



BUILDING SYSTEM

Building regulation advisory note

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The NSW Planning System and the Building Code of Australia 2013: Construction of Buildings in Flood Hazard Areas

This circular provides information to councils, certifiers, industry practitioners and other stakeholders regarding the relationship between the NSW planning system's flood prone land management, and the key elements of the new provisions of the Building Code of Australia 2013, relating to construction of buildings in flood hazard areas.

Introduction

This Planning Circular should be read in conjunction with Planning Circular BS 13-003 relating to key changes in the Building Code of Australia 2013 (BCA 2013).

This circular relies on the reader having a working knowledge of both the NSW planning system and the BCA.

(Terms of the performance-based BCA used in this circular such as 'Performance Requirement', 'Alternative Solution' and Deemed-to-Satisfy Provisions' are described in Volume One Part A0 and Volume Two Part 1.0 of the BCA).

Key definitions used in the new BCA flood hazard provisions are provided at the end of this circular.

Land use planning for flood prone land and BCA 2013

The overarching policy context for floodplain management in NSW is provided by the *NSW Flood Prone Land Policy*, contained within the *Floodplain Development Manual* (NSW Government, 2005). The manual provides guidance relating to flood studies and the development of floodplain risk management plans, which provide a holistic approach to the management of flood prone land.

The NSW land use planning system provides mechanisms to manage flood prone land. In addition to consideration of flood prone land, when undertaking strategic land use planning councils typically include a model local provision for flood planning within their Local Environmental Plan (LEP) and further detailed controls within their Development Control Plans (DCP). These controls and provisions will remain, and will work in tandem with the new BCA requirements for construction of buildings in flood hazard areas.

The combination of the NSW Flood Prone Land Policy, the Floodplain Development Manual and the provisions applied through the land use planning system, provide a suite of measures related to flood management and mitigation measures, flood warning and emergency responses, land use, development and the appropriate use of materials.

The new requirements of BCA 2013 relating to *flood hazard areas* (FHA) provide a minimum construction standard across Australia for specified building classifications (see below) in FHA up to the *defined flood event* (DFE), and due to these limitations in scope, are not a stand-alone solution to mitigating life safety risk due to flooding.

It should be recognised that flooding can occur beyond the FHA. Additionally, floods larger than the DFE can occur and the scale of the DFE can be variable and could exceed the design parameters and limitations of the BCA provisions (see below).

BCA 2013 overview relating to flood hazard areas

- BCA 2013 contains new Performance Requirements and Deemed-to-Satisfy (DTS) provisions relative to construction in a FHA.
- Volume One, BP1.4 and in Volume Two, P2.1.2 specify the Performance Requirements for the construction of buildings in FHA. They only apply to buildings or parts of Class 1, 2, 3, 4, (residential) and 9a health-care buildings and 9c aged-care buildings.
- These Performance Requirements require a building in a FHA to be designed and constructed to resist flotation, collapse and significant permanent movement resulting from flood actions during the DFE.
- The DTS provisions of Volume One, B1.4 require Class 2, 3 and 4 buildings or parts, and Class 9a and Class 9c buildings in a FHA to comply with a new referenced document, the 'ABCB Standard for Construction of Buildings in Flood Hazard Areas 2012' (the ABCB Standard). (See ** below).
- In Volume 2, similarly, 3.10.3.0 requires a Class 1 building (a single dwelling) in a FHA to comply with the ABCB Standard as a DTS referenced document.
- The ABCB Standard specifies requirements for the construction of buildings to which the BCA requirements apply i.e. building classifications as above, and is limited in application to FHA where the maximum flow velocity is not greater than 1.5metres per second.
- The scope of the ABCB Standard does not include parts of FHA that are subject to mudslide or landslide during periods of rainfall and runoff, or are subject to storm surge or coastal wave action.
- Where the *appropriate authority* is not able to determine the maximum flow velocity, the DTS solution can only apply to inactive flow or backwater areas, which are defined in the ABCB Standard in terms of their flow velocity.
- Where flow velocity exceeds 1.5 metres per second or any other criteria are outside the scope (refer above) of the DTS (i.e. the ABCB Standard), an Alternative Solution must be developed for the construction of a building of the classes to which the FHA provisions of the BCA apply.
- The ABCB has also prepared an 'Information Handbook for the Construction of Buildings in Flood Hazard Areas' (see ** below). This Handbook provides additional information relating to the construction of buildings in FHA, and is not mandatory or regulatory in nature.

** Both the ABCB Standard and the Handbook are available free of charge from the ABCB website at www.abcb.gov.au

Relationship of the BCA provisions to the NSW planning system

- Decisions on flooding matters determined by the *'appropriate authority'* under the NSW planning system, will initially determine the application or otherwise of the new BCA provisions for construction in a flood hazard area. The initial determination will be followed by the limitations of the BCA provisions themselves, as described above.
- Flood planning areas or land at or below the flood planning level, as described in the model local provision for flood planning, or flood control lots for the purposes of section 149(2) planning certificates, would typically correspond with the BCA term 'FHA'. As defined, a FHA is determined by the *'appropriate authority'* that in NSW is likely to be the local council.
Therefore, the BCA provisions for FHA, with its limitations of scope as described above, may not apply to all flood liable land, or to all flood events.
- There are also likely to be areas where flood risk is not known at present, and therefore there is no FHA determined by the *'appropriate authority'*. The BCA provisions do not apply where a FHA has not been determined, as the definition of FHA (see below) hinges on that area being *'...determined by the appropriate authority.'*

Approval processes

• Complying development certificate (CDC)

Where development is proposed on specified types of a flood control lot, a council or accredited certifier may issue a CDC in accordance with the development standards for flood control lots included in the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. These standards are only applicable to housing and relate to a number of issues including the floor height of habitable rooms, flood compatible materials and finishes and being able to withstand flood actions.

A general requirement for complying development is that it must comply with the relevant provisions of the BCA. Therefore, assessment will be required of whether the new BCA 2013 provisions for FHAs apply to the site; and if so, whether the DTS criteria will apply or an Alternative Solution will be required.

• Development approval and construction certificate (DA and CC)

Where development is proposed on land where the flood planning clause within an LEP applies, the consent authority may issue a development consent having considered the provisions of the LEP and DCP relating to flooding. The flood planning clause includes development controls such as ensuring appropriate measures are included in the development to manage risk to life

from flood. DCPs are highly varied throughout NSW, and may include requirements relating to habitable floor levels, fill, appropriate materials and finishes, and utilities.

Following development approval, an application for a construction certificate (CC) will require assessment of compliance with the BCA. The BCA 2013 provisions for flood hazard areas will require assessment of whether the provisions apply to the site and the building classifications; and if so, whether the DTS criteria will apply or an Alternative Solution will be required.

Key BCA 2013 definitions relating to flood hazard areas

Many of the following BCA defined terms demonstrate the inter-relationship of the NSW planning system and the BCA provisions for FHA:

- **Appropriate authority (NSW variation)** - the relevant authority with the responsibility to determine the particular matter. The NSW variation of the definition permits a council or other authority to be considered as the '*appropriate authority*' where relevant. For determining flood hazard matters, the *appropriate authority* may be council, the NSW Government or another authority as appropriate under the NSW planning system.
- **Defined flood event (DFE)** – the flood event selected for the management of flood hazard for the location of specific development as determined by the *appropriate authority*.
- **Defined flood level (DFL)** – the flood level associated with a DFE relative to a specific datum.
- **Flood hazard area (FHA)** - the site (whether or not mapped) encompassing land lower than the flood hazard level which has been determined by the *appropriate authority*.
- **Flood hazard level (FHL)** - the flood level used to determine the height of floors in a building and represents the DFL plus the freeboard.
- **Freeboard** – the height above the DFL as determined by the *appropriate authority*, used to compensate for effects such as wave action and localised hydraulic behaviour.

Further Information

For further information please contact the Department of Planning & Infrastructure's information centre on 1300 305 695.

Department of Planning & Infrastructure circulars are available from:

<http://www.planning.nsw.gov.au/circulars>

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