

**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

The Australian Building Codes Board

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 (**Attachment 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-letters 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 sewerred 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 known 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 

Glen Thomas Brumby

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

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Solicitor/Barrister/Justice of the
~~Peace/Commissioner for Declarations~~