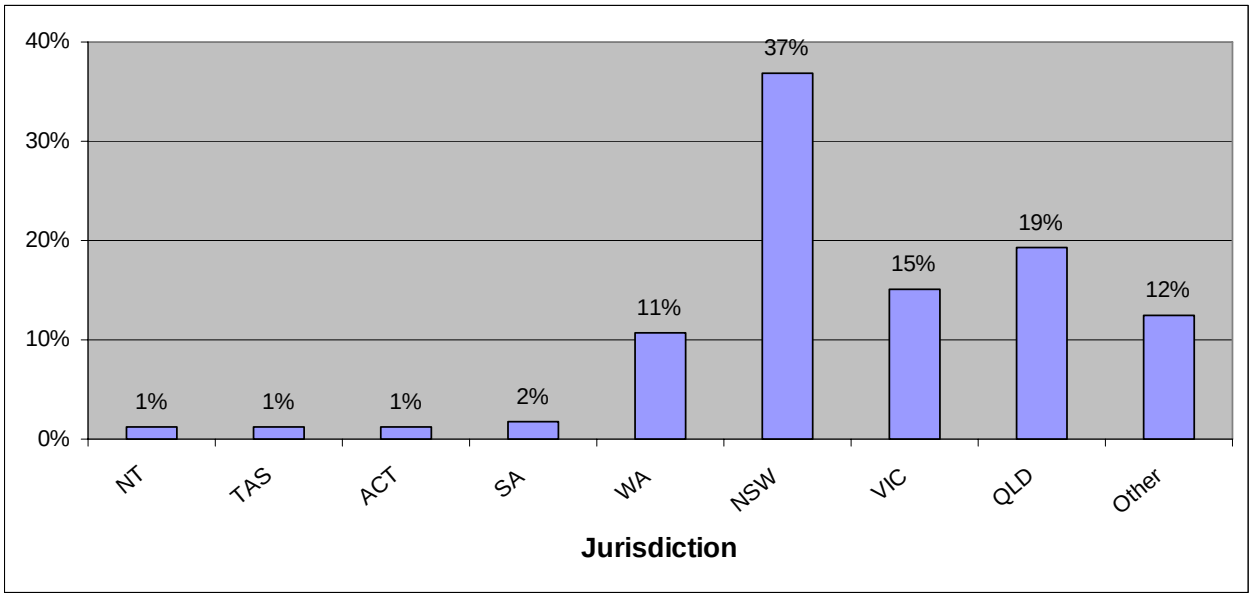
The service has been available to the public since the establishment of the ABCB and on average receives over 20 enquiries per day (with indications are that this level is steadily increasing). The ABCB aims to respond to all enquires within 24 hours.

In recent times, the ABCB has taken measures to improve the quality of the service, including advertising the service in the BCA and on the ABCB website. In July 2006 the ABCB developed a database to record the details of all enquiries received. The database will assist in monitoring who is calling (and why) and will also provide useful feedback for BCA development purposes.

The following charts have been prepared to demonstrate the type of information being captured by the database. The information provided is based on a sample taken for the period **1 April 2007 to 1 M ay 2007** . Over this period, a total of 537 calls were received and enquiries by jurisdiction, sector and BCA provision were analysed. Detail on how enquiries were resolved is also provided.

Chart 1 - Enquiries by Jurisdiction: 1 April 07 – 1 May 07

Not surprisingly, most enquiries stem from News South Wales, Victoria, and Queensland. The "other" segment represents either international enquiries or where the location of the caller/email was not identified.



For comparative purposes, the following chart provides a guide on market share of construction activity based on dollar value.

Chart 2 - State/Territory Market Share of Construction Activity (source BIS Shrapnel)

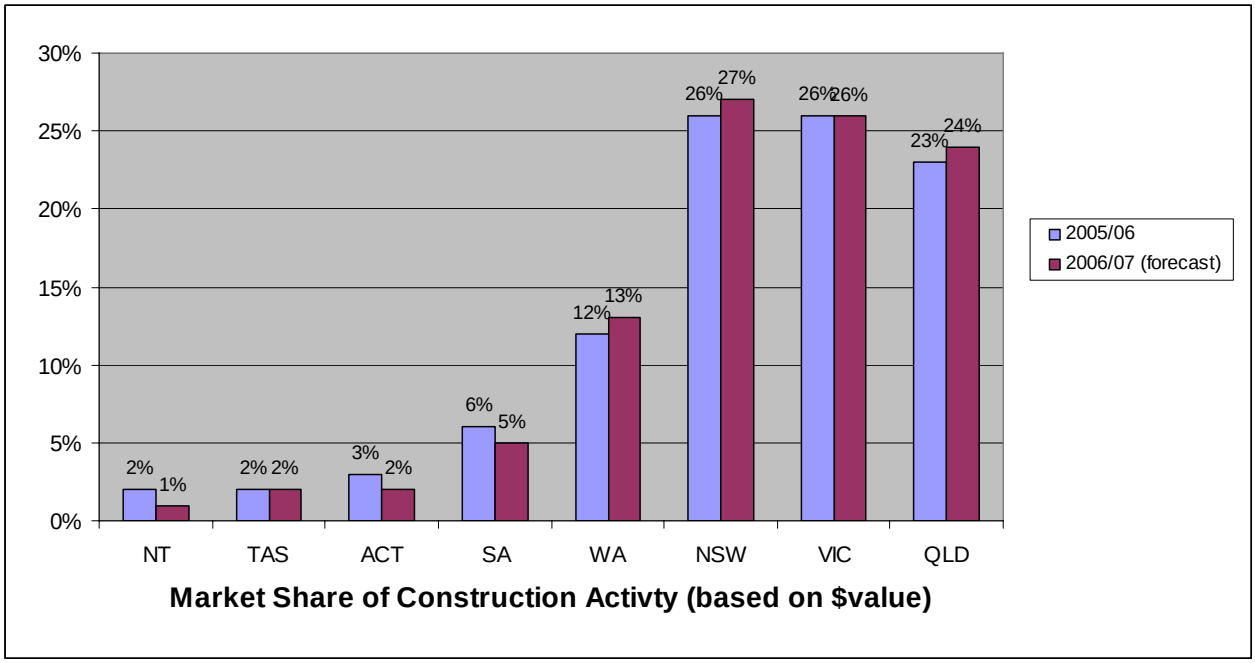


Chart 3 - Enquiries by Sector

The highest proportion of enquiries was made from the "Industry" sector, averaging 57 percent of enquiries made. The Industry sector includes enquiries from builders, trades, building surveyors/certifiers and various consultants. The Public sector held the second largest share of all enquiries at 19 percent.

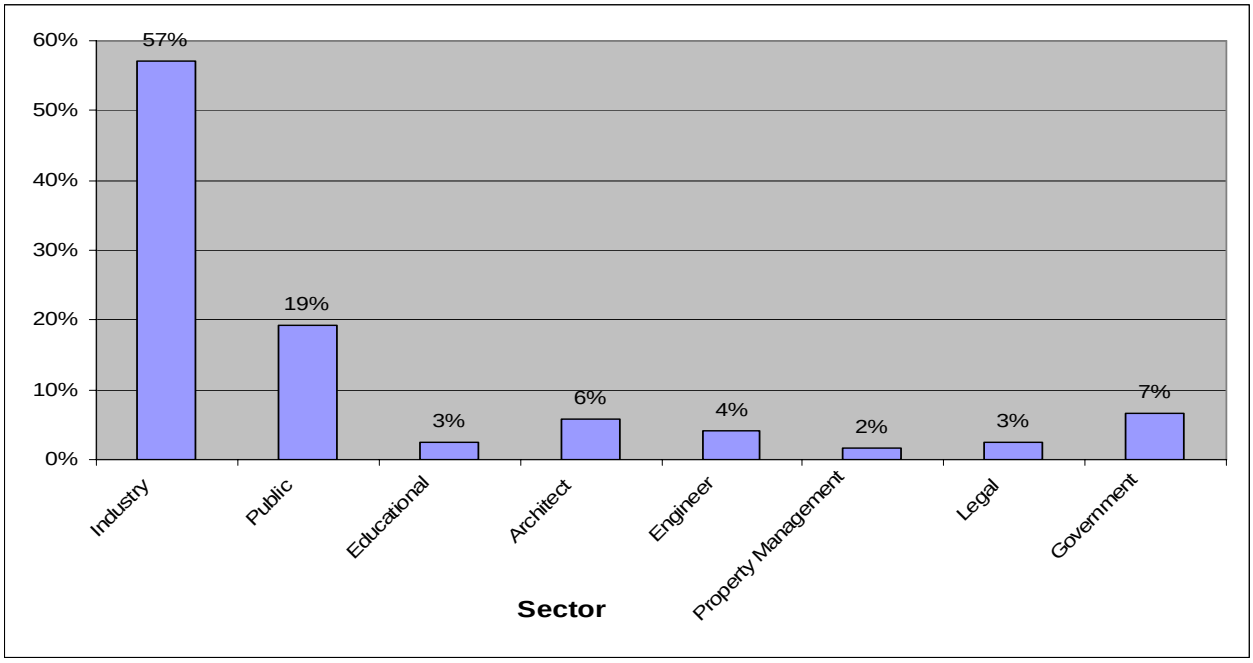


Chart 4- Enquiries about BCA Provisions

The highest proportions of enquiries were made regarding energy efficiency, access & egress and fire safety. The number of call regarding energy efficiency is relatively high. This level of enquiry is not unexpected and is being partly addressed through the roll-out of energy efficiency resource kits and the National information seminars.

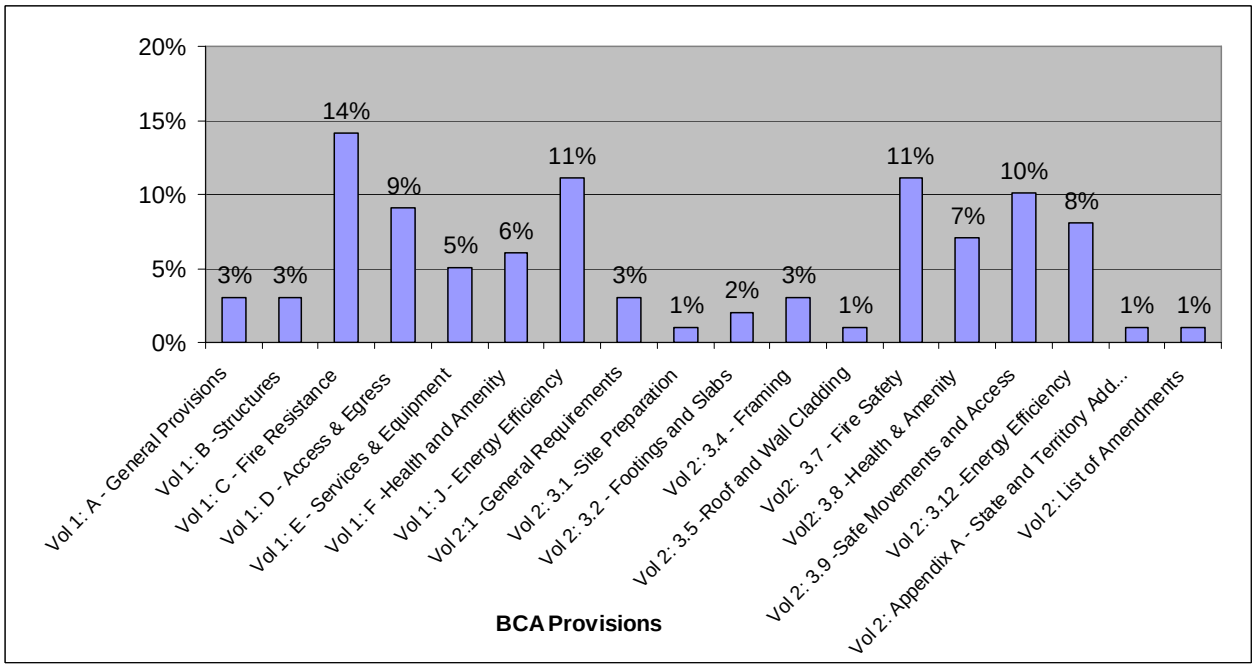
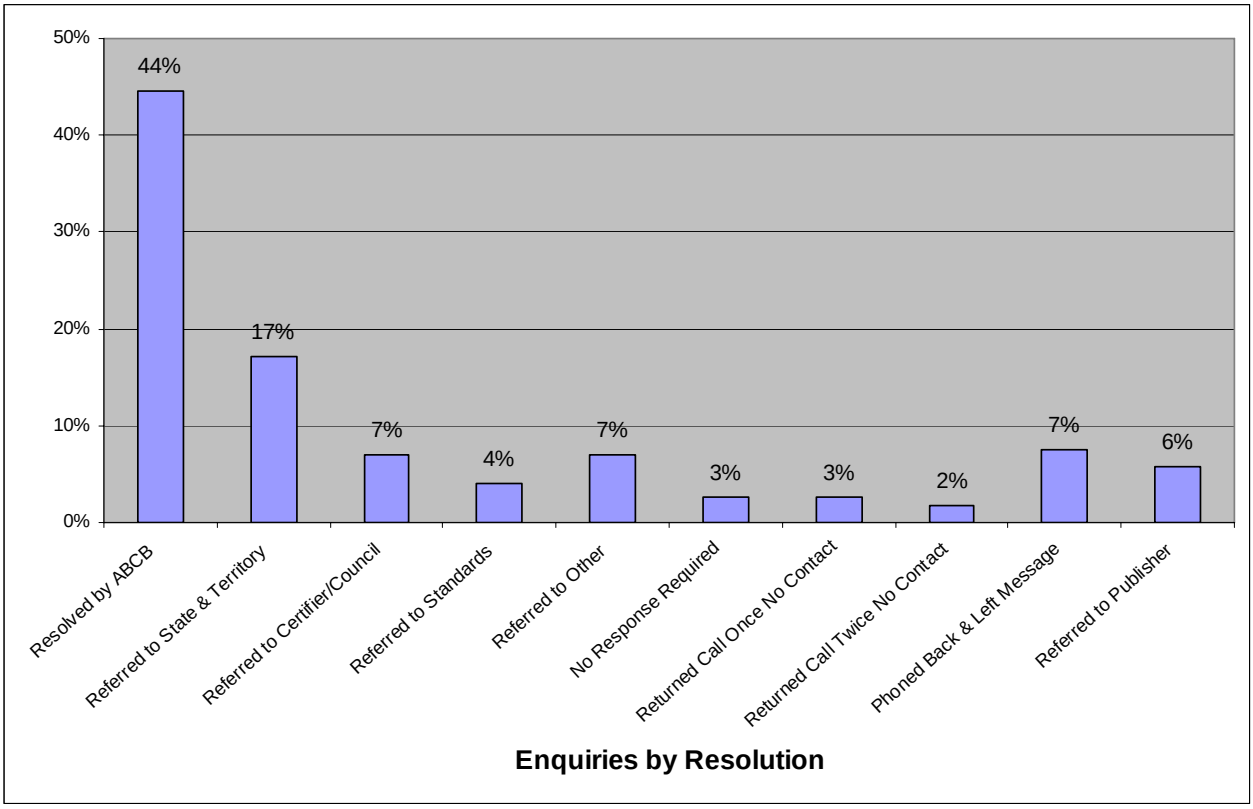


Chart 5- Resolution of Enquiries

As shown below 44 percent of enquiries are resolved by the ABCB.



AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 11: BCA DELIVERY MODEL

FOR INFORMATION

IGA PRINCIPLE

THE F UTURE BCA DELIVERY MODEL corresponds with the IGA Principle of ***MINIMUM PERFORMANCE-BASED CODES TO AC HIEVE HEALTH, SAF ETY, AMENITY AND SUSTAINABILITY OF BUILDINGS***

RECOMMENDATION

That the Board notes:

- progress on the development of a new and improved BCA delivery model
- the continued production of the BCA volumes on recyclable paper stocks provided from sustainable forest plantations as opposed to imported recycled paper stocks.

BACKGROUND

Following the Board's support at the 2007-1 March meeting, the Office has been engaged in meeting and communicating with a number of State and Territory: licensing bodies, administrations; and industry associations with the aim of identifying an improved BCA delivery model appropriate to the individual requirements of each State and Territory.

The Office has also assessed the environmental aspects of the current hard copy production as requested by the Board.

FOR INFORMATION

BCA Delivery Model

A new BCA delivery program is being developed in consultation with each of the States and Territories in order to improve BCA access, usage and understanding. This program also involves the development of a series of State and Territory based annual training initiatives that will involve individual Administrations, industry associations, and licensing authorities with the aim of improving industry skills and overall construction practices.

To date discussions have been held with the respective Administrations and licensing bodies throughout SA, WA, NT, NSW, QLD and TAS. Discussions have also commenced with industry associations throughout NSW, ACT and VIC. These have included AIB, MBA, HIA, School of Architecture, Engineers Australia, AIBS and RAIA.

Based on these discussions it has been clearly identified that while each of these State and Territories are keen to pursue a new distribution model that will deliver the BCA to all building practitioners, each requires a slightly different solution and timeframe. The most common thread is that relating to the education and training currently lacking throughout the industry.

As a result of these meetings, the Office is preparing a proposed solution for each State and Territory. Discussions are continuing with those already contacted, with meetings soon to commence with all remaining States and Territories.

Practitioner Research
In consideration of the proposed BCA Delivery Model, National and State/Territory based research on Builders regarding current usage, awareness and understanding of the BCA has been initiated. A summary of the research findings will be provided for the Board members during the meeting.

Alternative BCA Formats and Delivery Channels
The recently presented Volume Two 'Modules' have been discussed with industry representatives with very positive feedback. One of the major benefits is seen as the opportunity in which to provide trade groups with relevant and up-to-date building practices information.

The outcomes of these meetings have identified:

- the proposed Modules should not be seen as a Volume Two replacement for licensed builders expected pricing of the Modules would be between $29 and $35;
- the Modules could become part of education and training for construction trades
- while the professional segments could benefit from obtaining free access to the Performance Requirements of the BCA, little benefit would be realised by the builders and sub-trades
- supply of the BCA and/or Volume Two alone will not improve building practices or knowledge. Education and Training is an essential component of a future delivery program
- current BCA pricing is not seen as an impediment to purchasing a subscription
- licensed builders should be made aware of their legal and legislative responsibilities
- the current communication style is not pitched at the builder, an easier to read document would assist builders in understanding and using the information and
- there needs to be a clear understanding and distinction between the certifiers, builders and sub-trades roles and responsibilities.

Based on this feedback, the Office would not recommend providing the Performance Requirements of the BCA as freely available information.

Instead it is recommended that the Office looks to further pursuing the development of the Modules and state-based builder's education and training package.

Environmental Aspects of BCA Production
Production of the BCA underwent an initial environmental review prior to the 2004 production of the current 'book' format. ABCB 47 Agenda Item 5 identified a number of environmental benefits associated with moving from the ring binder styled production to the bound volumes. In addition the Office identified that producing the BCA on recycled content would not only result in a higher cost/sale price but in using recycled content, the volumes would no longer be recyclable due to the nature of recycling processes.

Recent investigations into current environmental options again support the existing production model. This model uses sustainable plantation timbers which are mechanically broken down (as opposed to chemically treated) for pulp and is only lightly bleached, hence the off white colour. The current paper stocks are also recyclable. Only vegetable based inks are used in the production of the BCA.

Advice from the ABCB's publishers is that if the Office were to move to a recycled stock, this would need to be imported (due to lack of Australian recycled stocks), resulting in an estimated 40% increase in paper costs - equating to approximately 20% increased overall production costs. In addition, the usefulness of recycled papers is very limited, as the importation of recycled paper stocks ultimately adds to Australian land fill.

Subscriber and Subscription Management

The recent BCA tender process has been unsuccessful. The Office interviewed four organisations, but was not convinced that any had suitably demonstrated that they could meet the selection criteria.

As a result of this outcome, the Office aims to extend the current publishing contract for a period of three months, in which time a new and revised tender will be advertised nationally. During this period, the Office will be increasing its current level of involvement with BCA subscriptions through the expansion of the current in-house call centre and Subscription Management System. This will provide for greater control over BCA products and possible cost savings.

The resulting tender should see a print, warehouse and distribution supplier appointed prior to the production of BCA2008, and all BCA sales and subscriptions managed within the office.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 12: NATIONAL ACCREDITATION FRAMEWORK FOR BUILDING CERTIFIERS

FOR DECISION

IGA PRINCIPLE

National Consistency Issues correspond with the *IGA Pri nciple* of **GREATER NATI ONAL CONSISTENCY INCLUDING VARIATION REDUCTION STRATEGY**

RECOMMENDATION

That the Board:

- note that our efforts to get this subject on the COAG agenda have not been successful;
- endorse the National Accreditation Framework for building certifiers;
- support efforts to encourage the Australasian Building Certification Forum to assist with the NAF's national implementation; and
- note that the implementation of such a framework will require a commitment from the eight jurisdictions.

BACKGROUND

The ABCB Strategic Plan 2007-2011 approved by the Board in November 2006 includes a 2007 milestone which involves the National Accreditation Framework (NAF) for building certifiers being adopted by the Board with a 3-year implementation cycle by the States and Territories.

The development of the NAF has a long and frustrating history which has involved a considerable amount of the Board's and Office's time and resources.

At the Board meeting of 24 July 1997 the Board agreed that work should commence on the development of nationally consistent criteria for building certifiers and possibly other building professionals. The Board agreed that national consistency for building certification was important for the following reasons:

- the lack of an agreed national standard for the registration (or other employment requisite) of building certifiers;
- State and Territory differences on the acceptability of educational qualifications (a diploma may be accepted as a pre-requisite in one jurisdiction, while another may deem a tertiary degree necessary to practice);
- the widespread introduction of private certification; and
- the impact of the Commonwealth Mutual Recognition Act 1992 on the administration of accreditation within individual jurisdictions.

These considerations had the potential to impede the take-up of the performance-based BCA 96.

Following development of a number of discussion papers which were considered at Board meetings between 1997 and 1999, the Board considered a draft national framework setting out building certifier accreditation requirements. The framework was developed and circulated to industry for comment, resulting in general support for the concept of a national system of accreditation. This envisaged a 2-level system. However there was disagreement particularly among industry organisations over whether a 2-level or a 3-level system should be adopted. The Board eventually agreed to adopt the 2-level system.

In August 2001 the Board formally agreed to the framework following consultations with the building industry and State and Territory administrations. In April 2003 the then Chair of the ABCB announced publicly (see Media Release at **Attachment A**) the introduction of uniform national competency standards for building certifiers/surveyors which State and Territory Ministers had approved. The Australian Institute of Building Surveyors took a key role in progressing competency standards. However, since that date unfortunately the NAF has not been uniformly adopted by all State and Territory jurisdictions:

- the Northern Territory and Tasmania have implemented accreditation frameworks modelled on the NAF.
- Western Australia has passed a bill implementing the NAF through the legislative assembly and is waiting for it to be passed through the legislative council.
- Victoria, ACT and South Australia have single tiered accreditation frameworks in place. South Australia has considered adopting the NAF but has not done so at this stage.
- Queensland has a three tier framework similar to the Australian Institute of Building Surveyors accreditation framework.
- on 1 March 2007 New South Wales implemented a three tier accreditation framework replacing the former four tier framework.

A summary of the NAF is at **Attachment B** and a table detailing each jurisdiction's accreditation arrangements is at **Attachment C**.

More recently, the Board revisited the issue following the 2004 Productivity Commission study *Reform of Building Regulation* which called for more to be done to assist national consistency in administrative systems. At the Board's 2005-3 meeting a Board Working Group was established to examine opportunities and priorities for projects assisting national consistency and it was noted that the NAF had still not been implemented at a local level.

At the Board's 2005-4 meeting the National Consistency Working Group reported that the NAF was still one of the areas of priority for harmonisation and should be pursued through the Australasian Building Certification Forum (ABCF). This view was also endorsed by the BCC administrations.

ISSUES

Australasian Building Certification Forum

At the May 2006 meeting of the ABCF a draft Terms of Reference was considered - "*To share issues and maximise commonality along with mutual recognition of the licensing, auditing and investigation of complaints concerning the work of certifiers throughout the States and Territories of Australia and New Zealand*".

The next ABCF meeting is expected to be held in late 2007 and the ABCB Office will be attending to pursue reinvigoration of the NAF issue.

COAG National Reform Agenda

Relevant to the NAF considerations is the COAG communiqué of 10 February 2006 which included a decision to progress the effective implementation of full mutual recognition of skills and qualifications across Australia.

Under this decision, individuals in licensed trades are to have full mutual recognition of their licences in all jurisdictions and not face duplicate assessment requirements for obtaining qualifications and licences. While the decision relates to six priority trades - electricians, plumbers, motor mechanics, refrigeration and air-conditioning mechanics, carpenters and joiners and bricklayers, all relate to the building industry and all are to be achieved by 30 June 2007.

However the COAG Skills Recognition Steering Committee met in March 2007 and concluded that certifiers should be excluded from the mutual recognition process on the grounds that they are para-professionally/professionally trained. They were therefore deemed to fall outside the scope of work anticipated by COAG in its decision on vocationally trained occupations.

Next Steps

Significant investment by the ABCB has been made in the NAF and it appears that most stakeholders would like to see it adopted nationally. However, the will and implementation must come from the States and Territories as the ABCB has no jurisdiction or ability to rein-in fragmentation.

Despite the current lack of COAG support, it is proposed that the ABCB continues to pursue adoption of the NAF at the next ABCF meeting. It is also suggested that Board Members encourage review of their building certifier accreditation arrangements to see if they can be brought into line with the NAF.

ABCB

Australian Building Codes Board

ABCB

April 2003

FOR IMMEDIATE RELEASE

MEDIA RELEASE

NATIONAL COMPETENCY STANDARDS FOR BUILDING SURVEYORS

Chair of the Australian Building Codes Board, Peter Laver, has welcomed the introduction of uniform national competency standards for Building Surveyors that were approved recently by all State and Territory Ministers.

The competency standards were developed with the support of the ABCB in conjunction with industry through the Australian National Training Authority (ANTA).

Mr Laver said the standards are now ready to be incorporated into a Training Package for use by the vocational education and training system.

"This advance will mean that, our graduates from TAFE will be able to enter the workforce with a full complement of skills in the knowledge that their qualifications will be recognised widely and they will be able to work more easily in and between any State or Territory".

The Australian Institute of Building Surveyors (AIBS) took a key role in progressing the competency standard development and will be monitoring the impact of the national standards as graduates enter industry.

AIBS spokesman Geoff Mitchell said the move was a great step forward.

"The AIBS is delighted to have participated in the process and is looking forward to welcoming a new breed of graduate to the profession."

The new competency standards reflect modern industry practice, and combine all the core components of issues involved in structure, materials and geomechanics.

Students will learn how to work with performance, be trained in fire engineering technology, energy efficiency, the application of building control legislation, as well as risk management principles in the building regulatory environment.

Importantly, the scope and content of the competency standards directly align with the Board's National Accreditation Framework for Building Surveyors/Certifiers. The Framework classifies the work scope, core functions and minimum education and experience requirements of building surveyors into 2 levels. one of which is directly relevant to building surveyors with a qualification from TAFE.

The national competency standards compliment earlier work that has been undertaken on Higher Education Benchmarks developed through the Board and industry in respect of building surveying qualifications attained through university.

For further information please call [redacted] from the ABCB on [redacted] may be contacted on [redacted]

Attachment B

NATIONAL ACCREDITATION FRAMEWORK FOR BUILDING SURVEYORS/CERTIFIERS

NATIONAL

Category	Work Scope	Quals & experience	Generic Functions
Certifier Level 1 (Private certifiers & local government employees)	Unrestricted (Work on all classes & size of buildings)	• Degree (to be defined after competency development) **or** • RPL within 5 years • 3 years relevant experience	• Assess & approve plans • Undertake inspections • Approve building occupation/use
Certifier Level 2 (Private certifiers & local government employees)	• 3 storeys maximum • Maximum floor area of 2000m²	• Advanced Diploma (to be defined after competency development) **or** • Working at this level at time of framework implementation • 2 years relevant experience	• Assess and approve plans • Undertake inspections • Approve building occupation/use

Note that under Generic Functions, the word "approve" should be taken as having the same meaning as "certify".

Overview of National Accreditation for Building Surveyors and Certifiers		
State	**Accreditation Framework**	**Certification Qualifications**
NSW	Accredited Certifier: Grade 1 *(effective from March 1 2007)*	Qualified to issue construction, compliance and complying development certificates for all classes of buildings that comply with performance requirements.
	Accredited Certifier: Grade 2 *(effective from March 1 2007)*	Qualified to issue construction, compliance and complying development certificates for class 1&10 buildings, class 2 to 9 not exceeding 2 000 m² or 3 storeys high, and buildings class 2 buildings not exceeding 4 storeys where the ground floor is a car park.
	Accredited Certifier: Grade 3 *(effective from March 1 2007)*	Qualified to issue construction, compliance and complying development certificates for class 1 &10 buildings that comply with *BCA* performance requirements.
VIC	Building Surveyor	Qualified to perform building surveying work on all classes of buildings.
QLD	Building Surveyor (unrestricted)	Qualified to perform building surveying work on all classes of buildings, including: assessment and approval, inspections for compliance, and inspection of existing buildings for hazardous situations.
	Assistant Building Survey (restricted)	Qualified to perform building surveying work on all classes of buildings to make assessments against codes and standards of buildings not exceeding 2 000 m² or 3 storeys high, inspections for compliance, and inspections for buildings not exceeding 2 000 m² or 3 storeys high for hazardous situations.
	Building Surveyor Technician	Qualified to make assessments against codes and standards, and inspections for compliance of buildings having a rise of not more than two storey's and floor areas not exceeding 500m^2, and inspections of existing buildings having a rise of not more than 2 storey's and floor areas not exceeding 500m^2 for hazardous situations.
SA	Building Surveyor	Qualified to perform building surveying work on all classes of buildings.
WA	Building Surveyor	Qualified to perform building surveying work on all classes of buildings. WA is aiming to implement NAF on 1 January 2008.
TAS	Building Surveyor	Qualified to perform building surveying work on all classes of buildings
	Assistant Building Surveyor	Limited to 3 storeys and 2000 m^2, restriction to domestic buildings for assistants who experience is limited
ACT	Principal Building Surveyor	Licensed to provide building certification work services on all classes of building.
	General Building Surveyor	Licensed to provide building certification work services in relation to a building that is 3 storeys or lower and that has a floor area of 2000 m^2 or less.
NT	Building Certifier Unrestricted	Qualified to perform building surveying work on all classes of buildings.
	Building Certifier Residential	Qualified to perform building surveying on buildings for buildings Classes 1 and 10 (as specified in Building Code Volume 2)

Agenda Item : 13 FINANCIAL STATEMENT

Australian Building Codes Board
Statement of Financial Performance
as at 31 March 2007

	Current Month Actual	*Year To Date Date Actual*	*Year To Budget*	*$ Variance*	*% Variance*	*Full Year 2006-07 Budget*
Revenues from ordinary activities						
Revenues from Australian Government	83,333	749,997	749,997	-	0.00%	1,000,000
Revenues from State Government	83,333	749,997	749,997	-	0.00%	1,000,000
Goods and services	369,803	3,537,061	3,537,220	159	0.00%	4,651,975
Other revenues	18,709	328,401	309,685	- 18,716	-6.04%	361,958
Revenues from ordinary activities	555,178	5,365,456	5,346,898	- 18,557	-0.35%	7,013,932
Expenses from ordinary activities						
Employees	323,303	2,672,844	2,744,828	71,983	2.62%	3,769,312
Suppliers	200,288	1,397,440	1,336,856	- 60,584	-4.53%	1,873,181
BCA costs	75,000	802,710	802,710	- 0	0.00%	1,027,710
Depreciation and amortisation	8,875	69,813	69,731	- 82	-0.12%	93,731
Corporate charges	41,665	374,985	374,985	-	0.00%	500,000
Expenses from ordinary activities	649,131	5,317,793	5,329,110	11,317	0.21%	7,263,934
Net surplus / (deficit) from ordinary activities	(93,954)	47,663	17,789	29,874	167.94%	(250,001)

Statement of Cash Flows
for the year ended 31 March 2007

Cash at bank - balance carried from previous year	831,084
Cash at OPA* - balance carried from previous year	3,139,000
Cash received	3,657,111
Cash transferred from OPA	635,000
Cash used	4,999,720
Cash at bank at the end of the reporting period	123,476
Cash at OPA* at the end of the reporting period	2,504,000
Total cash at the end of the reporting period	2,627,476

OPA = Official Public Account (ABCB reserves)

Comments:

The % variance above appears significant, however the actual YTD variance is only 4.08% as per Attachment A. The reason for the difference is that the calculations above include the Commonwealth contributions whereas Attachment A does not. The actual YTD dollar variance of $29,874 is consistent across both reports and is insignificant in a budget of $7.3m.

Attachment A

ABCB BUDGET VS ACTUAL 2006/2007 - YTD - ACCRUAL

Description	*Mar YTD - Budget*	Mar YTD - Actual	Mar YTD - Variance
Revenue			
611 Section 31 Income	*-749,997*	-749,997	0
612 Cat B: Goods & Services	*-3,537,220*	-3,537,061	-159
640 Other Revenue	*-309,685*	-328,401	18,716
Total Revenue	***-4,596,901***	**-4,615,459**	**18,557**
Expenses			
811 DIST Permanent Staff	*882,188*	954,728	-72,541
812 Temporary Staff	*1,800,955*	1,648,372	152,583
813 Board Members	*61,685*	69,744	-8,059
820 Cost of Goods Sold	*802,710*	802,710	0
821 Travel	*359,330*	403,681	-44,351
822 Consultants & Contractors	*246,844*	272,227	-25,383
823 IT & Telecommunications Costs	*68,287*	71,116	-2,829
824 Staff Development & Training	*39,459*	28,256	11,203
825 Office Supplies	*109,603*	113,667	-4,063
826 Legal & Finance Expenses	*111,641*	101,837	9,804
827 Asset Related Expenses	*69,731*	69,813	-82
829 Other Admin Expenses	*42,928*	36,592	6,336
82A Consultants	*301,190*	289,984	11,206
82B Motor Vehicle Expenses	*10,464*	9,009	1,455
82C Advertising & Sponsorship	*25,032*	38,314	-13,283
82D Conference / Seminar (non staff dev)	*15,728*	26,483	-10,755
840 Property Operating Expenses	*0*	1,000	-1,000
841 Property Repairs & Maintenance	*6,347*	5,273	1,074
886 Corporate Services Division	*374,985*	374,985	0
Total Expenses	***5,329,110***	**5,317,793**	**11,317**
Net Cost of Services			
Net cost of services	**732,208**	**702,334**	**29,874**
Variance %			**4.08%**

Agenda Item 14: ABCB CALENDAR OF EVENTS

FOR INFORMATION

It is recommended that the Board note the attached ABCB Calendar of Events.

This Calendar is updated prior to each Board meeting.

ABCB Calendar of Events 2007

JANUARY

BCA Strategic Review Consultation Meetings
- Wednesday 24 January 2007, Hobart
- Thursday 25 January 2007, Melbourne

FEBRUARY

Deadline for PFC submissions to change BCA
- Thursday 1 February 2007.

BCA Strategic Review Consultation Meetings
- Thursday 1 February 2007, Adelaide
- Tuesday 20 February, Brisbane
- Wednesday 21 February, Darwin.

BCA 2007 Information Awareness Seminars
- Friday 9 February, Canberra
- Wednesday 14 – Thursday 15 February, Perth
- Wednesday 21 February, Adelaide
- Monday 26 – Tuesday 27 February, Sydney.

Joint Building / Planning Group Meeting
- Wednesday 28 February 2007.

MARCH

Board Meeting
- Thursday 1 March, Sydney.

BCA 2007 Information Awareness Seminars
- Monday 12 – Tuesday 13 March, Brisbane
- Thursday 15 March, Darwin
- Tuesday 20 March, Hobart
- Thursday 22 – Friday 23 March, Melbourne.

Codemark Committee / Scheme Management Group
- Monday 26 March Handorf SA.

State and Territory Administrations Meeting
- Tuesday 27 March 2007, Handorf SA.

MARCH 'continued'

National Technical Summit (NTS)
- Tuesday 27 – Wednesday 28 March 2007, Handorf SA.

BCC Meeting
- Thursday 29 March, Handorf SA.

Local Government Planning Ministers Council Meetings
- TBA, Auckland

APRIL

National Building Appeals Forum Meeting
- Tuesday 3 April, Sydney

Joint Building / Planning Group Meeting
Wednesday 30 April 2007

MAY

Adoption of the BCA
- Tuesday 1 May 2007.

Joint Building / Planning Group Meeting
- Wednesday 30 May 2007.

Board Meeting
- Thursday 31 May 2007, Adelaide.

JUNE

Release of BCA 2008 for public Comment.
- Week commencing 4 June

JULY

BCC Meeting
- Week commencing 23 July

AUGUST

Local Government Planning Ministers Council Meetings
- TBA, Brisbane

SEPTEMBER

12th World Federation of Technical Assessment Organisations (WFTAO) Conference and Meeting
- Wednesday 19 September to Friday 21 September, Gold Coast.

Building Australia's Future Conference
- Sunday 23– Wednesday 26 September 2007, Gold Coast.

Board Meeting.
- Thursday 27 September 2007, Gold Coast

OCTOBER

BCC Meeting
- TBA

Local Government Planning Ministers Council Meetings
- TBA

NOVEMBER

No events currently scheduled

DECEMBER

Board Meeting
- Thursday 6 December, Perth.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 15: GENERAL MANAGER'S REPORT ON RECENT DEVELOPMENTS

FOR INFORMATION

[redacted] to provide an oral report.

AUSTRALIAN BUILDING CODES BOARD

ABCB 2007-2

Agenda Item 16: CORRESPONDENCE

FOR INFORMATION

RECOMMENDATION

It is recommended that the Board note the following ABCB correspondence:

1. example letter from ABCB Chairman to industry stakeholders regarding ABCB's draft Impact Assessment Protocol (sent in late February);

2. a copy of the Memorandum of Understanding between the ABCB and Vietnam Department of Science and Technology (DST) Ministry of Construction (MOC) dated 26 February 2007;

3. email dated 2 March 2007 from [redacted] Chief Executive, Building Products Innovation Council (BPIC) regarding a meeting between the ABCB Chairman and BPIC Board Members;

4. letter dated 9 March 2007 from the ABCB Chairman to [redacted] regarding ionisation smoke alarms.

5. letter dated 26 March 2007 from The Hon. Malcolm Turnbull to the ABCB Chairman in relation to the nationally consistent regulation of hot water systems;

6. letter dated 30 March 2007 from the Hon. John Pandazopoulos, MP Chair of the Environment and Natural Resources Committee regarding an 'Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria. A response dated 1 May 2007 to the letter from ABCB's General Manager is also attached;

7. letter dated 23 April 2007 from [redacted], Chair, HIA National Technical Committee to [redacted] of the ABCB thanking him and the ABCB Chairman for their attendance at the National Technical Committee meeting.

8. letter dated 23 April 2007 from [redacted], Head of Division, Manufacturing, Engineering and Construction Division, regarding the Strategic Review of the BCA against COAG Principles;

9. letter dated 24 April from [redacted] Acting Director, Office of Best Practice Regulation regarding the Best Practice Regulation Report 2006-07; and

10. letter dated 4 May 2007 from the General Manager to [redacted] Chairman, Service Delivery and Performance Commission regarding their work program for 2007/2008.

11. letter dated 3 April 2007 from the Queensland Injury Surveillance Unit to the ABCB Chairman and a response from the Chairman to QISU dated April 2007.

Australian Building Codes Board

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GPO BOX 9839
CANBERRA ACT 2601
AUSTRALIA
PHONE: 1300 134 631
FACSIMILE: 02 6213 7287
EMAIL:
ABCB.OFFICE@ABCB.GOV.AU

ABN: 51 835 430 479

Housing Industry Association
Attention: [redacted]
79 Constitution Avenue
Campbell ACT 2612

Dear [redacted]

ABCB *DRAFT* IMPACT ASSESSMENT PROTOCOL

I understand that during recent discussions with you concerning the ABCB's *Strategic Review of the BCA against COAG Principles*, the issue of our impact assessment processes was raised and it was noted that I would write to you on this topic.

The Australian Government Office of Best Practice Regulation (OBPR) has consistently recognised the ABCB as one of the agencies that not only meets, but exceeds, its Regulation Impact Assessment (RIS) obligations. However, the ABCB seeks to continuously improve its impact assessment processes to address feedback from stakeholder groups and to ensure ongoing alignment with the Council of Australian Government (COAG)'s National Reform Agenda and the findings of the Regulation Taskforce. The ABCB Board also recognises the importance of dialogue with our industry partners on this important issue.

The ABCB 2006-07 Annual Business Plan contains a number of actions to enhance our impact assessment processes including:

- a Proposal for Change process that increases transparency and consistency as well as utilising effective consultation mechanisms when considering changes to the BCA;
- a two stage impact assessment process including *early-stage* analysis of all proposed changes to the BCA;
- practical assistance to proponents of BCA-referenced documents, including Standards Australia, in the development of an early-stage assessment tool suitable for Standards proposed for referencing in regulation.

Further impact assessment-related improvements are in train and include the use of the Australian Government's *Business Cost Calculator* in all ABCB RISs, a Consultation Protocol to ensure good practice stakeholder consultation, and an independent peer review of existing ABCB RISs. The latter project will endeavour to benchmark our RISs to date, seek to improve clarity of communication and ensure better consistency of ABCB RISs.

A draft ABCB Impact Assessment Protocol has also been developed in order to improve the transparency of ABCB's processes (refer attachment). The Protocol commences with a broad outline of good regulatory principles, then focuses on the ABCB's RIS and related processes. Importantly, it also includes several flowcharts detailing the impact assessment and consultation mechanisms involved with our BCA amendment process and the development of our RISs. The draft Protocol has recently been approved by the OBPR as being consistent with COAG Regulatory Principles.

The ABCB Impact Assessment Protocol embodies the concept of the ABCB fulfilling a regulatory "gatekeeper" role and its use has resulted in the rejection of a number of recently proposed changes to the BCA and its referenced documents, on the grounds of insufficient justification or impact analysis from the proponents of the change.

We would value your comments on the draft Protocol and would be happy to discuss any suggestions for further improvements to our processes. Your comments will help us to continuously monitor and enhance our impact assessment-related activities. We see this as an on-going process. Indeed, I am aware that COAG's Regulatory Principles are currently being revised and are expected to be issued later in 2007. Once available, the ABCB will again review its processes to ensure alignment with these Principles.

I look forward to hearing your comments.

Yours sincerely,

[redacted] AM
Chairman

21 May 2007

MEMORANDUM OF UNDERSTANDING
BETWEEN
AUSTRALIAN BUILDING CODES BOARD (ABCB)
AND
VIETNAM DEPARTMENT OF SCIENCE AND TECHNOLOGY (DST)
MINISTRY OF CONSTRUCTION (MOC)

This MOU is to give practical effect to the desire of both countries to encourage the sound development of their building and construction industries by:

- Facilitating opportunities for trade and investment flows for the benefit of both countries, for example by
  - collaborating on the development of technical regulations for buildings;
  - creating conditions for the exchange of technical personel between the two countries.

- Exploring opportunities for mutual cooperation on matters such as:
  - technical regulations affecting safety, health and amenity for people;
  - creating a better understanding of each country's building regulatory systems;

- Facilitating bilateral and regional linkages for ABCB and DST (including the Vietnam Institute for Building Science and Technology and the Vietnam Research Institute on Architecture) on information sharing, research and development collaboration; and

- Acting on any initiative mutually agreed in the future.

This MOU is made into two (2) orginals in English and two (2) copies in Vietnamese in which one (1) original and one (1) copy are for ABCB and one (1) orginal and one (1) copy are for DST.

Hanoi, 26 Feb 2007
For Australian Building Codes Board

General Manager

Hanoi, 26 Feb 2007
For Department of Science and Technology, MOC, Vietnam

Director

BẢN GHI NHỚ VỀ HỢP TÁC

GIỮA

CỤC QUY CHUẨN XÂY DỰNG AUSTRALIA (ABCB)

và

VỤ KHOA HỌC CÔNG NGHỆ (KHCN) BỘ XÂY DỰNG – VIỆT NAM

Bản ghi nhớ hợp tác này nhằm thúc đẩy việc thực hiện mong muốn của hai nước Việt Nam và Australia về khuyến khích sự phát triển vững chắc đối với ngành công nghiệp xây dựng của hai nước thông qua việc:

- Giúp đỡ để đưa ra các cơ hội về thương mại và đầu tư có lợi cho cả hai bên, ví dụ:
- Cùng hợp tác trong việc phát triển các Quy chuẩn xây dựng Việt Nam (về nhà cửa);
- Tạo điều kiện qua lại làm việc cho các nhà quản lý và các chuyên gia kỹ thuật hai nước.

- Tìm cơ hội về hợp tác trong các lĩnh vực sau:
- Các quy chuẩn kỹ thuật liên quan đến các lĩnh vực an toàn, sức khỏe và tiện nghi cho nhân dân;
- Tạo điều kiện hiểu biết lẫn nhau tốt hơn về hệ thống quy chuẩn xây dựng của mỗi nước.

- Thúc đẩy mối quan hệ song phương và khu vực giữa Cục Quy chuẩn Xây dựng Australia (ABCB) và Vụ KHCN – Bộ Xây dựng Việt Nam (bao gồm cả Viện Khoa học công nghệ Xây dựng và Viện Nghiên cứu Kiến trúc) trong các lĩnh vực như: Chia sẻ thông tin, hợp tác nghiên cứu và phát triển.

- Cùng hợp tác về các vấn đề mới được các bên thống nhất trong tương lai.

Bản ghi nhớ hợp tác này được làm bằng hai (2) bản gốc bằng tiếng Anh và hai (2) bản copy bằng tiếng Việt (Mỗi bên giữ một bản tiếng Anh và một bản tiếng Việt).

Hà Nội, 26 tháng 2 năm 2007
Đại diện Cục Quy chuẩn Xây dựng Australia

[redacted]

Tổng giám đốc điều hành

Hà Nội, 26 tháng 2 năm 2007
Đại diện Vụ KHCN, Bộ Xây dựng, Việt Nam

[redacted]

Vụ trưởng, Vụ KHCN

[redacted]

From: [redacted]
Sent: Friday, 2 March 2007 3:11 PM
To: [redacted]
Cc: [redacted]
Subject: BPIC Board Meeting

Dear [redacted]

Thank you for agreeing to have a chat to the Board members of the Building Products Innovation Council in Sydney on Monday 12 March 2007. The meeting will be held at the offices of Cement, Concrete and Aggregates Australia, Level 6, 504 Pacific Highway, St Leonards. As we touched on during our brief telephone discussion I would appreciate if you could attend between 12pm and 1.30pm, which will allow time for formal discussion as well as a chat over lunch.

I will brief my members on your interest in their views on CodeMark, and I am sure they will be interested in issues such as the Boards consideration of inclusion of sustainability outcomes in the Building Code. You should also be aware, if you are not already, that BPIC did seek to have a materials representative appointed to the Board of the ABCB but we were unsuccessful in that aim last year. Should the opportunity arise, we may well again seek to have a materials nominee appointed.

In terms of the membership of BPIC, I have attached a list and also invite you to visit our web site www.bpic.asn.au for a broad understanding of the role that BPIC plays in the building sector.

Thank you again and please contact me (mobile is best) if there is any further information you would like to assist you prior to the meeting.

Regards,

[redacted]
Chief Executive
Building Products Innovation Council
[redacted]

Contact List - Building Products Innovation Council

Organisation	Contact name		Organisation	Contact name	Organisation	Contact name
Australian Window Association (AWA)	[redacted]		Steel Reinforcement Institute of Australia (SRIA)	[redacted]	Gypsum Board Manufacturers of Australasia (GBMA)	[redacted] (effect 1 Nov)
Australian Steel Institute (ASI)	[redacted]		National Manufacturers Council of HIA (NMC)	[redacted]	Housing Industry Association Ltd (HIA)	[redacted]
Clay Brick & Paver Institute	[redacted]		Timber Development Association (TDA)	[redacted]	Plastics and Chemicals Industries Association (PACIA)	[redacted]
Concrete Masonry Association of Australia (CMAA)	[redacted]		Building Designers Association of Australia (BDAA) **	[redacted]	[redacted] Chair	2/32 Tipuana Place Bardon QLD 4065
Insulation Manufacturers Association of Australia (IMAA)	[redacted]		Cement Concrete & Aggregates Australia (CCAA)	[redacted]	[redacted] Chief Executive	Suite 18 National Associations Centre 71 Constitution Ave Campbell ACT 2612
Roofing Tile Association of Australia Inc	[redacted]		National Precast Concrete Association Australia (NPCAA) *	[redacted]	[redacted] Senior Research and Policy Officer	

* Associate ** Affiliate

Australian Building Codes Board

[redacted]
Suite 71/64 Gilston Road
Nerang
Queensland 4211

LEVEL 4/20 ALLARA STREET
CANBERRA ACT 2601
GPO BOX 9839
CANBERRA ACT 2601 AUSTRALIA
PHONE: (02) 6213 7240
FACSIMILE: (02) 6213 7287
EMAIL: IVAN.DONALDSON@ABCB.GOV.AU

Dear [redacted]

I refer to you and [redacted] correspondence to the Board of 19 February 2007 regarding ionisation smoke alarms.

The Australian Building Codes Board (ABCB) is a joint initiative of all levels of Australian Government and includes representatives from the building industry. The Board was established in an inter-government agreement (IGA) signed by the Australian Government and State and Territory Ministers responsible for building regulatory matters on 1 March 1994 and was most recently reaffirmed by Ministers in April 2006.

The IGA sets out the responsibilities of the Board and the principles upon which the Board is to operate. In essence, the ABCB is responsible for:

- developing and managing a nationally uniform approach to technical building requirements, embodied in the Building Code of Australia (BCA);
- developing a simpler and more efficient building regulatory system; and
- enabling the building industry to adopt new and innovative construction technology and practices.

In regard to the development of the BCA, the IGA requires the Board to comply with the Council of Australian Governments' "*Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*".

Under these Guidelines, proposals for new regulation that have the potential to restrict competition should include evidence that the competitive effects of the regulation have been considered; that the benefits outweigh likely costs; and that the action proposed is no more restrictive than necessary in the public interest.

When regulation is deemed necessary, proposals must be the subject of a sufficiently comprehensive assessment of the likely impact.

The BCA already provides life safety protection through early warning of fire in all residential buildings. The requirements for houses are that occupants must be provided with automatic warning on the detection of smoke so that they may evacuate in the event of a fire to a place of safety.

During 2006, the Board received a proposal from a Standards Australia committee to amend the content of AS3786 Smoke Alarms, which is a standard referenced as a deemed-to-satisfy means of complying with the BCA. The committee's proposed amendment would have resulted in the increased use of photo-electric detectors and the non-compliance of most ionisation detectors. It should be noted that AS3786 permits the use of both types of detector.

It is not clear to the Board from the evidence available that ionisation detectors do not achieve the level of performance required for warning occupants in the event of a fire.

Consequently, the Board advised the Standards Australia Committee that it did not support its proposal but has offered to meet the Committee and to consider the further evidence it has provided to us in February 2007.

Yours sincerely,

[redacted]AM
Chairman

9 March 2007

THE HON MALCOLM TURNBULL MP
Minister for the Environment and Water Resources

[redacted]

26 MAR 2007

Chairman
Australian Building Codes Board
GPO Box 9839
CANBERRA ACT 2601

Dear [redacted]

I am writing in relation to sustainability in the built environment. As you would be aware my Department, through the Australian Greenhouse Office, has enjoyed a close cooperative relationship with the Australian Building Codes Board since 2000 through its role in the Energy Efficiency project. The project to introduce energy efficiency requirements for all new buildings in Australia was essentially completed in May 2006. This work delivered a major element of the National Greenhouse Strategy, outlined by the Prime Minister in *Safeguarding the Future* in 1997.

As community and industry attitudes have changed to embrace a broader consideration of sustainability issues so has the role of the ABCB, and the new Intergovernmental Agreement signed in 2006 covers sustainability. I am pleased to endorse the new IGA and support the broadening of the role of the Australian Building Codes Board (ABCB) to include sustainability issues, reflecting the need for the building regulatory reform agenda to take full account of community aspirations for sustainable buildings to improve both the economic and environmental performance of this significant industry sector.

My Department, with the cooperation of the ABCB, has recently completed two projects that support the consideration by the ABCB of incorporation of specific sustainability elements into the Building Code of Australia (BCA) and related Australian standards. The projects focused on water efficiency, and sustainable building materials. I enclose copies of the reports for consideration by your Board and your staff. These projects represent the first steps of further cooperation to build upon the valuable reforms already implemented to incorporate minimum energy efficiency standards into the BCA.

I would like to draw your attention to a possible priority area for sustainability in relation to energy and greenhouse - nationally consistent regulation of hot water systems. I am aware that committees of the ABCB have considered this issue in the past. Representations to the Government from the hot water industry have made the point that industry and consumers could benefit from a nationally consistent approach to hot water. Already four jurisdictions have regulations in place which aim to eliminate, to the degree possible, electric storage hot water systems from new houses and promote gas and solar hot water systems. After heating and cooling energy, energy for hot water is the largest component of the energy budget of the residential sector. In mild and cooling dominated climates hot water is often the largest single energy use in homes.

Ph: 6277 7640 Parliament House, Canberra ACT 2600 Fax: 6273 6101

A nationally consistent approach for hot water would be in accord with the new focus on sustainability in the new Intergovernmental Agreement on the ABCB. A full technical and economic analysis through the processes of the ABCB would clearly identify the benefits and costs of solar hot water on a jurisdiction and climate zone basis across Australia.

Continuing cooperation between the ABCB and my Department on sustainability, including energy efficiency issues, provides an additional mechanism for the Government to continue its focus on greenhouse and water issues. Buildings are important contributors to a range of environmental outcomes. I look forward to further cooperation between my Department and the ABCB on building sustainability issues, and to the completion of a new MOU on sustainability.

Yours sincerely

[redacted]

MALCOLM TURNBULL

Enclosure

Australian Building Codes Board

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IVAN.DONALDSON@ABCB.GOV.AU

Executive Officer
Environment and Natural Resources Committee
Parliament House
Spring Street
East Melbourne VIC 3002

Dear Sir/Madam

On 30 March 2007, the Hon. John Pandazopoulos, Chair of the Environment and Natural Resources Committee, wrote to me seeking a submission on the Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria.

Whilst the terms of reference of the Inquiry are not directly relevant to the work of the Australian Building Codes Board, a brief explanation of the role of the Building Code of Australia in respect of bushfire-prone areas and discussion on the potential impact of land management practices on building construction is attached.

Thank you for the opportunity to make a submission on this matter.

Yours sincerely

[redacted]

[redacted]
Executive Director

7 May 2007

Environment and Natural Resources Committee

Level 8, 35 Spring Street,
Melbourne, Vic 3000
Tel: (03) 9651 3533
Fax: (03) 9651 3537
DX: 210175, Melbourne
enrc@parliament.vic.gov.au
www.parliament.vic.gov.au/enrc

KN Can we discuss pls.

[redacted]
General Manager
Australian Building Codes Board
Level 3, 33-51 Allara Street
GPO Box 9839
CANBERRA ACT 2601

30 March 2007

Dear [redacted]

Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria

The Parliament of Victoria's Environment and Natural Resources Committee has commenced an Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria. A copy of the terms of reference for this inquiry is attached.

To assist the Committee in gaining an appreciation of all the issues involved, we would be interested in receiving a submission from your organisation. The written submissions and evidence taken at hearings will form the basis of a report to the Victorian Parliament by 30 June 2008.

If you require any further information, please contact the Committee's Executive Officer on 9651 3533 or email enrc@parliament.vic.gov.au.

The Committee would welcome your submission by Friday 25 May 2007.

We look forward to receiving your advice on these matters.

Yours sincerely

[redacted]

Hon. John Pandazopoulos, MP
Chair

4 Byfield Street
North Ryde NSW 2113
PO Box 884
North Ryde BC NSW 1670
Tel: 02 9978 3333
Fax: 02 9888 7555
www.buildingonline.com.au

23 April 2007

[redacted]
Manager, Major Projects,
Australian Building Codes Board
GPO Box 9839
CANBERRA ACT 2601

Dear [redacted]

On behalf of the Housing Industry Association's National Technical Committee, I would like to thank you for taking the time to attend our recent meeting in Melbourne, along with [redacted]

The Committee members have all expressed to me that they greatly appreciated the opportunity to meet you and to hear directly about the future work of the Australian Building Codes Board over coming years.

HIA will be preparing a submission for the major review of the BCA and we are encouraged by the Board's move to undertake such a review. I am sure that the Board will continue to engage with industry to create a practical and effective building regulation framework for Australia, which assists the housing industry in meeting the needs of existing and future home owners.

HIA is keen to continue working closely with the ABCB and the information you were able to provide the Committee in relation to the Board's work program will assist in this regard.

If you would like to discuss any issues as they arise, please don't hesitate to contact either myself on [redacted] or [redacted] HIA's Executive Director, Building Policy, on [redacted]

Yours sincerely
HOUSING INDUSTRY ASSOCIATION

[redacted]
Chair
HIA National Technical Committee

[redacted]

Please note IR views.
For Board Forum papers.

RECEIVED
26 APR 2006
ABCB

Australian Government
Department of Industry Tourism and Resources

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Canberra ACT 2601

GPO Box 9839
Canberra ACT 2601 Australia

Phone: +61 2 6213 7500
Facsimile: +61 2 6213 6073

Email: stephen payne@industry gov au
Web: www industry gov au

ABN: 51 835 430 479

Mr [redacted]
General Manager
Australian Building Codes Board
GPO Box 9839
CANBERRA ACT 2601

Dear [redacted]

Strategic Review of the BCA against COAG Principles

Thank you for your letter dated 13 March 2007 inviting my input into the Strategic Review of the BCA against COAG Principles.

As you are aware the Commonwealth has no power to regulate buildings and is therefore unable to make any direct contribution regarding the relative technical merit of regulations within the Building Code of Australia (BCA).

However, I would like to take this opportunity to offer my full support for this review as I believe it is a strong demonstration of the Board's commitment to building regulation reform. In particular, a key outcome of the review should be the removal of any redundant provisions within the BCA.

Importantly, I consider this review as part of a wider commitment to COAG principles to review regulation at intervals of no more than 10 years. On this issue, I wish to draw your attention to the Treasurer's announcement dated 12 April 2007, where *"The Government also made a commitment that targeted reviews of all new regulation will be undertaken five years after new regulations take effect."* This is mirrored in the ABCB Intergovernmental Agreement (IGA), which requires Regulatory Impact Statements to consider the *"method of and timing for the review of the regulation."*

I am also heartened that ABCB gate-keeping processes, now in their second year of operation, are having the desired effect of applying a more rigorous discipline to the assessment of technical proposals.

As the Commonwealth's representative on the Board, I am pleased to note that some jurisdictions are beginning to encourage best practice regulation procedures upon their respective local governments, a requirement under the IGA.

It is also worth mentioning the outcomes of the recent COAG meeting held on 13 April 2007. Specifically, COAG agreed that best practice regulation and review processes should apply to the BCA and sought the removal of unnecessary State-based variations to the BCA.

These activities, when combined with other regulatory reform measures contained in the Building Ministers' Forum's report to COAG, will play an important role in shaping the future development of building regulation. The ongoing success of the ABCB will rely on disciplined management within the ABCB Office and continued acceptance by the Board of its gate-keeping role. This will become increasingly relevant as the Board is placed under added pressure to regulate on matters that have not been traditionally considered part of the BCA.

It is my belief that the ABCB must remain focussed on core issues. This particularly applies to priorities identified by COAG, and not those areas of marginal relevance which could see the Board achieving sub-optimal outcomes on core issues due to constrained resources. In this respect I look forward to the Board resolving its strategic role concerning sustainability and would hope that no decisions on sustainability be made by the Board until such time as this matter is resolved.

Again, thank you for seeking my views on this important regulatory reform matter.

Yours sincerely

[redacted]

Head of Division
Manufacturing, Engineering and Construction Division

23 April 2007

Australian Government
Office of Best Practice Regulation

Courier Delivery Only
Level 3, Nature Conservation House
Cnr Emu Bank and Benjamin Way
Belconnen ACT 2617
Mail
PO Box 80
Belconnen ACT 2616
AUSTRALIA

Telephone 02 6240 3290
Facsimile 02 6240 3355
www.obpr.gov.au

24 April 2007

[redacted]
Project Manager
Australian Building Codes Board
GPO Box 9839
Canberra ACT 2601

Dear [redacted]

COAG RIS compliance report – 1 April 2006 to 31 March 2007

Thank you for sending the Australian Building Codes Board's (ABCB) report on compliance with the Council of Australian Governments' (COAG's) Regulatory Impact Statement (RIS) requirements for the period 1 April 2006 to 31 March 2007.

I am writing to confirm that the ABCB has complied in full with COAG's RIS requirements for decisions made during that period. For the two RISs required to be prepared, both were assessed as adequate at both the consultation stage and the decision-making stage. A detailed assessment is attached.

This information will be published in the *Best Practice Regulation Report 2006-07*. It will also be reported to the National Competition Council and COAG Senior Officials.

Please let the OBPR know if the ABCB has any questions or concerns about this assessment. The OBPR's contact officer is [redacted]

Yours sincerely

[redacted]
Acting Director

Table C.1 **Cases where COAG RIS requirements were met at both the consultation and the decision-making stages**

	Measure	*Body responsible*	*Date of decision*
1.	Building Code of Australia 2006: Volume One (Class Two to Class 9 Buildings) – Energy Efficiency Measures	Australian Building Codes Board	1 May 2006
2.	Building Code of Australia 2006: Volume Two (Class 1 and Class 10 Buildings – Housing Provisions) – Enhanced Energy Efficiency Provisions	Australian Building Codes Board	1 May 2006

Source: OBPR estimates.

Commentary of fully compliant significant issues

Energy efficiency building standards

On 1 May 2006, the Australian Building Codes Board amended the Building Code of Australia (BCA) to include minimum energy efficiency standards for classes 5-9 non-residential buildings, and to increase the energy efficiency requirements for houses – class 1 and 10 buildings. The proposed regulations have been developed pursuant to a 2000 agreement between the Australian, State and Territory Governments. The agreed strategy involves both the encouragement of voluntary measures by industry and introduction of mandatory minimum requirements in the BCA.

These amendments will impact on owners, builders and tenants of new and renovated houses and non-residential buildings such as retail buildings, office buildings and car parks.

Australian Building Codes Board

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[redacted]
Service Delivery and Performance Commission
PO Box 15335
City East QLD 4002

BA-TAP-1498 Part 1

Dear [redacted]

SERVICE DELIVERY AND PERFORMANCE COMMISSION WORK PROGRAM 2007/08

Reference is made to your letter dated 11 April 2007 in which you invited the ABCB to suggest issues for inclusion of your organisation's 2007/08 work program.

The ABCB operates under a 2006 Intergovernmental Agreement (IGA) between the Commonwealth, States and Territories that commits the participating governments to strengthened national building regulatory reforms, which are supported by the Council of Australian Governments (copy attached).

A key reform area identified by the IGA is the need for greater national consistency in building regulations, including specific commitments to:

- Use the *Building Code of Australia* (BCA) to set the minimum necessary requirements for design, construction and performance of buildings throughout Australia;
- Restrict any new State and Territory variations by, as far as practicable:
  A. limiting variations to those arising from particular geographical, geological or climatic factors, as defined in the BCA;
  B. requiring that any variations be subject to a regulatory impact assessment;
  C. requiring that any variation be approved by the State or Territory Minister;
- Report areas of duplication and inconsistency in State and Territory legislation and identifying opportunities for greater consistency in building regulations between the States and Territories; and
- Take reasonable steps to consolidate all State or Territory mandatory requirements affecting the design, construction and performance of buildings into the consolidated version of the BCA.

The IGA aligns to some extent with all of your organisation's objectives. Objective (b) is particularly relevant as the IGA has the capacity to reduce inefficiencies, duplication and wastage in the delivery of government services in the area of building regulation.

A number of projects are included in the ABCB work program aimed at implementing the commitments in the IGA. However, the degree to which the commitments can be realised is dependent on the readiness of each participating government to implement them, not only at a portfolio level, but across the whole of government. The ABCB looks forward to working further with the Queensland Government to bring these regulatory reforms to fruition.

Thank you for the opportunity to provide comments on this matter. If you have any queries, please contact Mr Lance Glare on the above details.

Yours sincerely,

[redacted]

General Manager

4 May 2007

CC: [redacted] Deputy Director General (ABCB Board Member, Queensland Government)
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QUEENSLAND INJURY SURVEILLANCE UNIT

3rd April, 2007

[redacted]
Chairman
Australian Building Codes Board

Via [redacted]

Dear [redacted]

Re: Strategic Review of the BCA

The Queensland Injury Surveillance Unit (an independent research and advocacy unit funded by Queensland Health) has been informed that you are seeking stakeholder engagement and public consultation as a basis for a review process of BCA. Unfortunately, the terms of the proposed review appear to be limited to how best to **wind back the regulatory reach of the BCA** rather than improve or simplify regulations.

We attempted to complete your questionnaire but felt that the information requested ignored the primary mission of BCA *"to provide for efficiency and cost effectiveness in meeting **community expectations for health, safety and amenity** in the design, construction and use of buildings through the creation of nationally consistent building codes, standards, regulatory requirements and regulatory systems"*. The review appears to have been proposed in the interest of cost cutting and promotion of global trade rather than public safety and amenity. Indeed the terms of reference refer to maintaining only *minimum (regulations) required to achieve the pre-determined and desirable outcomes.*

The Queensland Injury Surveillance Unit has had significant involvement with BCA through the Standards Australia Committee CS-034 on Swimming Pool Fencing. The Standards Australia Committee, CS-034, is comprised of senior industry, government and health care representatives. The pool fencing standard came up for 10 year review in 2005 and CS-034 met several times in 2005 and 2006. During this time, the ABCB representative on CS-034 changed 6 times within 18 months.

Many committee members have expressed concern and frustration over the ABCB representatives' collective contribution to the CS-034 review process. During the review process, the committee reached a consensus position supporting changes to improve the pool fencing standard. These changes address not only issues relating to **improved child safety but practical application of the standard by industry.** QISU has always maintained the goal of making practical, workable and therefore sustainable solutions to child injury issues such as toddler pool drowning.

Despite a diverse group of committee members reaching a consensus, the ABCB has repeatedly stymied adoption of these recommendations. Not one of the appointed ABCB representatives on CS-034 appeared to demonstrate an appreciation of the committee's goal of improving safety for young children.

Based upon the performance by it's representatives and the direction of the current review, the ABCB appears disinclined to deliver the "health" and "safety" component of it's mission statement. The ABCB not only lacks a health and community-safety representation within it's organisation but is conspicuously dismissive of such representation when it is provided externally through organisations such as Standards Australia.

QISU supports streamlining and simplification of existing BCA regulations to facilitate use by industry. However, reliance on non-mandatory guidelines to ensure public safety is flawed and we will vocally oppose removal of any BCA regulations **that may compromise public safety.** We trust this provides a useful perspective from health professionals/ child advocates that your proposed review may not reflect. We would welcome dialogue to address our concerns.

Yours sincerely,

[redacted] Director, Paediatric Emergency Medicine, Mater Children's Hospital, Brisbane and Director, QISU

[redacted]

[redacted] Staff Specialist, Paediatric Emergency Medicine, Mater Children's Hospital, Brisbane and QISU

[redacted] Manager QISU, Manager Qld Safe Communities Support Centre, Deputy Vice-Chair, Australian Safe Community Foundation

Australian Building Codes Board

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PH [redacted]

[redacted]
Director
Queensland Injury Surveillance Unit
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SOUTH BRISBANE QLD 4101

Dear [redacted]

Thank you for your letter of 3 April 2007 in relation to the ABCB project reviewing the Building Code of Australia (BCA) against the COAG Principles. You raise concerns the terms of the review appear to be limited to cost cutting and promotion of global trade rather than public safety and amenity. You advise your agency supports streamlining and simplifying existing BCA measures but would oppose reliance on non-mandatory guidelines for public safety, or removal of BCA public safety provisions. You also draw attention to concerns over the ABCB representation on the swimming pool fencing Standards Committee.

Firstly, I wish to assure you the ABCB is not moving away from its objectives as specified in the Inter-Government Agreement establishing the Board. One of the primary objectives is to establish building codes and standards that are the minimum necessary to achieve relevant health, safety, amenity and sustainability objectives efficiently. Further objectives include ensuring the rationale for the regulation is rigorously tested, the benefits to society exceed the costs, there are no appropriate regulatory or non-regulatory alternatives, the competitive effects of the regulation have been considered, and the regulation is no more restrictive than necessary in the public interest.

Secondly, I welcome your response. The success of the review is dependant on input from the broad range of the Board's stakeholders, not just from one sector. This should provide the Board with a balanced perspective on which BCA measures may be redundant or require review. Any deletion or review would of course need to be assessed against the ABCB objectives of health, safety, amenity and sustainability as outlined above, in addition to the COAG Principles.

In regard to the swimming pool fencing Standards Committee, I wish to advise you the ABCB representative is [redacted] can be contacted by telephone on [redacted] or by email on [redacted] You would appreciate half the States and Territories have their own specific regulations on swimming pool safety, and do not adopt the BCA provisions. Also, a number of government agencies in each State and Territory have an interest in swimming pool safety. Therefore, in spite of best efforts, it can sometimes be difficult for the ABCB representative to obtain a consensus in relation to changes to the pool fencing standard.

Again I thank you for responding to the review and I hope this information addresses your concerns. If you would like further information, please contact [redacted] ABCB Project Manager on telephone [redacted]

Yours sincerely

[redacted]

Chairman

April 2007

Agenda Item 17: OTHER BUSINESS

Members are invited to raise any other matters for discussion.

Agenda Item 18: PLACE AND DATE OF NEXT MEETING

FOR INFORMATION

RECOMMENDATION

It is recommended that the Board note that ABCB 2007-3 is scheduled to be held on Thursday 27 September 2007 on the Gold Coast as part of the ABCB National Conference (23-26 September).

Australian Building Codes Board

BUILDINGS IN FLOODPRONE AREAS

CONSULTATION PAPER

May 2007

CONTENTS

1. Introduction

This Consultation Paper examines and analyses issues associated with buildings in flood prone areas and provides options to address the issues. Responses to the options are sought. The Building in Flood Prone Areas project is part of the Australian Building Codes Board's (ABCB) 2006/2007 work plan.

Under the Inter-Government Agreement (IGA) establishing the ABCB, all options and proposals must be tested against the Council of Australian Governments (COAG) (2004) Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies for any work associated with building regulation reform. These can be found at www.coag.gov.au

For any technical building regulation reform the ABCB must, through consultation, consider the range of policy alternatives including non-regulatory, self-regulatory, co-regulatory and regulatory options, within a net benefit framework and Government objectives. This Consultation Paper includes consideration of these options.

State and Territory Government authorities, Local Governments, building certifiers and industry organisations have provided constructive input to date on the issue.

2. Background

In December 2003, COAG gave in-principle approval to the Department of Transport and Regional Services (DOTARS) report Natural Disasters in Australia (2002) a report to COAG by a high level official's group. COAG noted that work on the reforms may result in the identification of alternative approaches to some of the recommendations. It also noted that the Local Government and Planning Minister's Council (LGPMC) and its standing committees will play a major role in the implementation of land use planning reforms which address natural hazards.

National Reform Commitments 1, 2 and 4 specified under recommendation 4 of the DOTARS report Natural Disaster in Australia (2002) are:

1. Develop and implement a five year national program of systematic and rigorous disaster risk assessments.

2. Establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation.

4 Take action to ensure more effective statutory State, Territory and Local Government land use planning, development and building control regimes that systematically identify natural hazards and include measures to reduce risk of damage from these natural hazards.

Recommendations of the DOTARS (2002) report include:

16 That the ABCB assign priority and resources to ensure that the BCA includes acceptable levels of building construction and performance for resistance to natural hazards (including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake) and introduce appropriate Australian Standards and/or guidelines to support such standards of building construction performance.

17 That the ABCB assign priority and resources to develop comprehensive guidelines, supported by education and training for buildings in areas susceptible to natural hazards, including high winds, storm, cyclone, flood, storm surge, landslip, bushfire and earthquake.

The ABCB has many projects addressing components of natural hazards including:

- Development of AS 3959 Construction of buildings in bushfire prone areas and AS 1530.8.1 & 2 Testing of materials for bushfire prone areas.
- Work on the AS 1170 and AS/NZS 1170 Design Actions covering earthquake and cyclones.
- A Landslide Hazards Handbook (2006) and an updated Durability Handbook (2006).
- A new testing regime for roofs in cyclonic areas is included in the BCA and the ABCB is working with James Cook University in reporting on recent cyclones. Regulatory design Standards are referenced in the BCA after application of good regulatory principles as are amendments to the BCA.

The Buildings in Flood Prone Areas project commenced as an ABCB project prior to the April 2006 IGA. In May 2006, the Australian Building Codes Board included Buildings in Flood Prone Areas on the 2006-07 work plan.

The total cost of flooding between 1967 and 1999 has been estimated at $10.4 billion. This equates to an estimated average direct annual cost of flooding of $315 million (Bureau of Transport Economics (2001)). The loss due to flooding each year has varied substantially with cost from the 1974 floods (in today's values) predominating. The loss due to flooding each year is dependent not only on the number of floods, but also on the flood severity. There is no detail on compliant BCA and nominated flood level constructed habitable buildings and existing buildings at previous standards and at lower flood levels.

A comparison with costs from other natural disasters confirms that flooding is the most costly natural disaster in Australia. However, the potential to gain significant benefits by effective management of this risk is higher than for any other hazard as floods are restricted to definable or designated areas. Mitigation measures may also be used very effectively to reduce flood risk.

3. Flood Hazard Identification

A flood can be defined as:

"A general and temporary condition of par tial or com plete inundation of normally dry land areas from overflow of inland or tidal waters from the unusual and rapid accumulation or runoff of surface waters from any source."

Floods in Australia are predominately caused by heavy rainfall; though extreme tides, storm surge, tsunami, snow melt or dam break can also cause flooding. Rainfall can cause riverine and/or flash flooding, and it can exacerbate local drainage problems and cause groundwater to rise above the natural surface. This document focuses on flooding as a result of heavy rainfall.

In general, the factors that influence whether or not a flood will occur include:

- volume, spatial distribution, intensity and duration of rainfall over the catchment area;
- catchment and weather conditions prior to the rainfall event;
- ground cover;
- topography;
- capacity of stormwater drainage systems;
- the capacity of the watercourse or stream network to convey the runoff;
- tidal influence; and
- works such as dams that can retard flows.

Flash floods

Flash floods can occur almost anywhere from a relatively short intense burst of rainfall such as during a thunderstorm. During these events, the capacity of the drainage system has insufficient time to cope with the downpour and flow frequently occurs outside defined water channels. Areas with low capacity drainage systems are particularly vulnerable to flash flooding. Although flash floods are generally localised, they pose a significant threat to the loss of human life because of their unpredictability, high flow velocities and the rapid onset of an event. Flash flooding is exacerbated in areas where there is a high proportion of impervious or near impervious surfaces which promote runoff, such as in highly developed urban areas (due to roads, roofs etc) and in areas where devegetation has occurred due to activities such as overgrazing.

Riverine floods

Riverine floods occur following heavy rainfall when watercourses do not have the capacity to convey the excess water. Riverine flooding occurs in relatively low-lying areas adjacent to streams and rivers. In the flat inland regions of Australia, floods may spread thousands of square kilometres and last several weeks. In the mountain and coastal regions of Australia flooding is often less extensive and of shorter duration, with higher flow velocities. In some cases natural blockages at river mouths may also cause localised flooding of

estuaries. A combination of rainfall runoff and king tides at the same time can drive water back upstream.

4. Roles and Responsibilities

Management of flood risk cuts across all levels of government, non government agencies and groups, and the community. State/Territory Governments play a particularly important role in managing flood risk. Flood risk management is essentially the way in which the likelihood and consequences of flooding are dealt with. The Standing Committee on Agriculture and Research Management (SCARM) (2000) report Floodplain Management in Australia, Best Practice Principles and Guidelines succinctly describes flood risk management as involving:

> *'the analysis of the risk exposure of a flood-prone community; that is, a flood risk analysis, followed by the identification and implementation of appropriate measures to manage existing, future and residual flood risks to acceptable levels* (p5)'.

Australian Government

The Australian Government's overarching goal in the management of flood risk is to ensure the economic and social health of Australia (SCARM, 2000). The Australian Government provides financial assistance for studies, flood warning systems and flood mitigation measures through its funding programs aimed at reducing the risk of natural disasters. Following a disaster, the Australian Government also provides financial assistance to those suffering from the impact of a disaster. The Australian Government provides the lead in reducing risk through improved flood warning systems, and by providing design rainfall estimation and analysis in partnership with stakeholders through a national network of consultative committees. It also plays a significant role in developing and managing rainfall data collection networks essential for flood estimation. Research is also conducted into flood related aspects of risk assessment and investments made in new technology, such as remote sensing.

State/Territory Governments

State and Territory Governments play an important role in floodplain management in Australia with responsibility encompassing a number of State Government agencies. The different types of agencies and their key roles are briefly described below, however, for further detail; refer to SCARM (2000). Some State/Territory variation exists in the roles played by the agencies, with some States/Territories delegating greater responsibility to local agencies. A number of State and Territory Government agencies have developed their own floodplain management strategies including guidance materials. These include NSW Department of Infrastructure, Planning and Natural Resources (2005), Victorian Department of Natural Resources and Environment (1998) and WA Water and Rivers Commission (2004). They also play a key role in managing stream gauge networks essential for flood estimation.

State and Territory Government's building legislation controls building and related activities. In most State and Territories, Local Governments or private

building surveyors assess new building work for compliance with the Building Code of Australia, approve the work, undertake inspections and issue occupancy permits as appropriate for domestic or commercial buildings or structures. Planning approval is provided by Local Government under provisions of development/planning legislation and Planning Schemes for urban/planning development.

The State and Territory Building Control administrations have provided the following advice in relation to flood provisions in their jurisdictions:

Australian Capital Territory	Development is excluded from the 100 year flood plain. Developments must comply with ACT Design Standards for Urban Infrastructure Part 1, Stormwater for major drainage systems and combined minor/major systems surcharge, natural drainage paths and new development.
New South Wales	Local Councils are primarily responsible for managing the flood risks in their local government areas and for controlling development on flood liable land. They are responsible for determination of appropriate planning and development controls and other strategies to manage future flood risk to an acceptable level. The Environmental Planning and Assessment Act 1979 Section 54 allows Councils to make Local Environmental Plans and where these Plans cover flood affected land, habitable floors are set at or above 100 year flood level. A Ministerial Direction under Section 117 of the Act directs councils to ensure the development of flood prone land is in accordance with the Floodplain Development Manual 2005. NSW Government Floodplain Development Manual provides state policies and guidance for management of the flood risk for development in flood prone areas. Manual is gazetted under Local Government Act 1993. Local Government Act Section 733 provides exemption from liability for Councils provided they have acted in good faith and substantially in accordance with the gazetted Flood plain Development Manual.
Northern Territory	The Building Act of 1993 includes Regulations 37 to 39 that regulate flooding. Reg 37 references schedule 4 which list maps showing flood prone areas in towns and cities such as Darwin, Katherine and Alice Springs. Reg 38 requires the flood level to be set at 100 year flood level for flood prone areas and the Director may set a different level through the Gazette. Reg 39 sets conditions to apply to buildings constructed in flood prone areas. The conditions are:

	• The floor of habitable rooms to be constructed 300mm above the 100 year flood. • The building's structural design to be adequate to withstand flooding, with consideration to, site, size and shape of building, buoyancy of the substructure and stresses that may occur from flooding by depth and velocity of flood water and impact of water borne debris on the structure.
Queensland	Section 13 of the Building Regulation 2006 regulates the floor height of habitable rooms in flood prone areas. Section 13 provides for Councils by planning instrument to designate part of its area as a natural hazard management area (flood) and declare the level to which the floor level of habitable rooms must be constructed. Councils are to keep a register of the flood areas it designates and keep it available for inspection by public. Background: Under the Regulation, Councils must, in designating a natural hazard management area (flood), comply with State Planning Policy 1/03-Mitigating the Adverse Impact of Flood, Bushfire and Landslide. The Policy sets out the State's interest by ensuring that Councils consider the impact of these hazards in the development of their planning schemes and when making decisions about development. Councils generally apply the 100 year flood and require the floor level of habitable rooms to be a further 300mm above the 100 year flood. Schemes generally prohibit filling land liable to flooding and structures generally open underneath with building supported on piers to facilitate flow through of flood water. BCA is considered to cover structural requirements to resist forces from flooding such as fast flowing flood water, debris loading and scour. Councils do their own mapping of flood plains except where the State Government has mapped these areas.
South Australia	The Development Act 1993 requires councils to prepare and publish Development Plans that outline the planning and development objectives for their particular areas. In some cases, where knowledge of local flooding is well known, councils have included principles that cover control and management of local flooding within their Development Plans. Some councils have also included mapping of flood prone areas in their plans. Provisions for building control are also included in Development Act, but to date no special provisions dealing with flood or flood prone areas have been included in the Act or Regulations.

	The Natural Resources Management Act, 2004 defines 'floodplain' as: *any area of land adjacent to a watercourse, lake or estuary that is periodically inundated with water and includes any other area designated as a floodplain in a State or Regional Natural Resource s Management Plan or in a Development Plan.* There are 68 council Development Plans across the State and generally councils use the 100 year flood level as the benchmark for flood protection provisions, which to date have required floors of habitable rooms to be built not less than 300mm above the 100 year flood level. The Better Development Plan project involves the preparation of standardised policy modules for adoption by councils in order to achieve increased consistency within council Development Plans. The modules include a flooding policy and overlay maps can be added that identify areas subject to flooding. These policies are now being progressively used by councils when amending their Development Plans.
Tasmania	Land Use Planning and Approvals Act 1993, Building Act 2000 (s159) and Building Regulations 2004 (r12) regulate land subject to flooding. Councils issue building and planning permits. The Building Regulations 2004 and some planning schemes include flooding requirements. The Building Act 2000 restricts a person from erecting a building containing habitable rooms to be 300mm above the prescribed designated flood level. For the purpose of the Act, the regulations have determined that a designated flood level is taken to be 600mm above ground level or the highest known flood level for the land subject to flooding or the level, which has a 1% probability of being exceeded in any year for a specific watercourse flood plain. There are at least 10 water course flood plains in Tasmania associated with rivers designated in the Building Regulations 2004. In the case of coastal areas the designated flood level is 600mm above the ordinary high water mark of a spring tide for land on which flooding is affected by the rise and fall of the tide.
Victoria	Land Use Planning Controls introduced through the Victorian Planning Provisions, as well as the Building Act and Building Regulations 2006 regulate flooding. Land Use Planning Controls: The Victorian Planning Provisions contain a suite of controls to deal with proposed development in areas liable to flooding. Planning permit applications are generally referred

	to the relevant floodplain management authority, who may require the permit be refused or be granted with or without conditions to manage the flood risk. Assessment is based on the relevant considerations applicable to each case. Building Regulations: Reg 802 Flood areas applies to all building except Class 10 buildings, unenclosed floor areas of buildings or alteration/additions which increase the original building by 20m² or less. This Regulation applies to: • land liable to flooding as determined under the Water Act 1989; or • land identified in a Planning Scheme under the Planning and Environment Act 1987; or • land described on a certified or sealed plan of subdivision; or • or a plan of strata; or • or cluster subdivision; or • land designated by a council as likely to be flooded from a waterway as defined under the Water Act 1989; or • land upon which water concentrates, usually or occasionally flows including land affected by flow from a drainage system. Reg 802 also requires that consent and report of a council must be obtained to a building application if the site is liable to flooding. Council must not consent if there is likely to be a danger to life, health or safety of occupants due to flooding. In the report, the council may specify the level of the lowest floor of the building (normally set at 100 year flood level with a freeboard of 300mm). Before specifying the floor level, council must consult with the Floodplain Management Authority for the site, and specify the level at least 300mm above any flood levels declared under the Water Act 1989, or otherwise determined by the Authority, unless the Authority consents to a lower floor level. The council must advise the Authority or any other authority that is empowered to provide sewerage to the site, of the floor level specified.
Western Australia	Town Planning and Development Act 1928, allows Local Government to create planning schemes and adopt policies that would restrict the use of land subject to flooding. Advice on these matters is available from the Department of Water, whose role as an advisory body is defined in the Waters and Rivers Commission Act 1995. Its advice is that development in the 100 year floodway should not occur, and it also advises that the minimum level (depending on particular circumstances) for development should be set at

	500mm above the flood fringe. Part XV of the Local Government (Miscellaneous Provisions) Act 1960 charges local governments with governing building matters within its municipality, which includes issuing building licences for proposed building work. The Building Regulations 1989 require that the builder intending to construct, or otherwise stated, obtain all necessary approvals to carry out that work. The regulations also state that a local government may refuse to issue a building licence unless satisfied that all necessary approvals have been obtained. The building legislation adopts the Building Code of Australia as the construction standard. The building legislation requires the proposed building work to comply with the Performance Requirements stated in the code.

Water resource agencies

These agencies house expertise to deal with the technical aspects of flooding behaviour. Their primary function is to provide guidance to local agencies in floodplain management, particularly in the development and implementation of floodplain management plans. Water resource agencies provide guidance regarding flood modelling and help local agencies on definitional issues. They also advise other State agencies, especially those involved in planning, transport, and emergency services. They also advise and assist Australian Government agencies in relation to flood forecasting and warnings and the assessment of grants.

Land use planning agencies

The planning agency in each State and Territory broadly administers the local planning system and the preparation of regional and special issue plans and policies. They act in an advisory capacity for development on the floodplain, may arbitrate planning appeals and raise awareness of flood risk at the local level. The State planning agency liaises with the State water resource agency on appropriate floodplain development and manages relevant documentation including flood maps.

Road and rail transport agencies

These agencies have a responsibility to protect road and railway infrastructure against floods and in ensuring that their infrastructure does not detrimentally increase flood levels and thereby flood hazard. They do this by liaising closely with the State water resource agency and local agencies. Floor levels may be built with additional freeboard as the importance level of the building and Transport Department policies apply in each State and Territory. The same principle may be applied to strategically important buildings such as those within defence establishments at the National level.

Emergency management agencies

These agencies have the statutory responsibility to coordinate flood emergency operations including warning the community. Associated with this is the responsibility to help local agencies in the preparation of flood emergency plans. The development of these plans is considered critical to protect life and property and requires input from various sources (including the relevant local agency, State water resource agency and emergency services agencies). Emergency management agencies receive assistance and advice from the water resource agencies on flood behaviour, and from Australian Government agencies essential meteorological and hydro meteorological information. These agencies also have a responsibility as combat agencies (e.g. evacuation and rescue) as well as coordinating recovery operations.

Local government and local agencies

The expected role of local agencies in flood risk management generally varies across the country as do legislation covering this aspect. It is invariably linked to storm water and flood management. Generally these agencies have the primary responsibility for managing the impacts of flooding in their local area. Activities include undertaking flood risk assessments and planning controls; developing and implementing plans to mitigate the flood risk; providing assistance to emergency services in times of flood; and making community aware of the risks posed by flooding and how to reduce that risk to themselves.

Outcomes are sometimes achieved through the setting up of a floodplain management advisory committee. In most urban areas, councils (or the Territory Government agency in the ACT and Northern Territory) are responsible for flood management including risk assessment. In rural areas, the responsibility is sometimes shared with other groups such as Catchment Management Trusts and River Trusts.

Local Governments generally maintain a register of flood prone and drainage deficiency land and set the nominated floor level of habitable buildings through planning controls. The nominated floor level is generally the flood level derived from the 1 in 100 year flood event plus a freeboard (normally between 300 to 600mm). To illustrate the often inconsistent approach a selected small number of local councils were contacted for advice on their current construction provisions for buildings and these are shown in Table 1 below. The councils were chosen on the basis of location within river systems that have the potential for flooding. Additionally the NSW Department of Natural Resources undertook an audit of flood design and freeboard provisions used by NSW councils and this is also included in the table

Table 1

Local Council	**Freeboard and flood levels**	**Requirements**
NSW		

Central Darling (Wilcannia)	500mm above the 1 in 100 year flood for habitable buildings	Local Environment Plan no requirements for non habitable buildings or parts of buildings. Local knowledge for overland flow paths impacting on buildings.
Gundagai Shire Council	300mm above the 1 in 100 year flood for all habitable buildings. Keep records of all floods but do not have current detailed maps. Uses the 1974 flood map prepared by Land and Water as the 1 in 100 flood.	In the process of developing a Development Control Plan.
Shoalhaven City Council	To the requirements of "Floodplain Management in Australia-Best Practice Principles and Guidelines (CSIRO Publishing)	Contained in Draft Development Control Plan
Department of Natural Resources NSW - audit	Councils generally use the 100 year ARI with varying freeboard to determine floor levels. 500mm is used in most cases	Some Councils do not have controls and some use varying controls depending on the flooding mechanism or type of development
Victoria		
City of Melbourne	300-600mm above the 1 in 100 year flood	Merits based assessment triggered by flood controls in municipal planning schemes
Catchment Management Authorities	Generally 300mm above the 1 in 100 year flood	Merits based assessment triggered by flood controls in municipal planning schemes
Queensland		
Maroochy Shire Council	400mm above the 1 in 100 year flood	No requirements (land fill in certain areas)
Mackay	Generally must build on land higher than 5.4	Additional requirements in Planning Scheme

	AHD	
Gold Coast City	300mm above the 1 in 100 year flood for most buildings. 400mm above the 1 in 200 year flood for fire and police stations and 500mm above the 1 in 500 year flood for hospitals.	Additional requirements in Planning Scheme.
SA		
City of Whyalla	Rely on recent flood maps. No current requirement.	"Flood map" being considered for Development Plan. Proposing to introduce minimum floor levels in flood prone areas
WA		
Broome	400mm above finished ground level	No requirements
Bunbury City	A freeboard of 300mm is inclusive in the 100 year ARI for Habitable floor levels. Does not apply to non-habitable buildings or parts of buildings.	Flood areas designated through comprehensive flood studies. Fill levels set in drainage deficiency and flood designated areas and tidal influences and storm surge details available for designers.
Tasmania		
Glamorgan/Spring Bay	Habitable room floor level is a minimum of 300mm above the prescribed 100 year ARI. Non habitable building floor level not set. Particular area Designated flood levels minimum 600mm.	Section 159 of Building Act 2000 and Regulation 12 Building Regulation 2004. Flood areas designated under Planning Scheme and State Coastal Policy. No formal records of tidal influences or surges. No special requirements for special use buildings. Discourage fill in flood or drainage areas.
Launceston City Council	Habitable floor level is 300mm above the prescribed 100 year	Regulation 12 Building Regulation 2004. Council by resolution designates a

	ARI. Non habitable building floor level not set. Particular area designated flood levels minimum 600mm Regulation 12 Building Regulation 2004	flood prone area. Overland flow paths impacting on building works assessed by Council's Infrastructure Services Directorate.
Glenorchy City	Dwelling unit floor level is 300mm above nominated above the 100 year ARI. Particular area designated flood levels minimum 600mm.	Regulation 12 Building Regulation 2004. Development controls to not unduly restrict the free flow of watercourse and restrict inundation of a dwelling unit to above the lowest floor level. A Design Certificate for resistance to instability or movement may be required.

Planning Schemes provide the direction of use and development of land to serve the economic welfare of a community in respect of convenience, health, amenity and sustainability. The planning component of flood prone areas has a special spatial and geographical character. Planning objectives include controlling and guiding the location of uses (function) and setting of standards for development (form). Planning Schemes therefore rely on geological, topographical and flood data to enable use and development planning controls to achieve the set planning objectives. Planning controls and standards may restrict particular uses and limit development in flood prone areas thereby establishing the external framework and development standard within which building approval processes and building standards operate.

Industry, Coordinating Groups/Professional bodies and Research Institutions

There are a number of professional bodies, coordinating groups and industry bodies that play an advocacy type role in flood risk management. There is a mix of informal and formal groups. Some function at a more national scale such as the National Flood Risk Advisory Group (NFRAG, 2006), Engineers Australia and the Insurance Council of Australia. Other groups are State or locally based such as the State Flood Warning Consultative Committees (FWCC, 1987), State flood policy committees, State emergency management committees, catchment management authorities and floodplain management authorities.

NFRAG's role is to support the development of policies, practices and guidelines to ensure that flood risk in Australia is managed in and effective and nationally consistent manner, to reduce loss of life and minimise the social and economic costs of flood related hazards. This includes providing advice, as required to the Australian Emergency Management Committee (AEMC), the Technical Risk Assessment Committee (TRAAC), any other relevant AEMC working groups, within the national context and consistent and supportive of the Council of Australian Governments (COAG) Review of

Natural Disasters Mitigation and Relief Arrangements, recommendations and reform commitments.

NFRAG is currently developing a National Guideline on Flood Risk Management. TRAAC is currently developing a Natural Hazards in Australia Document as part of the National Reform Commitments 1 and 2 specified under recommendation 4 of the DOTARS report Natural Disaster in Australia (2002). These commitments are:

1 Develop and implement a five year national program of systematic and rigorous disaster risk assessments.

2 Establish a nationally consistent system of data collection, research and analysis to ensure a sound knowledge base on natural disasters and disaster mitigation.

Numerous consulting companies are involved in flood hazard and risk assessment on behalf of government and non-government agencies. Research into different aspects of flood hazard and risk assessment is also conducted by various universities, corporative research centres, consultancies, Geoscience Australia and the CSIRO.

Likelihood analysis of flood or frequency analysis requires modelling of the flood hazard. Modelling flood hazard is technically a two-step process. The first step involves estimating the flood potential using hydro-meteorological information applicable to that area. This is commonly known as the hydrology component. This assessment is typically done using hypothetical design floods. Australian Rainfall & Runoff published by Engineers Australia Pilgrim (2001), provides guidance on methods for estimating design floods.

The second step called the hydraulic component involves evaluating the hydraulic behaviour of flood flow through the area of interest using data of the river channel and floodplain.

The design elements for building impact are subjective when flow rates, water depth and degree of impact material are variable on individual building sites. All are impacted by land profile, development, land use upstream and adjacent to the building site, and multiple hazards events such as outcomes of intense rain and king tide, however engineers apply professional judgement as considered reasonable.

Property developers

Developers are required to prepare applications which address the provisions or conditions relating to development in the floodplain. Generally the developer is required to undertake sufficiently detailed flood, economic, environmental and flood management studies to demonstrate that their proposal has no adverse flood or environmental effects and meets relevant performance standards.

Courts and legal institutions

The courts and legal institutions such as Administrative Appeals Tribunals play a significant role in settling disputes regarding development applications in the floodplain between developers, councils and other opposing parties.

Media

The media play a vital role in delivering the Bureau of Meteorology forecasts. In the event of an emergency, radio broadcasts are particularly effective in warning the community.

General community

Individuals have a basic responsibility to be aware of any flood risk posed to them, their family and the community and what to do about it. There is no doubt that the general awareness on flooding issues and specific knowledge on how best to respond to flood warnings and other information such as the location of evacuation routes is vital for the community safety. The awareness should include an understanding that extreme floods may still occur, including in areas where development is being approved by the local agency, and that measures such as structural flood mitigation works cannot fully alleviate flood risk. Irrespective of the level of flood risk, vulnerability of a community is greatly reduced when individuals are able to obtain relevant information and they are committed to meeting their roles and responsibilities.

BCA Provisions

BCA Volume One includes structural and stormwater drainage provisions and references many documents that include provisions relating to the effects of water.

Performance Requirement BP1.1 requires buildings to remain stable and not progressively collapse by resisting the actions to which it may be reasonably subjected. The list of actions does not include all possible actions and a degree of engineering judgement may need to be used to determine likely actions and in assessing the likely effects of those actions.

The Deemed to Satisfy (DtS) Part B1 Structures references many structural documents that include provisions for site conditions. Referenced documents include:

- AS and AS/NZS 1170 Series Structural Design Actions

- AS 3700 Masonry Structures Section 5 includes durability requirements where elements are in freshwater or in saline or contaminated water including tidal and splash zones. Clauses 2.3.1 Durability requirements, 2.4.1 Design for durability, 12.7.1 Mortar joints and 12.8.1.1 Cavity flashings provide design imperatives.

- AS 3600 Concrete Structures. Section 4 Design for Durability has provisions for exposure classification of elements in contact with both fresh and salt water

- AS 4100 Steel Structures. Appendix C and Clauses 1.6.1 and 3.5.6 provide information on corrosion and refers to AS/NZS 2312 for long life protection. Clause 3.1.1 Aim states that a structure is durable if it withstands the expected wear and deterioration throughout its intended life without the need for undue maintenance.

- AS/NZS 4600 Cold Formed Steel Structures. Clause 1.6.5 Durability, designed to perform its function for its expected life subject to use of the structure, maintenance, climatic and local conditions. Appendix C has informative detail on protection.

- NASH Standard Residential and Low Rise Steel Framing. Clause 1.3.3 States that design criteria assumes that material used, their installation and maintenance ensures that components will fulfil their intended function for the intended life of the Structure. 1.5.1 references AS 4100 and AS/NZS 4600 for material properties.

- AS 2327.1 Composite Steel and Concrete. Clause 1.6.1 Design data durability exposure class for concrete. Design of structure for durability. Clause 3.3.3 Design for durability refers to AS 3600 and AS 4100. 7.3.2 Slab continuity in the direction of the span and Clause 8.4.4 Minimum concrete cover for durability.

- AS/NZS 1664.1 and 2 Aluminium Structures. Durability and exposure conditions not specifically included.

- AS 1720.1 Design of Timber Structures Clauses 1.5.4.5 Durability and 1.7.3 Corrosion of connectors or fasteners.

- AS 1684 1, 2, 3 or 4 Timber Structures. AS 1684.2 Clause 1.8 Durability relative to climate and expected service life. Appendix C has informative detail on durability, refers to AS 5604 for timber natural durability ratings and AS/NZS 1604 series.

- AS 2159 Piling. Section 6 Design for Durability includes exposure classifications and provisions for concrete piles including different exposure classifications for piles in both fresh and salt water.

A number of these referenced documents have normative provisions that impact on durability and performance of structural elements for buildings and structures in extreme conditions.

Performance Requirement FP1.1 requires that surface water from a 1 in 20 year storm collected or concentrated by a building or site work must be disposed of without damage to other property.

FP1.2 requires that building and site works must be arranged so that surface water from a 1 in 100 year storm does not enter the building.

FP1.3 requires that a drainage system for surface water disposal must have an appropriate outfall and avoid damage to the building. The decision as to what is an acceptable outfall is made by the appropriate authority.

Surface water is defined in A1.1 as: *all naturally oc curring water, other than sub-surface water, which result s from rainfall on or around the site or water flowing onto the site, including that flowi ng from a drain, stream , river, lake or sea.*

The DtS provisions of Part F1 require compliance with AS/NZS 3500.3.2 Stormwater Drainage for compliance with the Performance Requirements for damp and weatherproofing.

BCA Volume Two includes structural, earthworks, preparation and drainage provisions relating to the effects of water and references many documents that include provisions relating to the effects of water. The same principles apply as in Volume One and the referenced structural documents are similar. Volume Two, however references AS 2870 for residential slabs and footings-construction. Clause 6.4.8 of AS 2870 has additional requirements for salt damp areas and references AS 3600 at Clause at 1.2 for Application. Table 2.1 provides details for P and filled sites and 2.4.6 on effect of fill on site classification.

Many Class 5 to 8 and Class 10 buildings and non habitable parts of Class 2 and 3 buildings have been designed and built in flood prone or drainage deficiency areas with consideration for impact of reasonable flood levels and actions. For example many basement areas used for car parking, non habitable areas and ancillary uses or voids have pump out pits and construction elements designed for the intended environment and reasonable design actions. The application of design principles set out in the appropriate Standards are at the initiative or judgement of the designer of the particular building or structure. Buildings built above the nominated flood levels with freeboard are not required to be built for extreme conditions unless the exposure classification of the Standard applies to the appropriate building element.

The BCA is developed using a minimum acceptable regulatory approach.

5. Issues

The safety of buildings in flood prone areas is contingent on reliable flood data and Local Governments establishing the 100 year ARI and the freeboard above the 100 year ARI event for habitable buildings. Other planning matters such as required fill levels, higher return periods for important buildings, overland flow paths and subdivision imperatives of local government may impact on how a building or structure is constructed and maintained during its life.

Flooding is an issue that is addressed at the planning and construction approval stage, i.e. before construction of a building. However, post-construction, there are many characteristics of land uses that can change in the immediate environment of a building, so a flooding problem that may not have existed at the time of approval may be created years after construction. In such cases, the owner has no control over these changes but may be held

responsible for the failure of a building maintenance regime developed many years before.

Freeboard requirements vary across Local Governments and can incur additional building costs due to variability in setting or policy. For example introduced fill suitable for flood prone areas and any necessary compaction in layers limited to 150mm layer depths is in the order of $50 per m^3 (subject to site and supply locality) and with variances of up 300mm for required freeboards can impact on cost of construction including additional depth of bored piers, concrete and steel reinforcing and detailing of plan submissions and specifications. Rawlinson (2007) indicates an indicative cost for bored piers and 20 MPa concrete at $60 per metre for 300mm piers. Taking an example site of 600m^2 this cost for additional 300mm of fill could be in the order of $10500 plus additional design preparation and approval process.

Local Government requirements such as setting of nominated flood levels, freeboards, fill levels and overland flow path requirements is inconsistent in application and process. The development processing costs indicated by industry for planning permits, reports, consents and exceeding maximum building height submission as a consequence of building in flood prone areas can be in excess of $2000 without including costs for delays in construction whilst obtaining approvals.

The 2 exceptions to setting of nominated flood levels, freeboards and fill levels by Local Government are those included in the Building Acts and regulations of Tasmania and Northern Territory. Consistency at a higher level than Local Government is achieved in these jurisdictions.

Identifying changes in return period flood levels, freeboards, flow depths, flow speed, evidence of scour, identification of specific land geometry details, debris composition, overland flow path changes, occurrences of flood and king tides at the same time, has generally been done at the local level with advice from water resources and other agencies and most importantly local knowledge. Historically this system has functioned without any major detriment, however, improvement and developing more consistent processes would be beneficial at the forward planning stage of building development.

Work under the COAG initiatives, the Australian Emergency Management Committee and National Flood Risk Advisory Group is progressing on development of a National Flood Risk Management Guideline that is to cover from mitigation through to clean up and review of flood events. The ABCB can have input into the appropriate areas of the Guideline document. The same principle can be adopted for ABCB input in the Natural Hazards in Australia Document being produced by TRAAC.

Designers apply the BCA provisions and referenced Standards with appropriate judgement for assessment and approval under Building Legislation in the States and Territory. The BCA referenced documents do not specifically include or exclude extreme conditions such as flood. Most however, address durability for the intended life of the element such as

concrete, steel, composite concrete and steel, timber and masonry in contact with water.

There are no clear indications that designers and builders are not using appropriate discretion when designing for buildings in severe condition areas and that the market is not providing suitable materials for extreme conditions. Improving Local Government procedures and processes in regards flood prone areas could provide national consistency. Regulation as an option is considered however other mechanisms at this stage address the COAG principles. This supports the minimum required standard approach and does not limit additional practices or initiatives.

Matters such as design initiatives for buildings in a flood prone area such as egress in the event of flood, additional freeboard, use of materials, orientation of building or structure, type of construction, landscaping to minimise impact of debris, location of electrical equipment and services are matters that may be included in non regulatory advice for designers and owners to consider.

6. Options and Impacts

The options to address issues raised include:

1. The process and procedures for developing and identifying the nominated flood levels, freeboard and fill levels to be referred to POG and ALGA.

2. Development of the National Flood Risk Management Guideline.

3. Combination of option 1 and 2.

4. Provide advisory Appendices in pertinent BCA referenced documents specifically for flood prone areas.

5. Non-regulatory document for Building in Flood Prone Areas

6. Leave as status quo.

Option 1

The intent of this option is to enable POG and ALGA to consider the need for national consistency in Local Government processes and procedures for building development in flood prone areas, designation of flood prone and drainage deficiency areas, setting of suitable nominated flood levels, fill levels and freeboards and providing recommendations to other pertinent Planning bodies. Local Governments are best placed to identify local characteristics of flood and determine flood prone areas with advice from water resources for suitable flood levels and although nominated freeboards vary generally from 300mm to 500mm, they are consistent with local knowledge and conditions of flood pertaining to the local area.

Maps at the local level of government are developed with input from water resources and generally reflect current knowledge. Maps at the macro level of State or National level provide a general guide of flood prone areas.

POG is a high level official's group responsible for planning matters of national significance. POG provides information on planning and development matters to the Australian Emergency Management Committee (AEMC) and consequently COAG. ALGA has a representative on the ABCB Board.

This option would enable a nationally consistent approach at the Local Government level and would provide a more consistent process for designers, builders, developers and urban planners. The cost of producing consistent processes can be balanced with the advantage of having a national approach to determining and setting nominated flood levels and freeboards and other related matters.

The negative impacts:

- Would need Local Governments to be committed and participative with outcomes of POG and ALGA and any recommendations.
- Current inconsistencies between Local Governments.
- Cost to ensure processes and procedures are consistent at Local Government level.

The positive impacts:

- No new regulation, however consistency can be achieved nationally.
- One generic process and procedure document for use by all Local Governments.
- Builders, planners, engineers, developers have a national consistent process for building in flood prone areas.
- Forward planning process improved for habitable and non-habitable buildings that may be built in flood prone areas.

Option 2

The objective of the second option is for the ABCB to have input to the development of a National Flood Risk Management Guideline. NFRAG is developing a National Guideline for use at all levels of Government and for the public. The Guideline is to be a holistic approach to managing flood risk from mitigation through to review of processes after events.

The negative impacts:

- Issue of Guidelines being seen as quasi regulation.
- Subject to forward planning and urban development using accurate data.

The positive impacts:

- Guidance information on flood risk management in one document.
- Guideline or Handbook is not regulation, however provides designers, developers, builders, planners and the public with national consistent advice in addition to any regulation.
- Broad distribution and use by all Governments, agencies and the public in the event of a flood emergency.
- Reduction of risks from floods.
- Input in the Guideline/Handbook is through a National Committee working under the COAG endeavours and commitments.

Option 3 (Combination of Option 1 & 2)

The intent of this option is to combine options 1 and 2. This option enables POG and ALGA to consider a national approach for flood prone areas and the development of a National Flood Risk Management Guideline. This option enables a nationally consistent approach at the Local Government level and would provide a more consistent process for designers, builders, developers and urban planners. The Guideline/Handbook would also assist designers, builders, developers and urban planners in developing for the hazards of flood.

The negative impacts:

- Would need Local Governments to be committed and participative with outcomes and recommendations of POG and ALGA.
- Current inconsistencies between Local Governments.
- Cost to ensure processes and procedures are consistent at Local Government level.
- Issue of Guidelines being seen as quasi regulation.
- Distribution and use by all Governments, agencies and the public in the event of a flood emergency.
- Subject to good forward planning and urban development using accurate data.

The positive impacts:

- No new regulation, however consistency can be achieved at the National level.
- Builders, planners, engineers, developers have a national consistent process for building in flood prone areas.

- Forward planning process improved for habitable and non-habitable buildings that may be built in flood prone areas.

- Guidance information on flood risk management in one document.

- Guideline or Handbook is not regulation, however provides designers, developers, builders, planners and the public with national consistent advice in addition to any regulation.

- Reduction of risks from floods.

- Input in the Guideline/Handbook is through a National Committee working under the COAG endeavours and commitments.

Option 4

Provide advisory Appendices in the BCA referenced documents specifically for flood prone areas. BCA Volumes One and Two reference AS 1170 and AS/NZS 1170 Loading Standards and many structural documents for concrete, steel, composite concrete and steel and timber. These documents do not specifically provide advice on flood, however a number do address extreme conditions. Informative appendices could be developed to provide guidance on design for buildings in flood prone areas.

The negative impacts:

- Would require appropriate Standards committees to develop informative appendices.

- May take some time

- Philosophy of not specifically providing advice on flood in Standards is not clearly understood.

The positive impacts:

- No new regulation is introduced if informative only.

- Would require standards review process.

- Appendices are generally read by users of the BCA referenced documents.

Option 5

This option is for a Handbook on Building in Flood Prone Areas and may include design initiatives, egress in the event of flood, additional freeboard, use of materials, orientation of building or structure, type of construction, landscaping to minimise impact of debris, location of electrical equipment and services are some matters that may require non regulatory advice for designers and owners to consider. Industry has concern about ABCB guidance being used as quasi-regulation, by regulators and the legal system and not for its intention to provide informative guidance only.

The negative impacts

- Possible use of Handbook as quasi-regulation.
- Cost recovery document for users
- Laps over other possible handbook/guidance documents
- Distribution limited
- May not satisfy IGA principles due to perception as regulation irrespective if termed guideline or handbook or other.

The positive impacts

- Provides reasonable guidance for designers, regulators, BCA users and others
- Could provide design initiatives to owners and builders/developers in existing flood prone areas
- Satisfies COAG recommendations and commitments.

Option 6

This option is to leave the current system as it is. This may not be a valid option given the inconsistent processes and requirements of Local Government and current lack of guidance for designers, builders, urban planners and developers.

The negative impacts

- No improvements
- Inconsistent with recommendations of DOTARS report.

The positive impacts

- Nil identified.

6 Review

The options provided cover the issues raised, however Option 3 combines the benefits of national consistency and guidance in the area of building in flood prone areas. The option to stay at status quo does not appear to address the commitments of COAG nor improve design clarity, however is included for assessment under IGA principles. The option to include informative appendices in particular documents is not regulation and is included to enable readers of a BCA referenced document to include appendices for additional information that has enhancement to the main body of the referenced document. An option to regulate at this stage is not valid given the extent of non-regulatory alternatives, existence of Planning Scheme development controls of flood prone areas, flood level designations, mandatory freeboards and fill levels, regulatory referenced documents and principles of the IGA.

7. Response Sheet

Proposal for Building in Flood Prone Areas

To:	**ABCB Project Manager** [redacted]
	Telephone: [redacted] **Facsimile:** [redacted]

Name: …….. Date: …….

Organisation: ……

To assist the further development of the proposal presented in this Consultation Document, respondents are requested to reply to, at least, the following questions. Please attach supplementary comments as necessary.

	Questions	YES	NO
1	Do you generally agree with Option 1 to improve the process and procedures for developing and identifying the nominated flood levels, freeboard and fill levels in a nationally consistent way at the Local Government level through consideration and recommendations of POG and the ALGA within the COAG process?		
2	Do you generally agree with Option 2 for the Development of the National Flood Risk Management Guideline?		
3	Do you generally agree with Option 3 to combine options 1 and 2, for POG and ALGA to consider and provide recommendations to improve processes and procedures for designated flood prone areas at the Local Government level in a nationally consistent way and for the development of a National Flood Risk Management Guideline?		
4	Do you generally agree with Option Four to provide advisory Appendices in the BCA referenced documents specifically for flood prone areas?		
5	Do you generally agree with Option Five for a non-regulatory document for Building in Flood Prone Areas?		
6	Do you generally agree with Option Six to remain with the status quo (do nothing)?		

7	Are there other viable options then those described in this Consultation Document? Please provide details and impact justification.		

8. References

Bureau of Transport Economics (2001) *Economic costs of natural disasters in Australia.* BTE Report 103, Commonwealth of Australia, Canberra.

DOTARS (2002) *Natural disasters in Australia. Reforming mitigation, relief and recovery arrangements.* A report to the Council of Australian Governments by a high level official's group, August 2002, Department of Transport and Regional Services, Canberra.

COAG (2004) *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies*, Council of Australian Governments, Canberra, Australia

Department of Infrastructure, Planning and Natural Resources (2005) *Floodplain Development Manual. The Management of Flood Liable Land.* Department of Infrastructure, Planning and Natural Resources, NSW Government, Sydney.

FWCC (1987) Terms of Reference, Flood Warning Consultative Committee.

Institution of Engineers (1987) *Australian Rainfall and Runoff: A guide to flood estimation,* Volumes 1 and 2, Institution of Engineers, Australia.

Natural Resources and Environment (1998) *Victoria Flood Management Strategy,* Department of Justice, Victoria.

NFRAG (2006) Terms of Reference, National Flood Risk Advisory Group, Canberra, Australia.

Pilgrim, D (2001) *Australian Rainfall and Runoff (Volume One)* Engineers Australia, Canberra.

SCARM (2000) *Floodplain management in Australia – Best practice principles and guidelines,* Agriculture and Resource Management Council of Australia and New Zealand, Standing Committee on Agriculture and Resource Management, Report No 73, CSIRO Publishing.

Water and Rivers Commission (2004) *Draft Western Australian Floodplain Management Strategy,* Water and Rivers Commission,

Rawlinsons (2007) *Australian Construction Handbook* RawlHouse Publishing, Perth, Western Australia

An Agreement

between

the Governments of

the Commonwealth of Australia, the States and the Territories

to continue in existence and provide for the operation of the

AUSTRALIAN BUILDING CODES BOARD

April 2006

CONTENTS

An Agreement made this 26th day of April, 2006 to continue in existence and provide for the operation of the Australian Building Codes Board.

SIGNATORIES FOR EACH OF THE PARTIES

The Hon Ian Macfarlane, MP	Minister for Industry, Tourism and Resources Commonwealth of Australia
The Hon Bryan Green, MHA	Minister for Infrastructure, Energy and Resources State of Tasmania
The Hon Rob Hulls, MP	Minister for Planning State of Victoria
Mr Simon Corbell, MLA	Minister for Planning Australian Capital Territory
The Hon Frank Sartor, MP	Minister for Planning State of New South Wales
The Hon Desley Boyle, MP	Minister for Environment, Local Government, Planning and Women State of Queensland
Dr Chris Burns, MLA	Minister for Planning and Lands Northern Territory
The Hon Francis Logan, MLA	Minister for Housing and Works; Heritage; Assisting in Planning and Infrastructure State of Western Australia
The Hon Paul Holloway, MLC	Minister for Urban Development & Planning South Australia

AN AGREEMENT made this 26th day of April, 2006 between —

THE COMMONWEALTH OF AUSTRALIA (in this Agreement called 'the Commonwealth'),

THE STATES OF NEW SOUTH WALES, VICTORIA, QUEENSLAND, SOUTH AUSTRALIA, WESTERN AUSTRALIA AND TASMANIA (in this agreement called individually a 'State' and collectively 'the States'); and

THE NORTHERN TERRITORY AND THE AUSTRALIAN CAPITAL TERRITORY (in this agreement called individually a 'Territory' and collectively 'the Territories').

Recitals

A. The Commonwealth, the States and the Territories wish to facilitate the development of a more efficient, internationally competitive building and construction industry through reforms to building regulation nationally.

B. The State and Territory governments are responsible for regulating building.

C. To strengthen reforms to building regulation nationally, the respective governments of the Commonwealth, the States and the Territories commit to:

i. continuing in existence the Australian Building Codes Board ('the Board') established by the agreement of the respective governments on 1 March 1994, as amended on 27 July 2001;

ii. the Building Code of Australia (BCA) setting the minimum requirements for the design, construction and performance of buildings throughout Australia;

iii. the adoption of the BCA by reference on a national basis through relevant State and Territory legislation;

iv. restricting any New Variations from the BCA by State and Territory governments by, as far as practicable:

   A. limiting variations to those arising from particular geographical, geological or climatic factors, as defined in the BCA;

   B. requiring that any variations be subject to a Regulatory Impact Assessment; and

   C. requiring that any variation be approved by the State or Territory Minister;

v. on the part of the States and Territories, identifying New Variations from the BCA (including New Variations that are not within the categories listed in recital C (iv)) and the non-adoption of BCA amendments in their respective jurisdictions and reporting this information to the Board on an annual basis.

vi. the reporting by the Board on an annual basis of those variations from the BCA reported by the States and Territories (refer recital C(v)) to Ministers. In particular, this report will:

A. highlight any New Variations from the BCA and the non-adoption of BCA amendments by the States and Territories;

B. identify areas of duplication and inconsistency in State and Territory legislation; and

C. identify opportunities for greater consistency in building regulations between the States and Territories;

vii. the consistent application of the BCA across and within each State and Territory;

viii. harmonising the approach to the administration of the BCA across Australia; and

ix. on the part of the States and Territories, seeking similar commitments from their local governments where they have any administrative responsibility for regulating the building industry.

D. The Board's mission will be to address issues relating to health, safety, amenity and sustainability by providing for efficiency in the design, construction and performance of buildings through the BCA and the development of effective regulatory systems.

E. The objectives of the Board will be to (collectively 'the Objectives'):

i. develop building codes and standards that accord with strategic priorities established by Ministers from time to time, having regard to societal needs and expectations;

ii. establish building codes and standards that are the minimum necessary to achieve relevant health, safety, amenity and sustainability objectives efficiently;

iii. ensure that, in determining the area of regulation and the level of the requirements:

A. there is a rigorously tested rationale for the regulation;

B. the regulation would generate benefits to society greater than the costs (that is, net benefits);

C. there is no regulatory or non-regulatory alternative (whether under the responsibility of the Board or not) that would generate higher net benefits; and

D. the competitive effects of the regulation have been considered and the regulation is no more restrictive than necessary in the public interest.

iv. ensure that BCA requirements are consistent across the States and the Territories, except for circumstances provided for in recital C(iv);

v. ensure that BCA requirements are:

A. performance-based;

B. verifiable;

C. based on appropriate international standards; and

D. expressed in plain English;

vi. harmonise the approach to administering the BCA across Australia and identify and encourage the implementation of improvements to compliance and administrative systems for building regulation, including through improvements to the licensing, accreditation and audit of building practitioners;

vii. encourage reduced reliance on regulation by providing a forum to explore alternative mechanisms for delivering outcomes, including:

A. non-mandatory guidelines;

B. training to increase skill levels of building practitioners; and

C. improvements to the licensing, accreditation and audit of building practitioners.

F. The Board will develop an Annual Business Plan for presentation to Ministers.

G. The Ministers have agreed to meet periodically to:

i. review outcomes and progress against the objectives and the Annual Business Plan(s); and

ii. review the annual reports, referred to in recital C(vi).

H. The Commonwealth, the States and the Territories will contribute towards the costs of the Board's operations in accordance with the provisions of this Agreement.

Operative provisions

Now it is hereby agreed as follows –

1. Preliminary

1.1. This Agreement shall commence on the Commencement Date.

1.2. On the Commencement Date this Agreement replaces all Prior Agreements.

1.3. The proceedings, decisions or actions taken by the Board under the Prior Agreements are adopted and confirmed as proceedings, decisions or actions of the Board continued in existence by this Agreement.

1.4. Nothing in this Agreement affects the continued operation of an Intellectual Property Deed or an Indemnity Deed.

2. Interpretation

Definitions and Acronyms

2.1. In this Agreement, unless the context indicates otherwise:

ABCB Account	means the Australian Building Codes Board Account, a special account created by a determination of the Finance Minister under section 20 of the FMA Act;
ABCB Office	means the part of the Department that is responsible for assisting the Board in undertaking its functions and exercising its powers under this Agreement;
Administration	means the Department, or the relevant department, statutory body or agency that has administrative responsibility for the subject matter of this agreement in a State or Territory government;
Agreement	includes a reference to the clauses and recitals;
ALGA	means the Australian Local Government Association
Annual Business Plan	means the plan required by clause 4.2.c;
Annual Report	means the report required by clause 4.2.d;
APS	means the Australian Public Service;
BCA	means the Building Code of Australia;
Board	means the Australian Building Codes Board continued in existence by this Agreement;
Chair	means the Chair of the Board;
COAG	means the Council of Australian Governments;
COAG Principles	means the *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies* (April 1995, as amended in November 1997 and June 2004);
Commencement Date	means the date on which this Agreement has been executed by all of the Parties;

Committee	means the Building Codes Committee established by clause 11;
Conflict-of-Interest declaration	means a declaration in a form determined by the Commonwealth Minister;
Conflict-of-Interest guidelines	means any guidelines adopted by the Board that deal with the management of conflicts of interest with regard to members of the Board;
Department	means the Commonwealth department or agency responsible for administering this Agreement;
FMA Act	means the *Financial Management and Accountability Act 1997* (Cth);
FMA Regulations	means the Financial Management and Accountability Regulations 1997 (Cth);
General Manager	means the person occupying the position of General Manager established by clause 16 or a person acting in that role;
Indemnity Deed	means the indemnity deeds entered into by the parties on 7 November 2000, as amended or replaced from time to time;
Industry Representatives	means the four representatives of the building and construction industry who are members of the Board;
Intellectual Property Deed	means the intellectual property deeds entered into by the parties on 11 October 1996, as amended or replaced from time to time;
Minister	means: a. for the Commonwealth: a Minister of State or other member of the Federal Executive Council; b. for a State or Territory: a Minister of the relevant State or Territory; or c. for the Commonwealth, a State or a Territory: a person nominated by a Minister as his or her representative from time to time;
Mission	means the mission stated at recital D;
New Variation	means an amendment to the BCA or any requirement additional to the BCA; except those arising from the process of consolidation in the BCA;

Objectives	means the objectives stated at recital E;
Office of Regulation Review	means the Office of Regulation Review in the Productivity Commission;
Parties	means the Commonwealth of Australia, the States of New South Wales, Victoria, Queensland, South Australia, Western Australia and Tasmania, and the Australian Capital Territory and the Northern Territory;
Prior Agreements	means the Agreement of the Parties on 1 March 1994, as amended on 27 July 2001 by the Parties;
Productivity Commission	means the Productivity Commission established by section 5 of the *Productivity Commission Act 1998* (Cth);
Regulatory Impact Assessment	means a Regulatory Impact Assessment process as defined by the COAG Principles;
Regulatory Impact Statement	means a Regulatory Impact Statement as defined by the COAG Principles;
Secretary	means the Secretary of the Department;
State	means the government of a State; and
Territory	means the government of a Territory.

Interpretation

2.2. In this Agreement, unless the contrary intention appears:

a. words importing a gender include any other gender;

b. words in the singular include the plural and words in the plural include the singular;

c. clause headings are for convenient reference only and have no effect in limiting or extending the language of provisions to which they refer;

d. words importing a person includes a partnership and a body whether corporate or otherwise;

e. a reference to any legislation or legislative provision includes any statutory modification, substitution or re-enactment of that legislation or legislative provision;

f. if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

g. a reference to writing is a reference to any representation of words, figures or symbols, whether or not in a visible form.

3. Establishment of the Board

3.1. The Board established by the Prior Agreements is continued in existence by this clause 3.

3.2. The Board shall consist of between ten and fifteen members including:

a. a Chair;

b. the head of each Commonwealth, State and Territory Administration or their delegate;

c. a representative of the Australian Local Government Association (ALGA) or their delegate; and

d. four representatives of the building and construction industry ('Industry Representatives').

3.3. The Chair and the Industry Representatives shall be appointed in accordance with clauses 6 and 7. All other appointments to the Board are ex-officio.

4. Functions and powers of the Board

4.1. The proceedings and operations of the Board established by this Agreement shall be directed to the achievement of the Mission and Objectives.

Functions

4.2. To achieve the Mission and Objectives the Board will:

a. develop, advise and make recommendations to the Ministers on policy and other matters consistent with the Objectives;

b. make decisions on matters relevant to the BCA :

A. in accordance with the COAG principles and any other Ministerial direction; and

B. that are consistent with the Objectives;

c. prepare and furnish in respect of each financial year to the respective Ministers, an Annual Business Plan (including a forward work program for the following two financial years) which shall give details of progress, projects, priorities, expenditure and overall performance in the achievement of Objectives;

d. prepare and furnish an Annual Report to Ministers regarding the variations from the BCA reported by the States and Territories under clause 5.4. In particular, this report must:

A. highlight any New Variations from the BCA (including New Variations that are not within the categories listed in recital C (iv)) and the non-adoption of BCA amendments, by the States and Territories;

B. identify areas of duplication and inconsistency in State and Territory legislation; and

C. identify opportunities for greater consistency in building regulations between the States and Territories;

e. provide overall direction, approve work programs, approve and monitor annual budgets, and determine priorities;

f. reach agreement on an annual timetable for the development and delivery of amendments to the BCA;

g. provide for a work program of consultation with governments, industry, consumer groups and other organisations; and

h. provide strategic guidance to the General Manager in the fulfilment of his or her duties.

Powers

4.3. The Board:

a. may, subject to clause 4.4, deal with such matters or arrange for the performance of such tasks related to the Objectives as the Board may, from time to time, deem necessary; and

b. may, subject to clause 4.5, make amendments to the BCA.

Limits on the exercise of powers

4.4. The Board may not act in a manner that is inconsistent with the FMA Act and delegated legislation, in particular the Board cannot:

a. approve spending proposals under Regulation 9 of the FMA Regulations;

b. approve the consideration of spending proposals where there is insufficient available appropriation under Regulation 10 of the FMA Regulations; or

c. enter into contracts or other arrangements under which public money is or may become payable in the name of the Commonwealth or in the name of the Board.

4.5. The Board will comply with the COAG Principles in addressing regulatory reform. In particular, the ABCB Office under the direction of the Board will:

a. conduct Regulatory Impact Assessments, which will:

A. assess whether government intervention is necessary or desirable; and

B. quantify the impact of government action;

b. prepare Regulatory Impact Statements, which will consider the following matters (where relevant):

A. a statement of the problem being addressed;

B. the objective of the proposed regulatory change;

C. a statement of the proposed regulation and any alternatives;

D. the costs and benefits of the proposal;

E. the consultation process that has been or will be undertaken;

F. an evaluation of the relative impacts of the proposal and any alternatives (especially on business and the community at large); and/or

G. the method of and timing for review of the regulation.

c. and consult with the Office of Regulation Review in the Productivity Commission.

5. Assistance to be provided to the Board by State and Territory Administrations

5.1. Each of the State and Territory Administrations will take reasonable steps to consolidate all of their mandatory requirements affecting the design, construction and performance of buildings into the consolidated version of the BCA.

5.2. Each of the Administrations shall have the general responsibility for providing support appropriate to facilitate, within that State or Territory, the work of the Board, including:

a. liaison and co-operation with the General Manager; and

b. timely advice on:

A. the implications of proposals of the Board which affect or are affected by legislation of the State or Territory; and

B. other matters as requested by the Board.

5.3. Each of the Administrations will meet a mutually agreed timetable for development and delivery of amendments to the BCA.

5.4. Each Administration will identify New Variations from the BCA (including New Variations that are not within the categories listed in recital C (iv)) and the non-adoption of BCA amendments, in their respective jurisdictions and report this information to the Board on an annual basis.

6. Appointment of the Chair

6.1. The Chair must be:

a. independent from sectional interests; and

b. have a demonstrated capacity to advance the work of the Board.

6.2. If the position of Chair is vacant or is likely to become vacant, the Commonwealth Minister is responsible for nominating a person as his or her preferred candidate for the position of Chair.

6.3. The Commonwealth Minister must advise the State and Territory Ministers of their nomination.

6.4. In the event a State or Territory Minister disagrees with the Commonwealth Minister's preferred candidate, the State or the Territory Minister may nominate an additional person and will advise the Commonwealth Minister and the other State and Territory Ministers of the nomination.

6.5. A preferred candidate will be required to make a Conflict-of-Interest declaration to the Commonwealth Minister prior to being appointed.

6.6. Where a majority of Ministers agree on a candidate to be appointed as the Chair, the Commonwealth Minister will appoint that person as Chair for a period of up to five years.

6.7. In the event a majority of Ministers are unable to agree on a candidate to be appointed as Chair, the process described in clauses 6.1 to 6.6 shall be repeated until a candidate is agreed.

6.8. A person ceases to be the Chair and a member of the Board if he or she:

a. resigns the office by instrument in writing to the Commonwealth Minister; or

b. is otherwise removed from office by the Commonwealth Minister, after consultation with the State and the Territory Ministers.

7. Appointment of industry representatives

7.1. If the position of one or more of the industry representatives is vacant or is likely to become vacant, the Commonwealth Minister will request a list of persons from the Australian Construction Industry Forum (ACIF) for selection as a member or members of the Board ('list of recommended persons').

7.2. The Commonwealth Minister shall provide the State and the Territory Ministers with the list of recommended persons.

7.3. The Commonwealth Minister shall nominate one or more persons depending upon the number of vacancies on the Board:

a. either from the list of recommended persons provided by ACIF; or

b. any other person as his or her preferred candidate(s); and

shall advise the State and the Territory Ministers of their nomination of a preferred candidate ('preferred candidate').

7.4. In the event a State or Territory Minister disagrees with the nomination of one or more of the Commonwealth's preferred candidates that State or Territory Minister:

a. may nominate an alternative candidate (including a person on the list of recommended persons who has not been nominated by the Commonwealth); and

b. must advise the Commonwealth Minister and the other States and Territories of their nomination of an alternative candidate.

7.5. Each candidate will be required to make a Conflict-of-Interest declaration to the Commonwealth Minister prior to being appointed.

7.6. Where a majority of Ministers agree on a candidate, that person will be appointed to the Board by the Commonwealth Minister for a period of up to five years.

7.7. In the event a majority of Ministers are unable to agree, the process described at clauses 7.3 to 7.6 shall be repeated until a candidate is agreed.

7.8. A person ceases to be a member of the Board if:

a. he or she ceases to retain the qualification by which membership was attained;

b. if the member resigns the office by instrument in writing; or

c. is otherwise removed from office by the Commonwealth Minister, after consultation with the State and Territory Ministers.

8. Meetings of the Board

Timing and number of meetings

8.1. The Board shall meet at least once in each financial year.

8.2. The times and dates of meeting shall be determined by the Board.

Conduct of meetings

8.3. Each member of the Board or their delegate (refer clause 8.10) is entitled to exercise one deliberative vote on any matter for decision.

8.4. Decisions of the Board will be by simple voting majority of those members entitled to vote.

8.5. In the event of an equality of votes the Chair will exercise a casting vote.

8.6. The Chair of the Board, with the agreement of the majority of Administration Board members, may invite observers to Board meetings from time to time.

8.7. The deliberations and decisions of the Board will be recorded in writing.

8.8. The quorum for a meeting is ten Board Members, with the parties to this Agreement being in the majority.

8.9. Members of the Board, including the Chair, must not participate in any discussions or vote in any matters in which they may have or may be perceived to have a conflict-of-interest (refer clause 9).

Delegates

8.10. Subject to clause 8.11, each member of the Board who is the head of a Commonwealth, State or Territory Administration, or ALGA (refer clauses 3.2.b and 3.2.c) may appoint a delegate.

8.11. Any delegate appointed must be delegated the power to make decisions on behalf of their Administration or, in the case of ALGA, their Association.

Decisions without meetings

8.12. Decisions of the Board may be made by communication between its members without calling a formal meeting, provided that:

a. there is agreement of a majority of those entitled to attend and vote at any meeting of the Board;

b. all members have been consulted on each matter for decision; and

c. all members have been informed of the decision.

9. Conduct of the Board

Code of Conduct

9.1. The members of the Board will, to the extent they are applicable, conduct themselves in accordance with the APS Code of Conduct and APS Values (see sections 10 and 13 of the *Public Service Act 1999* (Cth) respectively).

Conflict-of-Interest

9.2. The Chair and Industry Representatives are responsible for keeping their respective Conflict-of-Interest declarations to the Commonwealth Minister up-to-date.

9.3. The Chair and Industry Representatives must make a further Conflict-of-Interest declaration should an actual or perceived conflict-of-interest of an ongoing nature arise during the term of their appointment.

9.4. Subject to clause 8.9, the Board will adopt Conflict-of-Interest guidelines to deal with conflicts as they arise in exercising the Board's functions and powers.

10. Representation on other Bodies

10.1. The Board may be represented on another body or bodies in accordance with resolutions of the Board.

11. Building Codes Committee

11.1. There shall be a Building Codes Committee ('the Committee') to provide technical advice to the Board. The composition of the Committee shall be determined by the Board.

11.2. The operation of the Committee shall be determined by the Board.

11.3. The Committee cannot make decisions that vary the BCA. Such matters, if considered by the Committee, must be referred to the Board which will make the ultimate decision.

12. Review

12.1. A review of the operations of the Board and the administration of this Agreement shall be conducted by the end of 2010 in accordance with both the Objectives of the Agreement and performance indicators developed as part of the Board's Annual Business Plans.

13. Intellectual Property

13.1. This Agreement does not affect the ownership of Intellectual Property in any materials created by, under, or for the purposes of the Board.

13.2. Intellectual Property shall continue to be dealt with in accordance with an Intellectual Property Deed between the Parties.

14. Indemnity Issues

14.1. This Agreement does not provide an indemnity in favour of any member of the Board or the manner in which costs will be apportioned under an indemnity.

14.2. Any indemnities or apportionment of costs of the kind referred to in clause 14.1 will be dealt with in separate deeds between the relevant parties.

15. Funding

Funding formula

15.1. The Ministers will determine an amount of funding required to support the operation of the Board for each financial year after reviewing the Annual Business Plan.

15.2. The amount determined by the Ministers under clause 15.1 will be used to calculate the amount of annual contributions from the Commonwealth, State and Territory governments under clauses 15.5 and 15.6.

15.3. The Board's funding shall be provided by:

a. annual appropriation by the Commonwealth to the Australian Building Codes Board Account (ABCB Account); and

b. crediting of payments made by the States and Territories to the Commonwealth for the purposes of the ABCB Account to the ABCB Account.

15.4. The Commonwealth may receive payments from other sources for the purposes of the Board or arising from the activities of the Board, and these amounts are to be credited to the ABCB Account.

15.5. The amount of annual contributions, as agreed in this clause 15 by the parties, shall be determined using the following formula:

a. the Commonwealth contribution shall be one half of the amount; and

b. the States and the Territories shall contribute one half of the amount.

15.6. The contributions for each State and Territory will comprise:

a. an equal minimum amount; and

b. an amount that is proportionate to the respective share of total building approvals for the financial year two years preceding the determination (as determined by the Australian Bureau of Statistics).

15.7. Annual contributions of funds are payable by the Parties once an appropriation is available, or as soon as practicable after the commencement of each financial year, whichever is the later.

ABCB Account

15.8. The annual contributions of each Party determined under this clause 15 and any other payments paid to the Commonwealth for the purposes of the Board will be credited to the ABCB Account.

15.9. Amounts standing to the credit of the ABCB Account may only be drawn down and spent for the following purposes:

a. for the purpose of the expenditure for research, investigation and development (including the engagement of consultants) and the dissemination of information directed towards the achievement and maintenance of uniform building regulations;

b. development of a national system of accreditation; and

c. development of comparable legislative control procedures in the building approval process among the States and Territories.

15.10. Amounts that may be paid to the Commonwealth and credited to the ABCB Account are any amounts:

a. that are held in trust for, or otherwise for the benefit of, a person other than the Commonwealth;

b. appropriated by law for the purpose of crediting the ABCB Account;

c. received in consideration for any service, benefit, activity, transaction or other matter which is congruent with the expenditure purpose of the ABCB Account; and

d. paid to the Commonwealth by any person for the expenditure purposes for the relevant account.

16. General Manager

Appointment

16.1. A General Manager shall be appointed by the Commonwealth by the Secretary.

16.2. The Secretary will consult with the Chair of the Board on the appointment of the General Manager.

16.3. The General Manager will be an APS employee.

Functions and powers

16.4. The General Manager will manage the day to day activities of the ABCB Office, including coordinating the activities of the Board, and carrying out and managing the implementation of Board directives and decisions in accordance with this Agreement.

16.5. The Board may delegate some functions and powers to the General Manager.

16.6. The General Manager shall, with the strategic guidance of the Board and in a manner consistent with the FMA Act, co-ordinate, manage and facilitate the

implementation of the Board's decisions regarding the Objectives. In particular, the General Manager will have responsibility for:

a. Financial management;

b. Technical support services;

c. Administrative and operational support;

d. Management of research projects;

e. Consultation and liaison;

f. Information dissemination;

g. Advice on policy development;

h. Management and co-ordination of committee activities; and

i. Other matters as determined by the Board.

16.7. The General Manager shall, on request and at least once a year, report to the Board on the achievement of the Objectives of the Agreement.

17. Administration

Delegations and authorisations

17.1. In the absence of a delegation from the Secretary, the General Manager does not have the power to approve spending proposals under Regulation 9 of the FMA Regulations.

17.2. The Secretary may issue the General Manager a limited delegation to approve spending proposals and a drawing right to draw down the funds appropriated to the ABCB Account.

17.3. The General Manager may, provided that the General Manager has been issued an appropriate delegation by the Secretary:

a. approve spending proposals to the limit of that delegation; and

b. draw down the funds appropriated to the ABCB Account under a drawing right issued by the Secretary to the General Manager;

consistent with the requirements of the FMA Act and FMA Regulations.

17.4. The General Manager shall discharge duties and functions in the administration of the ABCB Office and the Board's Annual Business Plan in an efficient, effective and ethical manner.

Engagement of Consultants

17.5. Consultants may be engaged by the Secretary (or the delegate of the Secretary) on behalf of the Board to carry out tasks associated with the functions of the Board.

17.6. The terms and conditions on which consultants are engaged under clause 17.5 must:

a. be an efficient and effective use of public money for the purposes of the FMA Act;

b. be in accordance with the Department's Chief Executive Instructions;

c. be in accordance with the Commonwealth Procurement Guidelines; and

d. if the engagement is not by the Secretary, any delegation by the Secretary of their powers under the FMA Act.

Travel and Meeting Costs

17.7. Subject to clause 17.8, travel and other costs incurred by members or members' delegates, members of the Committee, or consultants in pursuit of the business of the Board may only be paid if approved by the General Manager.

17.8. Costs for travel will only be approved in accordance with the Department's normal travel arrangements and policies.

17.9. Subject to any restrictions in any delegation from the Secretary or the Department's Chief Executive Instructions, the General Manager may, where he or she is requested by the Board to appoint a particular person to conduct research or act as a consultant to the Board, agree to pay the travel and other costs associated with the services of that person as part of the terms of their engagement.

18. Transitional arrangements

18.1. The members of the Board appointed under the Prior Agreements will continue as members of the Board under this Agreement as if they were appointed under this Agreement.

COUNCIL OF AUSTRALIAN GOVERNMENTS

BEST PRACTICE REGULATION

A GUIDE FOR MINISTERIAL COUNCILS AND NATIONAL STANDARD SETTING BODIES

OCTOBER 2007

Contents

INTRODUCTION

Over 40 Commonwealth-State Ministerial Councils and other inter-governmental decision making fora facilitate consultation and cooperation between the Commonwealth Government and state and territory and local governments in specific policy areas. The councils initiate, develop and monitor policy reform jointly in these areas, and take joint action in the resolution of issues that arise between governments. In particular, Ministerial Councils develop policy reforms for consideration by the Council of Australian Governments (COAG), and oversee the implementation of policy reforms agreed by COAG. Ministerial Council agreements are commonly translated into law and regulation, and it is important that all councils follow consistent principles in developing all proposals which have a regulatory impact.

This document provides guidance to Ministerial Councils and other standard setting bodies (hereafter referred to collectively as "Ministerial Councils") on best-practice regulation making and review by outlining:

- principles for best-practice regulation making agreed by COAG; and
- guidance for undertaking regulatory impact assessment and preparing a Regulation Impact Statement (RIS) including assistance on undertaking:-
  - risk analysis,
  - cost-benefit analysis,
  - assessments of compliance costs,
  - assessments of competition effects, and
  - consultation.

Importantly, the Guide reflects the commitment to establish and maintain effective arrangements to maximise the efficiency of new and amended regulation and avoid unnecessary compliance costs and restrictions on competition made by COAG at its 10 February 2006 meeting. COAG also agreed to apply these enhanced arrangements to Ministerial Councils. The Guide ensures that regulatory processes at the national level are consistent with principles of best practice regulatory process agreed by COAG.

Governments will establish and maintain effective arrangements at each level of government that maximise the efficiency of new and amended regulation and avoid unnecessary compliance costs and restrictions on competition by:

(a) establishing and maintaining "gate keeping mechanisms" as part of the decision-making process to ensure that the regulatory impact of proposed regulatory instruments are made fully transparent to decision makers in advance of decisions being made and to the public as soon as possible;

(b) improving the quality of regulation impact analysis through the use, where appropriate, of cost-benefit analysis;

(c) better measurement of compliance costs flowing from new and amended regulation, such as through the use of the Commonwealth Office of Small Business' costing model;

(d) broadening the scope of regulation impact analysis, where appropriate, to recognise the effect of regulation on individuals and the cumulative burden on business and, as part of the consideration of alternatives to new regulation, have regard to whether the existing regulatory regimes of other jurisdictions might offer a viable alternative; and

(e) applying these arrangements to Ministerial Councils.

COAG acknowledges that a large quantity of guidance material has also been developed on best practice regulation at the jurisdictional level that can assist Ministerial Councils to undertake regulatory impact assessment and make sound regulatory decisions. In the case of Ministerial Councils, however, this Guide should act as the primary source of direction.

This Guide replaces the previous COAG document entitled *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*.

APPLICATION

Regulation refers to the broad range of legally enforceable instruments which impose mandatory requirements upon business and the community, as well as to those government voluntary codes and advisory instruments for which there is a reasonable expectation of widespread compliance.

The principles of good regulatory practice and regulatory assessment requirements outlined in this Guide apply to decisions of COAG, Ministerial Councils and intergovernmental standard-setting bodies, however they are constituted. This includes bodies established by statute, or administratively by government, to deal with national regulatory problems.

The principles and assessment requirements apply to agreements or decisions to be given effect, whether at the Commonwealth or State/Territory level, or both, through principal and delegated legislation, administrative directions or other measures which, when implemented, would encourage or force businesses or individuals to pursue their interests in ways they would not otherwise have done. This does not include purchasing policy or industry assistance schemes.

The principles and assessment requirements do not apply to agreements or decisions that result in regulation that is minor or machinery in nature and do not substantially alter existing arrangements. Nor do the principles apply to early "brainstorming" discussions of Ministerial Councils which are not supported by *written* submissions outlining regulatory options or recommendations regarding regulatory action.

Development of voluntary codes and other advisory instruments should take account of these principles and assessment requirements where there is a reasonable expectation that their promotion and dissemination by standard-setting bodies or by government could be interpreted as requiring compliance. For example, should non-compliance with provisions of a voluntary code be considered as evidence by a court or an administrative body when determining compliance with statutory obligations, such advisory documents are subject to the review process.

The Commonwealth Office of Best Practice Regulation (OBPR) will provide advice and assistance on regulation impact assessment, the preparation of RISs for Ministerial Councils and monitor and report on compliance with the requirements of this COAG Guide. Contact details for the OBPR are available at http://www.obpr.gov.au. Process requirements for the preparation of RIS are outlined in this document.

PRINCIPLES OF BEST PRACTICE REGULATION

Principles of Best Practice Regulation

COAG has agreed that all governments will ensure that regulatory processes in their jurisdiction are consistent with the following principles:

1. establishing a case for action before addressing a problem;
2. a range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs assessed;
3. adopting the option that generates the greatest net benefit for the community;
4. in accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:-
   a. the benefits of the restrictions to the community as a whole outweigh the costs, and
   b. the objectives of the regulation can only be achieved by restricting competition;
5. providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear;
6. ensuring that regulation remains relevant and effective over time;
7. consulting effectively with affected key stakeholders at all stages of the regulatory cycle; and
8. government action should be effective and proportional to the issue being addressed.

A discussion of the above principles, and some of the factors Ministerial Councils should consider in applying these principles to the regulation making process when assessing potential responses to policy problems, is included below.

Principle 1: Establishing a case for action before addressing a problem.

An important first step before considering any action is to examine closely whether there is a problem, and to make an initial decision on whether any action is required.

Principle 2: A range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs considered.

Once the problem has been examined and a case for government intervention has been established, officers should identify the objectives for any intervention and consider all feasible options, of both a regulatory and non-regulatory nature, that could wholly or partly achieve these objectives. Working from an initial presumption against new or increased regulation, the overall goal is the effective and efficient achievement of the stated objectives. The 'status quo' and effectiveness of existing regulations should be considered as an option for meeting the objectives.

Principle 3: Adopting the option that generates the greatest net benefit for the community.

This requires a rigorous regulation impact assessment of all the feasible policy options available to address the identified problem. Decision makers should adopt the option which provides the greatest net benefit to the community. Decisions about whether regulatory action is in the public interest should be informed by an assessment of the effectiveness of the proposed action in meeting the identified objective, and the costs and benefits of the proposed action for the community as a whole.

Principle 4: In accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:

- the benefits of the restrictions to the community as a whole outweigh the costs; and
- the objectives of the regulation can only be achieved by restricting competition.

Many existing and proposed regulations and requirements restrict competition, including by imposing barriers to entry, exit, or innovation, and can have the effect of restricting consumer choice, raising prices and reducing overall economic efficiency and productivity.

As far as possible, restrictions on competition should be avoided or minimised. Regulation should only restrict competition where this is necessary to achieve the objective, and the benefits of restricting competition outweigh the costs.

Principle 5: Providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear.

When making a decision to adopt a regulatory solution to a problem in order to deliver the greatest net benefit for the community, it is necessary to clearly articulate any decision and new regulations for the benefit of regulators administering the solution as well as regulated parties.

Regulation should have clearly identifiable outcomes and unless prescriptive requirements are unavoidable in order to ensure public safety in high-risk situations, performance-based requirements that specify outcomes rather than inputs or other prescriptive requirements should be used.

Good regulation should attempt to standardise the exercise of bureaucratic discretion, so as to reduce discrepancies between government regulators, reduce uncertainty and lower compliance costs. Regulatory measures should contain compliance strategies which ensure the greatest degree of compliance at the lowest cost to all parties.

Where possible, regulatory instruments should be drafted in ‘plain language’ to improve clarity and simplicity, reduce uncertainty and enable the public to understand better the implications of regulatory measures.

Appendix A sets out the key features of good regulation in more detail.

Principle 6: Ensuring that regulation remains relevant and effective over time.

To ensure regulation remains relevant and effective over time it is important that all regulation be reviewed periodically. All governments have committed to reviewing annually existing regulations with a view to encouraging competition and efficiency, streamlining the regulatory environment, and reducing the regulatory burden on business arising from the stock of regulation.

Ensuring that regulation remains relevant and effective over time may be achieved through planning for monitoring and review of regulation as part of the development of new regulatory proposals, or by incorporating sunset provisions or review requirements in legislative instruments.

Principle 7: Consulting effectively with affected key stakeholders at all stages of the regulatory cycle.

There should be effective consultation with affected key stakeholders at all stages of the regulatory cycle. Public consultation is an important part of any regulatory development process. Consultation should occur when the options for regulatory action are being considered and a draft RIS (also known as the 'Consultation RIS') has been produced. This will give interested parties a range of options and also in some cases a firm proposal to consider.

Consultation on regulatory options can improve the quality of the solution adopted by:

- ensuring that both those affected by regulation, and the actioning agencies, have a good understanding of what the problem is;
- providing perspectives and suggestions, on alternative options to address the problem, from those parties that will be affected by the government action;
- helping regulators assess competing interests;
- providing a check on the regulator's assessment of costs (including compliance costs) and benefits and whether/how the proposed option will work in practice, thus reducing the risk of unintended consequences if a particular option is adopted;
- identifying interactions between different types of regulations; and
- possibly enhancing voluntary compliance through greater understanding and acceptance of a proposal, thereby reducing reliance on enforcement and sanctions.

Principle 8: Government action should be effective and proportional to the issue being addressed.

In all responses to identified problems, government action should be effective and proportional to the issue being addressed. Effectiveness should be judged solely in terms of meeting the specified objective. Consideration should be given to the effectiveness of implementation and administration and, as relevant, an assessment of likely compliance rates should be made taking into account matters such as incentive structures and costs to regulated parties.

Proportionality involves ensuring that government action does not 'overreach', or extend beyond addressing a specific problem or achieving the identified objective. The scope or nature of government action should be commensurate with the magnitude of a problem, its impacts, or the level of risk without action. The principle of proportionality applies equally to the implementation of regulation, including the development of frameworks for ensuring compliance.

PROCESS GUIDELINES FOR REGULATORY IMPACT ASSESSMENT

Regulation is an essential part of running a well functioning economy and society, but must be carefully designed so as not to have unintended or distortionary effects, such as imposing unnecessarily onerous costs on those affected by the regulations or restricting competition. Assessing the impact of regulation, including analysing the costs and benefits, is therefore important to ensure that it delivers the intended objective without unduly causing adverse effects.

If regulatory options are being considered (such as self-regulation where governments expect business to comply, quasi-regulation, co-regulation and 'black letter law') then Ministerial Councils must subject these options to a regulatory impact assessment process through the preparation of a draft and final RIS.

The purpose of a draft RIS for consultation is to canvass the regulatory options under consideration, in order to determine the relative costs and benefits of those options. The purpose of a final RIS for decision makers is to draw conclusions on whether regulation is necessary, and if so, on what the most efficient and effective regulatory approach might be, taking into account the outcomes of the consultation process. The basic feature of a RIS is the systematic examination of the advantages and disadvantages of possible methods of achieving the objective. A number of quantitative approaches exist to assist in evaluating options as part of the regulatory impact assessment including:

- risk analysis;
- cost-benefit analysis;
- measuring business compliance costs; and
- assessing effects on competition.

Detailed advice for Ministerial Councils on these quantitative approaches (risk analysis, measurement of business compliance costs and assessment of competition effects) is included in the appendices to this guide . The OBPR can also provide advice and assistance and is responsible for monitoring compliance with the requirements set out in this Guide.

The following steps for preparing RIS are provided to assist Ministerial Councils (including their secretariats or advisory committees) in determining appropriate courses of action and maximising the effectiveness and efficiency of new regulation taking into account the principles outlined above.

As a general rule the level of detail within the assessment should be commensurate with the impact of the proposed regulatory measures.

Steps for Policy Officers undertaking Regulatory Impact Assessment

Step one:

Consult early with the OBPR and seek advice about whether a RIS should be prepared.

Step two:

Send the draft RIS (also known as the 'consultation RIS') to the OBPR for advice as soon as practicable and before the draft RIS is made available for public comment. Where a trans-Tasman (such as Trans Tasman Mutual Recognition Arrangement (TTMRA)) issue is involved, the OBPR will refer it to the Regulation Impact Analysis Unit of the New Zealand Ministry of Economic Development for comment.

A Ministerial Council should continue to consult with the OBPR as the draft RIS is developed further.

It is expected that the level of analysis in a draft RIS would be lower than the level on analysis in the final RIS. This is because the impacts of options are sometimes unclear. The community consultation process is designed to allow interested parties and stakeholders to identify help such impacts. In such cases the OBPR may focus its assessment primarily on the first three parts of the draft RIS, the problem, objectives and options section of the RIS.

Step three:

The Ministerial Council should await the comments of the OBPR prior to public release of the draft RIS for the purpose of consultation. The draft RIS approved by OBPR should be publicly released as part of the mandatory community consultation process.

Step four:

Consult with affected stakeholders by placing advertisements in all jurisdictions to give notice of the intention to adopt regulatory measures, to advise that the RIS is available on request and invite submissions.

Step five:

The RIS should be developed further following its public release, taking into account outcomes from the consultation process and incorporating a list of stakeholders consulted and a summary of their views.

Step six:

The final RIS for decision makers should be forwarded to the OBPR prior to a decision being made by a Ministerial Council. The OBPR will assess the RIS within two weeks of receipt. The assessment will focus on whether the RIS meets the requirements set out in this document, including:

- whether the RIS Guidelines have been followed;
- whether the type and level of analysis are adequate and commensurate with the potential economic and social impacts of the proposal; and
- whether the RIS demonstrates that the preferred option results in a clear net benefit to the community.

Where the preferred option restricts competition, the benefits to the community of the restriction should outweigh the costs and it should be demonstrated that the objectives of the regulation can only be achieved by restricting competition.

The OBPR will advise the Ministerial Council or standard setting body of its assessment, incorporating any comments from New Zealand relating to a trans-Tasman issue.

The Ministerial Council will determine whether or not to adopt the OBPR's advice.

Step seven:

Following a decision by the Ministerial Council to proceed with a regulatory course of action, the decision making body should respond to any issues that have not been dealt with in the way recommended by the OBPR.

Step eight:

Both OBPR comments and any responses made by Ministerial Councils should be available to Commonwealth, State and Territory Cabinets.

Step nine:

The OBPR is to advise Senior Officials through the COAG Secretariat in the Department of the Prime Minister and Cabinet if, in its opinion, decisions of Ministerial Councils are inconsistent with COAG Guidelines.

After a decision is taken, the final RIS, which should be of a standard suitable for publication, will generally be made public.

RIS Guidelines

What needs to be included in a RIS?

This section outlines the process for preparing a RIS and the key questions for consideration at each stage in the process. The basic feature of a RIS is the systematic examination of the advantages and disadvantages of possible methods of achieving an agreed objective.

As a general rule, the level of analysis included in the final RIS provided to the decision maker should be higher than that included in the draft RIS which is prepared for the purpose of consultation.

As outlined below there are seven key elements that should be contained in a RIS. The detail and depth of analysis in a RIS should be commensurate with the magnitude of the problem and with the size of the potential impacts of the proposal. More detailed discussion of the seven elements of a RIS can be found in the OBPR's *Best Practice Regulation Handbook*, which can be downloaded from http://www.obpr.gov.au/bestpractice/index.html

Element 1 Statement of the Problem

The RIS should clearly identify the fundamental problem(s) that need to be addressed. This part of the analysis must:

- present evidence on the magnitude (scale and scope) of the problem;
- document relevant existing regulation at all levels of government, and demonstrate that it is not adequately addressing the problem;
- if the problem involves risk, identify the relevant risks and estimate the probability of an adverse outcome, including where no new or amended regulations are made and where government action would reduce the risk; and
- present a clear case for considering that additional government action may be warranted, taking account of existing regulation and any risk issues.

The statement of the problem should establish a case for action (Best Practice Regulation Principle 1). In particular, officers should consider the following questions:

- what is the problem being addressed?
- how significant is it?
- what are the costs, risks or benefits of maintaining the status quo?

- why is government action needed to correct the problem?
- is there relevant regulation already in place?
- if regulation is in place, why is additional action needed?

Information should be obtained on the nature and magnitude of the problem as well as identifying what government actions (if any) have been taken in the past to address the problem. In some cases government intervention in a market may be justified on the basis of 'market failure', which can arise where there is:

- imperfect competition;
- externalities;
- public goods; or
- imperfect or costly information.

The term market failure is sometimes misunderstood to indicate a failure of markets to deliver a desirable social or equity goal. Any underlying market failure, regulatory failure (for example, unintended consequences or failure of existing regulation) or risks should be clearly identified.

Element 2 Objectives

The RIS should clearly articulate the objectives, intended outcomes, goals or targets of government action. The objectives should not pre-justify a preferred solution. Nor should government regulation be considered to be an objective of government action (that is, regulation is a means to an end, not an end in itself). The objectives should be specified broadly enough to allow consideration of all relevant alternative solutions, but without being so broad that the range of options becomes too large to assess, or the extent to which objectives have been met becomes too hard to establish.

Element 3 Statement of Options

The RIS should identify a range of viable options including, as appropriate, non-regulatory, self-regulatory and co-regulatory options. If only one option (apart from the status quo) is considered feasible, the RIS should provide sound justification for considering only two options.

The Statement of Options of a RIS should address Principle 2 by demonstrating that officers have considered a range of policy options and the benefits and costs of these options.

Regulatory measures and instruments should be the minimum required to achieve the pre-determined and desirable outcomes. Where a decision is made to consider regulatory options additional factors that should be explored include:

- consistency with Australia's international obligations and relevant international accepted standards and practices;
- potential incentive effects and secondary effects;
- minimisation of regulation and administrative burdens as much as possible;
- the potential regulatory burden of alternative measures on the community; and
- compliance and enforcement issues.

Alternatives to regulatory options might include education campaigns.

Element 4 Impact Analysis (Costs and Benefits)

The RIS should provide an adequate analysis of the costs and benefits of the feasible options and should:

- identify the groups in the community likely to be affected by each option and specify significant economic, social and environmental impacts on them;
- assess the costs and benefits of all the options supported by an acceptable level of evidence, where appropriate through a formal cost-benefit analysis (see Appendix C);
- assess the impacts on business, particularly small business, and quantify the effect of each option on business compliance costs (using a tool such as the Business Cost Calculator) (see Appendix D);
- quantify other significant costs and benefits where appropriate, taking into account the significance of the proposal, its impact on stakeholders;
- if an objective of regulation is to reduce risk, analyse the extent to which each option would reduce the relevant risk, and the costs and benefits involved (see Appendix B);
- recognise the effect of the options on individuals and the cumulative burden on business;
- document any relevant international standards, and if the proposed regulation differs from them, identify the implications and justify the variations;
- if the proposed regulation would maintain or establish restrictions on competition, demonstrate that government objectives can be achieved only by restricting competition (see Appendix E); and
- provide evidence in support of key assumptions and clearly identify any gaps in data.

Where a proposed regulation would maintain or establish restrictions on competition, an assessment against the Competition Principles Agreement guiding principle should be undertaken (see Appendix E). The extent of this assessment should be commensurate with an initial assessment of the extent of the anti-competitive impact. It should involve the evaluation of the impact (for primary and relevant related markets) of the regulatory proposal on the following:

- incumbent businesses;
- entry of new businesses;
- prices and production;
- quality and variety of goods and services;
- innovation;
- market growth; and
- related markets.

The results of this assessment should be compared with assessments of feasible alternative policy options that would equally achieve the policy goal but be less anti-competitive. If there are no available alternatives, the proposal should be assessed from the perspective of economic well being or net benefit to the community.

Regulation impact analysis of the feasible policy options, should also include an assessment of whether a regulatory model is already in place in a participating jurisdiction that would efficiently address the issue in question and whether a uniform, harmonised or jurisdiction-specific model would achieve the least burdensome outcome (or generate the greatest net benefit for the community). A regulation impact assessment should also have regard to whether the issue is state-specific or national, and whether there are substantial differences that may require jurisdiction-specific responses.

The impact analysis in a RIS should include an assessment of Principle 3, that is, adopting the option that generates the greatest net benefit to the community.

There are a number of different approaches to quantitative analysis to help establish the most efficient form that any regulation might take. The techniques set out below are to be employed to determine the option with the greatest net benefit for the community (a particular technique may be omitted if circumstances render it irrelevant).

Risk analysis

This methodology is of use in addressing the threshold issue of whether or not to regulate. Risk analysis should be used in conjunction with other quantitative assessment techniques. Detailed guidance for Ministerial Councils on undertaking risk analysis is included at Appendix B.

Cost-benefit analysis

This technique requires that all the major costs and benefits of a proposal be quantified in monetary terms. In this way, the outcomes of a range of options are translated into comparable terms in order to facilitate evaluation and decision-making. Cost-benefit analysis is most effective in instances where there is sound information on which to base the analysis. However, it should also be noted that cost-benefit analysis should involve consideration of the distribution of benefits and costs, as well as taking account of impacts which are unable to be valued quantitatively. Detailed guidance for Ministerial Councils on undertaking cost-benefit analysis is included at Appendix C.

Business compliance costs

Consideration should also be given to the compliance burden imposed on business. These are the additional (incremental) costs incurred by businesses when complying with regulations.

One option for making initial assessments of the likelihood a proposal will involve compliance costs for business is through the use of the Business Cost Calculator's *Quickscan* function. This tool is located on the OBPR website at www.obpr.gov.au/businesscostcalculator/index.html

If this indicates there are compliance costs for business, then the Business Cost Calculator can be used to complete a detailed assessment of these costs.

As part of a regulatory impact assessment, a practical approach for considering the impacts on business compliance costs potentially flowing from regulatory proposals is through a set of threshold questions. A compliance cost checklist is included at Appendix D.

Competition effects

Ministerial Councils will also need to have regard to the competition effects of any policy options. This is discussed in the next section.

Each RIS should outline the results of this analysis and come to a conclusion on which of the options being considered provides the greatest net benefit for the community for the benefit of the ultimate decision making body.

The impact analysis in a RIS should also include an assessment of Principle 4, that legislation should not restrict competition unless it can be demonstrated that the benefits of the restrictions to the community as a whole outweigh the costs; and that the objectives of the regulation can only be achieved by restricting competition adopting the option that generates the greatest net benefit to the community.

A preliminary analysis of whether a proposal may restrict competition can be conducted by working through the questions in the competition checklist included at Appendix E.

Element 5 Consultation

The final RIS should:

- outline the consultation objective;
- describe how consultation was conducted (including the stages of the policy development process at which consultation was undertaken, the timeframes given, and the methods of consultation);
- articulate the views of those consulted, including substantial disagreements;
- outline how those views were taken into consideration; and
- if full consultation was not undertaken, provide a reasonable explanation.

The consultation statement in a RIS should address Principle 7 by setting out the consultation undertaken with affected key stakeholders.

Consultation should occur as widely as possible but, at the least, should include those most likely to be affected by regulatory action (for example, consumer and business organisations) which might provide valuable feedback on the costs and benefits of regulation and on the impact assessment analysis generally. Consultation will also provide feedback on the level of support for the proposed regulation.

A statement of the consultation undertaken is a key component of the RIS process.

The OBPR has developed seven principles for best practice consultation and these are detailed in Appendix F.

Element 6 Evaluation and Conclusion

The RIS should provide a clear statement as to which is the preferred option and why.

The RIS should demonstrate that:

- the benefits of the proposal to the community outweigh the costs; and
- the preferred option has the greatest net benefit for the community, taking into account all the impacts.

Element 7 Implementation and Review

The RIS should provide information on how the preferred option would be implemented, monitored and reviewed. Interactions between the preferred option and existing regulation of the sector should be clearly identified.

The implementation and review section of a RIS should address Principle 6, ensuring that regulation remains relevant and effective over time. Specified outcomes of standards and regulatory measures should be capable of revision to enable them to be adjusted and updated as circumstances change.

However, it is important to ensure that amendments to regulatory measures and instruments do not result in undue uncertainty in business operations and in so doing, impose excessive costs on that sector.

Strategies for reviewing new regulations should be identified in the RIS when considering the policy option.

Frequently Asked Questions

What if there is not time to prepare a RIS?

A Ministerial Council may decide that a situation requiring a regulatory response is an emergency. In these cases, a RIS need not be prepared before the regulation comes into effect. However, the Chair of the Ministerial Council must write to the Prime Minister before making the regulation:

- seeking agreement to waive the need for a RIS; and
- explaining why the situation was an emergency and why no transitional measures were available.

If the situation was an emergency, the Ministerial Council would be expected to prepare a RIS within 12 months of making the regulation. Alternatively, in emergency cases the briefing material prepared for a Ministerial Council can be provided to the OBPR, which will advise whether the key elements of a RIS are addressed in such material. If so, the OBPR can "post assess" the material as complying with the COAG Guidelines.

At what point is a RIS required?

A final RIS is required at the point a decision is taken. For multi-staged decision-making processes, where a RIS is prepared in accordance with these Guidelines, a RIS will not generally be required for follow-up or subsequent regulation which implements the original decision, unless significant additional regulation is contemplated.

What is the role of the OBPR?

The OBPR does not have any power over decisions made by Ministerial Councils and its role is advisory. COAG has directed the OBPR to provide independent advice on the adequacy of RIS prepared for both public consultation and decision by Ministerial Councils. In fulfilling this role the OBPR does not support any particular regulatory approach or jurisdiction. The OBPR can assist and advise as to whether a RIS is consistent with the principles and Guidelines in this document. However, the attention of COAG can be drawn to any regulatory proposals for which the RIS is seriously inadequate through the Productivity Commission's annual regulatory report.

REQUESTING A REVIEW OF A REGULATION IMPACT STATEMENT

If, prior to the introduction of a regulation, there is some dissatisfaction with the process or adequacy of the analysis by which conclusions were reached, two or more jurisdictions may request an independent review of the proposed regulation. The Ministerial Council must then defer its consideration of the regulation and commission a review.

The process of independent review would be triggered if two Heads of Government write to the Chair of the Ministerial Council requesting an independent review of the assessment process. Upon completion, the review body will report back to the relevant Ministerial Council.

The Ministerial Council is to nominate an independent body to conduct the review (the review body). This might include a regulatory review body in any jurisdiction, an appropriate specialist body or a consultant. Jurisdictions that request the review will meet the review's cost and agree to make resources available for the conduct of the review if the Ministerial Council decides to use State or Territory government regulatory review units to conduct the review.

The review body's task is to reassess the RIS and report on whether it can be demonstrated that the assessment process has been carried out according with the Guidelines in this document. It is not intended that the independent review should necessarily repeat the quantitative analysis. The review body may also comment on any aspect of the proposed regulation and will have access to public submissions made in the course of the assessment process.

The report of the review body would become a public document and would be considered by the Ministerial Council in its discussion of the adoption of the proposed regulatory measures. Once the report has been considered, the Ministerial Council's consideration of whether or not the regulation should be adopted by member governments can proceed.

The initial regulatory impact assessment and any review of that assessment are designed to provide the best possible information for decision making by the Ministerial Council. The impact assessment will not bind them or the participating governments since most Ministerial Councils are not formally established and do not have formal and binding voting arrangements. Their purpose is to develop a national consensus in relation to the matters which they consider.

If, upon the advice of the review body, a State or Commonwealth regulatory review body, or other advice, the impact assessment is found to have been faulty, the Ministerial Council retains discretion in its use of the impact assessment to inform its decision making.

If a Ministerial Council fails to act on the recommendations of the review, the matter may be further examined by Heads of Government.

APPENDIX A: FEATURES OF GOOD REGULATION

In formulating national standards and regulatory measures according to the above principles and guidelines, Ministerial Councils should also take into account the following practical features of good regulation.

Accountability

As set out in the protocols for the operation of Ministerial Councils, it is the responsibility of Ministers to ensure that they are in a position to represent appropriately their Government at Council meetings. Therefore, to the greatest extent possible, Ministers should obtain full government agreement on matters which may involve regulatory action before they are considered at Ministerial Council level.

Where a Minister is dissatisfied with the outcome of the impact assessment process, the Minister may seek the agreement of his/her Head of Government to request an independent review of the assessment process.

Compliance strategies and enforcement

Regulatory measures should contain compliance strategies which ensure the greatest degree of compliance at the lowest cost to all parties. Incentive effects should be made explicit in any regulatory proposals. Measures to encourage compliance may include regulatory clarity, brevity, public education and consultation and the choice of alternative regulatory approaches with compliance in mind.

The special characteristics of process regulation need to be considered. For example, the number of licences, certifications, approvals, authorities et cetera. should be kept to the minimum necessary to achieve the regulatory objectives.

The regulatory burden can be reduced if the public is required to undertake a minimum level of interaction with government to, for example, renew permits/ licences or file information. This can be achieved through measures such as ‘one stop shops’; mutual recognition of approval processes within government as well as between governments; better forms and process design.

Having taken these steps to facilitate compliance, regulators also need to consider the feasibility of enforcing regulatory requirements through the detection of non-compliance.

Mandatory regulatory instruments should contain appropriate sanctions to enforce compliance and penalise non-compliance. However, enforcement options should differentiate between the good corporate citizen and the renegade, to ensure that ‘last resort’ penalties are used most effectively (rarely) but model behaviour is encouraged. Enforcement measures should not have the effect of encouraging otherwise good corporate citizens to subvert compliance measures.

Inclusion of standards in appendices

Standards should be referenced as current editions in appendices to regulatory instruments rather than embodied in such instruments themselves. It may be appropriate in some circumstances for regulations to reference a specific standard (eg AS 1234).

A disadvantage of only referencing the title of a standard (eg AS1234) is that impact assessment is carried out only on the initial instrument and referenced standard. The standard, however, may be subsequently

changed or updated. This may result in significant changes to the costs or benefits of regulation, with no opportunity to review the implications of such a change. This can have the effect of transferring regulatory power from governments to standard setters. To prevent this, it may be appropriate in some circumstances for regulatory instruments to reference a specific version of a standard by referring to its date (for example, AS 1234, 1993). If an amended version of a standard is to be adopted any changes to this standard would then require amendment of the regulatory instrument and hence further impact assessment.

An advantage of only referencing the title is that changes to the standards do not render the regulations null and void.

In determining whether to include a standard, consideration should also be given to the costs of obtaining the standard in order to comply with it.

Performance-based regulations

Regulatory instruments should be performance-based, that is, they should focus on outcomes rather than inputs. 'Deemed to comply' provisions may be used in instances where certainty is needed. In such cases, regulations might reference a standard or a number of standards deemed to comply with the regulation. There should be no restrictions on the use of other standards as long as the objectives of the regulation are met.

Plain language drafting

Where possible, regulatory instruments should be drafted in 'plain language' to improve clarity and simplicity, reduce uncertainty and enable the public to understand better the implications of regulatory measures.

Date of effect

The dates of commencement of proposed standards and regulatory measures should be carefully planned to avoid or mitigate unintended or unnecessary market consequences, such as the necessity to discard non-complying stock and to allow transition to compliance with new regulatory requirements.

Advertising the introduction of standards and regulations

Public consultation usually only involves interested parties. Therefore, once produced, new regulatory measures should be advertised to bring them to the attention of the wider community.

International standards and practices

Wherever possible, regulatory measures or standards should be compatible with relevant international or internationally accepted standards or practices in order to minimise the impediments to trade. Compatibility in this context does not necessarily imply uniformity, however.

National regulations or mandatory standards should be consistent with Australia's international obligations. Australia has obligations under the GATT Technical Barriers to Trade Agreement (Standards Code) and the World Trade Organisation's Sanitary and Phytosanitary Measures (SPS) Code. Regulators may refer to the Standards Code relating to the International Standards Organisation's Code of Good Practice for the Preparation, Adoption and Application of Standards.

APPENDIX B: RISK ANALYSIS

What is risk?

Risk is the probability of an undesirable event occurring. Much regulatory activity, for example in the areas of health and safety, is concerned with the risk of persons being harmed by engaging in a particular activity (for example, by consuming a product or by working in a factory). The notion of harm encompasses fatality, injury or illness.

Risks can be viewed in several ways. It is possible to look at societal risk or individual risk. The former averages out individual risk and measures the risk to society as a whole or to a large group of people. Individual risk, on the other hand, varies from person to person. In addition, voluntary risk can be distinguished from involuntary risk. Voluntary risk occurs where an individual can choose to undertake or avoid the risk-causing activity and is fully aware of the consequences.

Conversely, involuntary risk occurs where there is no choice or inadequate information about the consequences. Incomplete information is one of the main forms of market failure. An analysis should also make a distinction between perceived risks and actual risks. Perceived risks occur where individuals overstate the importance of relatively improbable events or discount the importance of highly probable events.

An important distinction to make when conducting risk analysis is that between risk and uncertainty. Risk involves a situation where the probabilities of the various outcomes are reasonably well known. In statistical terms, a probability distribution can be attached to the cost or benefit in question. Uncertainty involves a situation where, while the values the costs or benefits may take may be known, the probabilities of the outcomes are not known.

What is risk analysis?

Risk assessment is a means of analysing the risk of an undesirable event occurring and the consequences that are liable to arise if does occur. An integral part of the assessment process, following on from these first two steps, is determining what action may be necessary to reduce or eliminate the risk and/or its consequences.

Risk analysis is commonly used by policy analysts as a means of assessing individual and societal risks and proposing possible regulatory and non-regulatory solutions to an identified problem. It is most commonly used to analyse regulatory interventions in the health and safety field. However it can also be applied in other public policy fields.

Risk analysis

Risk analysis can serve a number of functions. By comparing the risk associated with the status quo with that after government intervention, it can be used to determine more accurately whether intervention is appropriate and/or worthwhile. Risk analysis can also be used as an input into other assessment techniques like cost-benefit analysis.

Risk analysis, in its most basic form, involves quantitative assessment of the magnitudes of the risk affected by the proposal. The contents of a risk analysis can easily be extended by the assessment of additional information, such as benefits or associated risks.

Risk analysis is a valuable tool in further addressing the threshold issue of whether or not to regulate. Furthermore, risk analysis is of use in answering two important questions. First, whether the risks that regulation is intended to address are of significant magnitude compared with other risks. Second, the extent to which regulation reduces the initial risk problem.

Content of a risk analysis

The following issues can be addressed in the risk assessment of regulation:

- an appraisal of the current level of risk to the exposed population from an identifiable source;
- the reduction in risk which will result from the introduction of the proposed measures;
- consideration of whether the proposed measures are the most effective available to deal with the risk; and
- whether there is an alternative use of available resources which will result in greater overall benefit to the community.

Limitations of risk analysis

There are a number of ways of assessing risk and the impact it is liable to have. They tend to be relatively arbitrary and non-empirical, so that a set of results can be easily interpreted by different persons in different ways. Risk assessment does not normally involve an assessment of the costs likely to be incurred by the affected parties if the undesirable event does happen. Nor does it take into account the costs and benefits associated with the measures proposed to reduce or eliminate the risk and/or its consequences. Risk analysis should therefore not be used as the sole basis for deciding whether to take action to correct an undesirable situation or for determining the type of action to be taken.

The risk analysis process

Risk analysis involves three distinct but inter-linked steps:

- defining the risk;
- selecting the appropriate response; and
- monitoring the situation and reviewing the effectiveness of the response that was selected and implemented.

Defining the risk

The following questions should be answered to ensure that the risk is defined as accurately as possible:

1. What is the hazard? It is necessary to define exactly what the hazard is;

2. What is the risk? It is important to distinguish between commercial risks and physical risks. Commercial risks can, and probably should, be borne by the company or industry involved and resolved at that level. On the other hand, a physical risk (and this ranges from a direct personal threat to life to environmental pollution) is a problem that is likely to affect individuals and society as a whole and therefore is best addressed at the appropriate government level;

3. How widespread is the risk? Is the risk local only, is it state-wide, national or international ? Obviously, the extent of measures to be considered to combat the risk will depend on this assessment, and may include the need for international co-operation;

4. Is the risk transmittable? In the case of medical risks, for example (such as a contagious disease), the transmitability of the risk is crucial to this assessment, as is the means of transmission and its avoidability. This will also involve identification of the source of the risk and whether transmission occurs across boundaries, for example, from plants to insects to animals to humans, or between different geographical locations;

5. In what circumstances will the risk arise? Is the risk continuous, or will it arise only in particular circumstances (for example, if a product is used only in a specific way; or only if a particular chemical is used);

6. Who or what is most at risk? Identification of the at-risk groups is crucial. It is necessary to determine for instance whether children of certain ages are most at risk, whether it is the population as a whole, whether the risk is confined to a particular group (for example, only plants, or male children below the age of 10, or women over 45); and

7. Is harm or injury liable to occur? Having gone through the above steps, it is important to determine whether any actual harm (for example, to the environment) or injury is liable to occur. This necessarily involves assessing not only the immediate effects but also the longer term effects. If no actual harm or injury is liable to occur, then any question of intervention probably becomes almost superfluous.

Selecting the response

This step is dependent on the accuracy and completeness of having defined the hazard. The first question to be asked is whether there is any realistic, viable action that the government can take to correct or ameliorate the situation. If the answer is no, or if the costs of any action are likely to outweigh the benefits, then serious consideration should be given to not taking any action at all. An explanation must be given as to what actions were considered, why they are impractical and the consequence (if any) of no action being taken.

Monitor the situation and review the effectiveness of the response

Whether the selected response is no action, introduction of a tax or subsidy, or a voluntary code of practice or a mandatory regulation, it is essential that both the situation and the effectiveness of the response be closely monitored. Monitoring will determine whether:

- the risk was under- or over-estimated and the response is adequate in the circumstances;
- the risk has changed and the response no longer applies to new circumstances; and
- those at which the action was directed are responding.

The monitoring and assessment process requires determination of:

- whether the risk has been eliminated. In which case, can the response be removed altogether or should it be retained in place to prevent a recurrence of the risk?
- whether the risk has been reduced but not eliminated. It may be unrealistic to expect complete elimination of the risk to occur. In that case, what level of reduction in the risk leaves a situation which, while not necessarily ideal, is acceptable? and
- how much longer the response should be left in place. If any reduction in the level of risk is not sufficient to justify considering the situation to be acceptable, how much longer should the response stay in place to reach an acceptable level of reduction?

APPENDIX C: COST-BENEFIT ANALYSIS

What is cost-benefit analysis; and how and where can it be used?

Cost-benefit analysis (CBA) is an analytical tool that can be used to measure the economic and social impact of government action by reference to the 'net social benefits' that action might produce. As such, it can be a valuable aid to decision making. Its power as an analytical tool rests in two main features:

- costs and benefits are each as far as possible and appropriate expressed in money terms and hence are directly comparable with one another; and
- costs and benefits are valued in terms of the economy and society as a whole, so the perspective is 'global'. This contrasts with, for example, a financial evaluation, which is conducted from the vantage point of an individual, a firm, an organisation or group.

Cost-benefit analysis can be employed to decide:

- whether a regulatory proposal should be undertaken;
- if an existing regulation should be maintained; or
- between alternative regulatory proposals (usually aimed at similar objectives).

Decisions about the overall effectiveness of regulatory action should not be made on the basis only of its effect on particular groups in society. Public policy makers are expected to make judgments based on what is best for the community as a whole. By measuring 'social', as opposed to only private, market-based costs and benefits, CBA is a valuable tool when developing good policy responses to economic and social problems. When undertaking CBA as part of the evaluation of the regulatory action being considered, TTMRA Principles should be adequately considered.

The term 'net social benefits' refers to the difference between social benefits and social costs. According to the cost-benefit rule, government action is only justified where, subject to budget constraints, there are positive net social benefits expected to be gained from intervention, such as imposing regulations on the community. Benefits and costs are 'social' rather than private or individual, in the sense that they are measured irrespective of the people to whom they accrue and are not confined to formal market transactions. If there are non-market implications from regulatory activities or market prices are distorted, CBA proceeds as if the correct market prices existed. These are referred to as shadow prices.

Inevitably, some costs and benefits resist the assignment of dollar values. Known as 'intangibles', these are separately presented to decision-makers for assessment in conjunction with those that can be quantified.

A major advantage of CBA is that costs and benefits occurring at different points in time can be explicitly compared. The 'factoring down' of benefits and costs that will occur in the future into present values is known as 'discounting'. Since a dollar in the future is usually worth less than a dollar today, future costs and benefits need to be discounted to their equivalent 'present value'. Conversely, in a retrospective analysis, past costs and benefits are compounded forward to their present value.

Under the net present value rule, a regulatory activity should only be undertaken if its net present value (that is, benefits minus costs) is positive. Accordingly, CBA is a valuable tool for decision makers when assessing the issue of whether a particular proposal is appropriate. If comparing a number of options, the alternative with the highest positive net present value would be preferred.

CBA can provide guidance on the implications of regulatory activity, where there are grounds for mistrusting the signals provided by market prices or where no markets exist. CBA is also helpful where regulations impose 'spillover' costs or benefits on third parties. Often these do not receive due recognition because no formal market transactions take place. Through the use of shadow prices, values can be placed on non-market 'spillover' effects (for example, pollution, safety) and compared with market transactions.

Examples where the signals that market prices normally provide are either absent or fail to reflect the true costs of regulatory action arise when valuing:

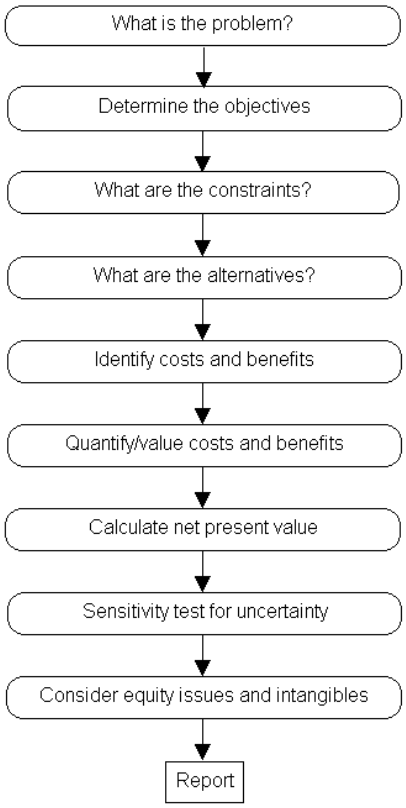
- intermediate goods - such as savings in travel time resulting from transport regulations;
- 'externalities' - or unmarketed positive or negative spillover effects such as arise from pollution, vaccination programs or banning a dangerous product;
- goods affected by taxes and subsidies; and
- labour in the presence of unemployment.

The main practical constraint to using CBA is the feasibility and appropriateness of assigning money values to the costs and benefits generated by government action. In circumstances where these constraints are overwhelming, cost-effectiveness analysis is frequently a viable alternative approach.

The key steps in the CBA process

There is a logical sequence of steps to take when undertaking a cost-benefit analysis prior to deciding on a standard or regulation. A diagram of the steps outlined below is shown in Figure 1.

Figure 1: Key steps in the cost-benefit process



1. *What is the problem?*

The first step entails an investigation and assessment of the problem, its context and its background. A proposal to intervene with regulation or standard will be based on an assessment that the status quo is undesirable. That assessment needs to be described to define the problem. This is an opportunity to place the proposal for intervention in its broader context, before narrowing the focus to its specific details.

2. *What are the objectives?*

This step includes a definition of the objectives to be achieved and who the intended beneficiaries are.

3. *What are the constraints?*

Public policy makers face various constraints on government action. Examples of such constraints are:

- financial - for example, budgetary limitations and price ceilings;
- distributional - for example, a perverse distribution of benefits among individuals or groups (for example, from the less well off to the wealthy);
- managerial - for example, limits on the staff;
- environmental - for example, compliance with environmental protection requirements; and
- policy - for example, is the proposal consistent with broad government policy?

Before options are identified for further consideration, any practical constraints on the feasibility of such alternative options should be examined and documented in the RIS. In some cases the nature and extent of these constraints may be unclear or difficult to measure. In which case, any uncertainties and risks should also be acknowledged and documented in the RIS.

When analysing all alternatives consideration should be given to the principles contained in the Competition Principles Agreement of 11 April 1995, in particular clause 1 (3), which includes reference to consideration of the environmental, social and economic aspects.

4. *What are the alternatives?*

While each alternative to the proposal for intervention that is identified will require a considerable amount of subsequent analysis if it is to be fully incorporated into a CBA, the number of alternatives generated should be sufficient to provide the decision-makers with real scope for exercising choice. To facilitate this, alternatives should be clearly distinguished.

Furthermore, a 'do nothing' alternative should always be identified, implicitly if not explicitly. This will be the base case against which alternatives can be compared. Then costs and benefits would be incremental to what would have happened in the absence of regulatory action.

5. *What are the benefits?*

A list of the benefits that are expected to flow from the proposals should be drawn up. To identify benefits (and costs), a clear account of the chain of causation from the proposal is needed. This should be available from the policy analysis undertaken in formulating the proposal. The list of benefits might include such items as:

- an increase in the value of economic output as a result of a particular action;
- avoided costs - costs which would have been incurred in the 'do nothing' situation;

- productivity savings – that is, producing more with less; and
- health, environmental and other social benefits, which are often not marketed or are characterised by prices which reflect less than the full value of the benefits.

6. *What are the costs?*

Similarly, for each alternative a list of costs should be drawn up. Examples of costs are:

- increases in expenditure by governments to establish and/or maintain regulation and enforcement regimes;
- increased costs on business and the broader community from higher input costs and regulatory compliance costs. A RIS should provide quantitative data on regulatory compliance costs, including information about the number and type of businesses or individuals affected, and the likely financial (and other) impacts on those affected. Compliance costs can include additional paper burden costs, additional staffing, licence fees or charges, external advice, transport and/or restrictions on competition. RIS should also give full consideration to ways of minimising such costs. Where quantitative data about such costs are unavailable, a qualitative assessment should be provided;
- increased costs on consumers from higher prices for goods and services; and
- externalities or spillover effects on other parties, both positive and negative. For example, environmental costs such as air, water and noise pollution.

Particular attention should be given to the likely impacts on small business, especially where regulatory compliance costs could have a disproportionate impact on small business.

7. *How can costs and benefits be quantified?*

Cost-benefit analysis compares costs and benefits using a common measure, usually dollars. Therefore, dollar values must be assigned to as many of the costs and benefits as possible. Market prices, where they exist, provide a great deal of information concerning the magnitude of costs and benefits. However, actual prices sometimes have to be adjusted to convert private costs and benefits into social ones, that is, costs and benefits which reflect gains and losses to the economy as a whole, rather than to individuals or groups.

8. *How should net present value be assessed?*

The values assigned to costs and benefits should be based on an explicit assumption about price inflation; normally, costs and benefits will be valued in real terms with the base being that of the current year. Total costs in each year of the project's life are subtracted from total benefits in that year to yield net benefits in each year. Annual net benefits are then discounted back to today's dollars. The stream of discounted net benefits is then summed to yield the net present value.

Subject to a consideration of budget constraints, intangibles and distributional issues, a CBA will support a proposal if the net present value is equal to or greater than zero. Similarly, if there are a number of ways of achieving the desired outcome, a CBA will support the alternative with the highest net present value, where that is equal to or greater than zero.

9. *How should uncertainty be dealt with?*

The values included in a CBA are the 'most likely' or 'best' estimates. Sensitivity analysis is a simple procedure for providing the decision-maker with information about the impact of estimation errors on the viability of the proposal. The first step in a sensitivity analysis is to substitute the most pessimistic estimates for each variable simultaneously, and see how much the net present value is affected. If the result is still greater or equal to zero, then we are able to say that even under worst case assumptions, the CBA supports the proposal.

The second step is to try to assess how risky the proposal is, that is, which variables significantly affect the net present value and which do not. This can be established by varying each variable one at a time, holding all other variables unchanged.

10. *How should the report be structured?*

The final step in the cost-benefit process is the writing-up of the analysis, which includes the recommendation to the decision-maker. The report should include:

- a summary of the results of the analysis;
- an introduction describing the considerations which led to the decision to undertake a CBA;
- a statement of the 'problem' the proposal is designed to redress;
- the objectives of the regulatory proposal;
- a description of the alternatives considered;
- the constraints considered in conducting the analysis and the alternatives selected;
- the time profiles of costs, benefits and net benefits, together with information on the sensitivity of those profiles to alternative assumptions;
- information on intangible costs and benefits;
- a list of assumptions made in performing the analysis, and information on how benefits and costs were estimated;
- a description of distributional effects;
- a conclusion discussing the results of the analysis; and
- an outline of an evaluation mechanism.

To what level or depth should the analysis be conducted?

The steps outlined are recommended for every CBA. However, obtaining and analysing information also incurs costs. Hence, there are important choices to make regarding the level or depth to which the analysis is conducted. The more significant a proposal and the greater the likely economic and social implications, the more expenditure on a CBA can be justified. The viability of smaller proposals can be threatened by investing too much in analysis. This possibility should set obvious limits on the level and depth of the analysis required.

The likely benefits of obtaining and analysing additional information should always exceed the costs of so doing. Better information often reduces the uncertainty surrounding estimates, however, if a proposal is already known to be clearly viable or unviable, the pay-off from obtaining extra information may be negligible. Detail and complexity are not the same as rigour - which is ultimately more important. An elaborate and detailed analysis of a problem that has been wrongly conceptualised may well be worthless.

But a 'back of the envelope' analysis of a problem that has been thought through correctly will, at the very least, be a helpful first step.

Letting decision-makers decide

Distributional implications can be obscured by the aggregating character of the cost-benefit process. Analyses should include all the information available to ensure that decision-makers are aware both of the identity of the groups likely to gain and to lose as a result of government action, and of the nature and size of the gains and losses. This information should be carefully presented, most usefully in the form of a distributional incidence chart or matrix.

Distributional judgements are properly made at the political level. In the interests of avoiding subjective bias, analysts should, by and large, refrain from attaching distributional weights to cost and benefit streams. Exceptions might be where there are unambiguous government policy objectives to assist specific groups in the community, and where the justification for special assistance to these groups relative to other groups is clearly established. However, for reasons of transparency, decision-makers and the public should be made fully aware of the costs of government action aimed at benefiting particular individuals or groups in the community.

APPENDIX D: BUSINESS COMPLIANCE COSTS

Consideration should be given to the compliance burden imposed on business. These are the additional (incremental) costs incurred by businesses when complying with the regulations.

One option for making initial assessments of the likelihood a proposal will involve compliance costs for business is through the use of the Business Cost Calculator's *Quickscan* function. This tool is located on the OBPR website at www.obpr.gov.au/businesscostcalculator/index.html

As part of a regulatory impact assessment, a practical approach for considering the impacts on business compliance costs potentially flowing from regulatory proposals is through consideration of the set of threshold questions in the checklist below.

Business Compliance Cost Checklist

As part of a regulatory impact assessment, a practical approach for considering the impacts on business compliance costs potentially flowing from regulatory proposals is through a set of threshold questions (a compliance cost checklist).

Would the regulatory proposal involve one of the following compliance tasks?

Notification

Will businesses incur costs when they are required to report certain events?

- For example, businesses may be required to notify a public authority before they are permitted to sell food.

Education

Will costs be incurred by business in keeping abreast of regulatory requirements?

- For example, businesses may be required to obtain the details of new legislation and communicate the new requirements to staff.

Permission

Are costs incurred in seeking permission to conduct an activity?

- For example, businesses may be required to conduct a police check before legally being able to employ staff.

Purchase cost

Are businesses required to purchase materials or equipment?

- For example, businesses may be required to have a fire extinguisher on site.

Record keeping

Are businesses required to keep records up-to-date?

- For example, businesses may be required to keep records of accidents that occur at the workplace.

Business Compliance Cost Checklist

Enforcement

Will businesses incur costs when cooperating with audits or inspections?

- For example, businesses may have to bear the costs of supervising government inspectors on site during checks of compliance with non-smoking laws.

Publication and documentation

Will businesses incur costs when producing documents for third parties?

- For example, businesses may be required to display warning signs around dangerous equipment or to display a sign at the entrance to home-based business premises.

Procedural

Will businesses incur costs that are of a non-administrative nature?

- For example, businesses may be required to conduct a fire safety drill several times a year.

Other

Are there any other business compliance costs associated with the regulatory proposal?

APPENDIX E: COMPETITION EFFECTS

When considering regulatory options Ministerial Councils will need to consider what the impact is of the proposed regulatory measure on competition, including the introduction of new processes and techniques.

A preliminary analysis of where a proposal may restrict competition can be conducted by working through the questions in the competition checklist below. Where this preliminary analysis indicates there will be an impact on competition, then a competition assessment should be undertaken as part of the RIS.

Competition Assessment Checklist

As part of a regulatory impact assessment, a practical approach for considering the impacts on business and individuals and on competition potentially flowing from regulatory proposals is through a set of threshold questions (a competition checklist) followed by, where appropriate, a competition assessment.

The competition assessment checklist is made up of the following threshold questions. (Some examples are provided.)

Would the regulatory proposal affect the number and range of suppliers?

- Grant exclusive rights for a supplier to provide a good or service?
- Establish a licence, permit or authorisation process as a requirement of operation?
- Affect the ability of some types of firms to participate in public procurement?
- Significantly alter costs of entry or exit to a supplier?
- Create a geographic barrier to the ability of businesses to supply goods or services, invest capital or supply labour?

Would the regulatory proposal change the ability of suppliers to compete?

- Control or substantially influence the price at which a good or service is sold?
- Alter the ability of suppliers to advertise or market their products?
- Set standards for product/service quality that are significantly different from current practice?
- Significantly alter costs of some suppliers relative to others?

Would the regulatory proposal alter suppliers' incentives to compete vigorously?

- Create a self-regulatory or co-regulatory regime?
- Impact on the mobility of customers between suppliers?
- Require/encourage the publishing of information on company outputs/price, sales/cost?
- Exempt an activity from general competition law?

If the answer to any of these questions is 'yes', then further analysis may be required and you should contact the OBPR. (There may be other impacts on business and individuals which are not covered in the checklist. In such cases you should consult with the OBPR.)

APPENDIX F: CONSULTATION GUIDELINES

Consistent with the principle for good regulatory process that effective consultation with affected key stakeholders should occur at all stages of the regulatory cycle, In February 2006, COAG committed to improving mechanisms for consultation with business and supporting appropriate consultation with all relevant stakeholders.

Consultation ensures that both the regulator and the regulated have a good understanding of the problem, alternative options to address it, possible administrative and compliance mechanisms and associated benefits, costs and risks.

Lack of consultation can lead to regulation that is inappropriate to the circumstances, costly to comply with and poorly adhered to.

Seven principles for best practice consultation are outlined below:

Continuity — Consultation should be a continuous process that starts early in the policy development process.

Targeting — Consultation should be widely based to ensure it captures the diversity of stakeholders affected by the proposed changes. This includes Commonwealth, State, Territory and local governments, as appropriate.

Appropriate timeliness — Consultation should start when policy objectives and options are being identified. Throughout the consultation process stakeholders should be given sufficient time to provide considered responses.

Accessibility — Stakeholder groups should be informed of proposed consultation, and be provided with information about proposals, via a range of means appropriate to those groups.

Transparency — Ministerial Councils need to explain clearly the objectives of the consultation process, the regulation policy framework within which consultations will take place and provide feedback on how they have taken consultation responses into consideration.

Consistency and flexibility — Consistent consultation procedures can make it easier for stakeholders to participate. However, this must be balanced with the need for consultation arrangements to be designed to suit the circumstances of the particular proposal under consideration.

Evaluation and review — Policy agencies should evaluate consultation processes and continue to examine ways of making them more effective.

Various consultation mechanisms can be used that are consistent with these principles such as annual regulatory plans, business consultation portals and the use of policy ‘green papers’ and exposure drafts for matters of major significance.

These consultation Guidelines are to be applied to all major initiatives and cover all aspects of developing regulation: from the policy proposals/‘ideas’ stage through to post-implementation reviews. The nature and extent of consultation should be commensurate with the potential magnitude of the problem and impact of proposed regulatory and non-regulatory solutions.

25 July 2011

Department of Local Government and Planning

Organisational Chart

Deputy Premier and Attorney-General, Minister for Local Government and Special Minister of State
The Honourable Paul Lucas MP

Director-General
[redacted]

Office of the Director-General
[redacted]

Growth Management Queensland
Chief Executive Officer, [redacted])

Government Planner
Gary White

Planning Services
Executive Director, [redacted] (Acting)
- Regional planning
- Specialist planning
- e-Planning
- Statutory planning
- Spatial services

Planning Policy
Executive Director, Michael Papageorgiou
- Planning policy & legislation
- Planning projects & policy integration
- Resource & landscape planning

Building Codes Queensland
Executive Director, Glen Brumby
- Building legislation & standards
- Plumbing legislation & standards
- Reform & legislative services
- Building & development dispute resolution

Business Coordination
Director, Jo Buckley

Infrastructure and Regional Futures
Executive Director [redacted] (Acting)
- Infrastructure programming & regionalisation
- Infrastructure planning

Transit Oriented Development and Design
Executive Director, [redacted] (Acting)
- TODD planning & urban design
- Active corridor planning & development
- Science precincts
- ULDA coordination

Major Projects Office
Executive Director, James Coutts

Office of Local Government
Associate Director-General [redacted]

Office of Local Government
Executive Director, [redacted]
- LG Financial services
- LG Remuneration and discipline
- LG Policy & legislation
- LG Legislative reform
- LG Programs
- LG Indigenous programs

Strategy and Governance
Deputy Director-General, [redacted]

Regional Services
Executive Director, [redacted] (Acting)
- Central, Far North, Northern, South-East, Southern Regions
- Regional coordination and service delivery

Executive Services
Director, [redacted]

Internal Audit
Director, [redacted]

Communications Services
Director, [redacted] (Acting)

Strategic Policy
Executive Director, [redacted]
- Policy & legislation development
- Policy coordination & CLLO
- Corporate planning & reporting
- Legal services

Organisational Capability
Executive Director, [redacted]
- Human resources
- Information and communications technology

Finance and Business Services
Executive Director, [redacted]
- Business information
- Facilities services
- Financial services
- Procurement advisory services

Queensland Government

Glen Thomas Brumby - Resume Address: [redacted] Gordon St, Labrador, 4215, QLD
Phone: Mobile: [redacted]

EDUCATION:
1992 BA (Jurisprudence) - Adelaide University
1994 LLB (Honours) - Adelaide University - Evidence and Family Law prizes – 1994
Australian Institute of Management – Executive Leadership Program – 2007/8

WORK:
2006 to present - Executive Director of Building Code Queensland (BCQ) Division, Department of Local Government and Planning (DLGP) formerly part of the Department of Infrastructure and Planning (DIP) and the Department of Local Government, Planning, Sport & Recreation (DLGPSR) including periods acting as Government Planner
2005- Manager, Building Fire Safety, DLGPSR
2005- Manager, Queensland Fire & Rescue Service (QFRS) Prosecution Section
2004- Manager, Budget Accommodation Project for QFRS
2003- Seconded to Fire Compliance and Prosecution Section, QFRS
1996- September - Joined QFRS
1996- Contract Lecturer - Griffith University Law Faculty
1995- Law clerk large Brisbane commercial law firm
1988-1994 - Arts\Law Adelaide University, including tutoring in law for the University
1988-1994 - South Australian Metropolitan Fire Service
1977-1988 - Professional sports career

ROLES:
EXECUTIVE DIRECTOR BCQ
Shaping direction and communicating with influence
The role requires political awareness, extensive administrative skill and the ability to manage close and intense interactions with Ministers and their offices. It involves developing and implementing a wide range of Government policies through the full range of Government policy instruments. I have provided strategic advice to the various Building Ministers and Director Generals, including accompanying and advising the Ministers at Ministerial forums, public appearances and Ministerial meetings. I regularly represent Ministers in media such as television news programs and radio interviews. I have acted in the role of Government Planner for extended periods.

Managing and inspiring people, risk and resources
I have implemented significant change management programs and large scale recruitment processes including assisting with a machinery of government change, formulating and refining the strategic direction for the Division and building a high energy and performance culture within the Division. I have overseen several reviews of BCQ's business model as the Division has evolved, including restructuring branches, creating directorates and implementing business plans and customer service and public advice protocols. I have extensive experience in managing a wide range of planning matters.

Building relationships and trust, negotiation skills
The role requires careful engagement with, and management of, a wide range of peak industry bodies and Government stakeholders in what can be volatile and emotionally charged contexts. To assist in this regard I created standing consultative groups and I now chair the well regarded DLGP Building and Plumbing Industry Consultative Groups. The role involves managing sensitive matters on behalf of Government such as strategic and controversial negotiations with industry peak bodies on proposed policy changes, including negotiations with unions, trades and professional bodies. I represent the State Government as the Queensland member of the Australian Building Codes Board and on a

range of national committees, and exercise over 50 delegated statutory chief executive powers. I chair the Plumbing Industry and the Pool Safety Councils. In addition to effective consultation, the role requires maintenance of strong whole-of-Government and peak industry body relationships (e.g. Property Council, Local Government Association of Queensland, the Housing Industry Association, Master Builders, the Real Estate Institute of Queensland, Australian Institute of Building Surveyors, Queensland Resources Council and energy providers) to assist in delivering significant Government policies and election commitments.

Achieving quality results and delivering services

I oversee policy and operational staff, a significant budget, multiple program areas, and strategic and business plans. The Division's activities include administering the Building Act 1975, the Plumbing and Drainage Act 2002, the Queensland Development and Plumbing and Wastewater Codes, the Building and Development Tribunal/Committees, the Plumbing Industry Council, the Pool Safety Council and four Branches. BCQ won the Premier's award for excellence in service delivery for the "green" category in 2009. I am required to oversee Government service delivery for Queensland's building sector and to manage building sector reforms in an ever changing environment, such as the Government's Pool Safety and Sustainable Housing Programs.

BCQ provides Queensland's input into a range of Coalition of Australian Government reforms, it has introduced many new performance based building and plumbing codes and managed building/plumbing and housing approval systems. It has introduced a number of codes and reforms to deliver on Government priorities such as the alternative water sources code for commercial buildings, water savings targets for new homes, expanding allowable uses of treated grey-water, certification reviews, water and energy sub-metering, sustainable housing initiatives (including eleven regulatory measures and the phase out of electric hot water systems), temporary buildings and external noise codes and high profile fire safety programs. This work requires that building policies be integrated with planning and local government policies along with other State and Commonwealth activities. BCQ manages the Building and Development Tribunal/Committees and it has recently expanded the jurisdiction of the Committees to hear infrastructure charges disputes as well as a range of planning matters.

MANAGER OF BUILDING FIRE SAFETY, DLGPSR. Experience included -

- Implementing the Government's Budget Accommodation Project, including a state-wide inspection program involving 120 local councils and seven Government departments, and a state-wide communication plan.
- Writing complex reports, and key correspondence for the Department of Premier and Cabinet as well as ministerial briefings, estimates briefing, letters and reports.
- Briefing parliamentary counsel on legislative changes and amending regulations.
- Managing whole-of-Government committees and working groups, including negotiating and consulting on sensitive issues and providing policy leadership.
- Managing a large and diverse team in a changing and complex environment.
- Managing complex engineering reviews of fire safety standards including a state-wide survey and investigation of fire safety in aged care and nursing homes in consultation with the Commonwealth Government.
- Managing and briefing a CEO Committee and drafting cabinet submissions as well as planning the Government's fire safety work program.
- Authoring a whole-of-Government Report for the Childers Coronial Inquiry and appearing as the State Government witness at the inquiry.

Glen Thomas Brumby - Resume Address: [redacted] Gordon St, Labrador, 4215, QLD
Phone: Mobile: [redacted]

MANAGER OF THE BUDGET ACCOMMODATION PROJECT. Experience included -

- Project planning for, and implementation of, large whole-of-Government projects.
- Providing strategic policy advice to the Minister and Director General, including drafting for cabinet submissions, briefing parliamentary counsel and managing the QFRS role in whole-of-Government projects.
- Researching, drafting, communicating and implementing a QFRS media strategy, including customer response templates, customer inquiry guidelines, drafting letters to building owners, managing a large scale building owner mail out, giving television, radio and print media interviews, lecturing on a statewide road show for local councils and building owners and simplifying web based information material.

MANAGER, QFRS COMPLIANCE AND PROSECUTION. Experience included -

- Manager of Compliance & Prosecution Section, including managing and motivating staff, directing prosecution policy, and managing budget and resources.
- Setting policy for QFRS functions under the Fire and Rescue Service Act 1990.
- Formulated and implemented high level policy relating to strategic prosecutions and issuing enforcement notices and fines.
- Design fine withdrawal and complaints handling processes and formulated guidelines on ethical decision making for enforcement officers including natural justice guidelines for complaints, and various correspondence templates.

TEACHING EXPERIENCE

- The Griffith University law faculty employed me as a contract lecturer and tutor in constitutional and administrative law in 1996. I tutored law at Adelaide University.

LEGAL EXPERIENCE

- Extensive prosecution experience with the QFRS.
- Preparing trade practices, corporations law, property, taxation, estate, family and tort law, leases and contract law advices as well as dispute resolution.
- Liaising with various government departments, law firms & businesses.
- Local government, building and planning problems.

PROFESSIONAL SPORTS

- Professional squash career – leading endorsed player for Wilson Sporting Goods, ranked continuously among the world's top 10 players and success in winning the German Federal League twice in a player/coach role. Won the World U/19 Championship twice, semi finalist of the World and British Opens, winning a number of national championships. Represented Australia.
- **Referee contact details provided on request.**

Ipswich City Council

Temporary Local Planning Instrument
01/2011
Flooding Regulation

This Temporary Local Planning Instrument encompasses:

(1) The replacement of the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5).

(2) The replacement of the following sections of the Ipswich Planning Scheme 2006:
   (a) Part 11, Section 11.4.7 - Flooding and Urban Stormwater Flow Path Areas;
   (b) Part 11, Table 11.4.3: Assessment Categories and Relevant Assessment Criteria for Development Constraints Overlays–Making a Material Change of Use;
   (c) Part 11, Table 11.4.4: Assessment Categories and Relevant Assessment Criteria for Development Constraints Overlays—Other Development; and
   (d) Part 12, Section 12.15.4 - Earthworks Code (including Lot Filling) Clause (8) Flooding and Drainage.

(3) The inclusion of Special Opportunity Areas for four (4) flood affected precincts.

This is to certify that this is a true and correct copy of Temporary Local Planning Instrument (TLPI) 01/2011 adopted on 14 June 2011 and commenced on 20 June 2011. The TLPI will cease to have effect on 19 June 2012 or when it is repealed in accordance with the provisions of the *Sustainable Planning Act 2009*.

Chief Executive Officer Date: 20 June 2011

Table of Contents

Figures

Part 1 - Short Title

1.1 This Temporary Local Planning Instrument (TLPI) may be cited as Temporary Local Planning Instrument 01/2011 - Flooding Regulation.

Part 2 - Purpose of the TLPI

2.1 The purpose of this TLPI, made under Chapter 3, Part 3 of the *Sustainable Planning Act 2009*, is to provide improved flood regulation based on a revised flood regulation line and associated development provisions.

2.2 To achieve this purpose, the TLPI will:

(a) replace the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5) to incorporate a revised flood regulation line in the form of the Adopted Flood Regulation Line;

(b) replace components of the Ipswich Planning Scheme 2006 to reflect the revised flood regulation line and enhance the application of existing flood regulations; and

(c) include Special Opportunity Areas to encourage the transition of existing flood affected residential areas to low impact non residential uses.

Part 3 - Application of the TLPI

3.1 This TLPI applies to the area to which the Ipswich Planning Scheme 2006 applies.

3.2 This TLPI overrides the provisions contained in the Ipswich Planning Scheme 2006 to the extent of matters that this TLPI relates to as outlined in Part 7.

Part 4 - Relationship with Planning Scheme

4.1 To the extent of any inconsistency between the Ipswich Planning Scheme 2006 and the TLPI, the TLPI prevails.

Part 5 - Duration of the TLPI

5.1 This TLPI will have effect in accordance with the *Sustainable Planning Act 2009* for a period not exceeding 12 months from the date of commencement of the TLPI.

5.2 This TLPI takes effect from 20 June 2011 and will cease to have effect on 19 June 2012.

Part 6 - Definitions

6.1 The terms used in this TLPI have the same meaning as defined in the *Sustainable Planning Act 2009*, unless otherwise defined in this TLPI or the Ipswich Planning Scheme 2006.

6.2 **"Adopted Flood Regulation Line"** means the flood line as depicted on the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5) dated June 2011 as contained in Attachment 1.

Part 7 - Effect of this TLPI

7.1 Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5)

This TLPI suspends the operation of the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5) dated February 2009 and replaces this Overlay Map with the Flooding and Urban Stormwater Flow Path Areas Overlay Map (OV5) dated June 2011 as contained in Attachment 1.

7.2 Part 11, Section 11.4.7 - Flooding and Urban Stormwater Flow Path Areas

This TLPI suspends the operation of the following sections of the Ipswich Planning Scheme 2006:

(a) Part 11, Section 11.4.7 - Flooding and Urban Stormwater Flow Path Areas;
(b) Part 11, Table 11.4.3: Assessment Categories and Relevant Assessment Criteria for Development Constraints Overlays–Making a Material Change of Use;
(c) Part 11, Table 11.4.4: Assessment Categories and Relevant Assessment Criteria for Development Constraints Overlays—Other Development; and
(d) Part 12, Section 12.15.4 - Earthworks Code (including Lot Filling) Clause (8) Flooding and Drainage;

and replaces these sections with those contained in Attachment 2.

7.3 Special Opportunity Areas

For the duration of this TLPI, the provisions contained in Attachment 3 provide reduced assessment levels for specified uses to encourage the transition of existing flood affected residential areas to low impact, non residential uses. These provisions apply to the areas designated in Attachment 4.

7.4 Other Legislation

To the extent of any inconsistency between State legislation / State instrument and this TLPI, the State legislation / State instrument prevails.