

Neil Savery
General Manager
Australian Building Codes Board
GPO Box 9839
CANBERRA ACT 2601

via email: resilience@abcb.gov.au

10 July 2014

Dear Mr Savery,

RE: RESILIENCE OF BUILDINGS TO EXTREME WEATHER EVENTS

The Green Building Council of Australia (GBCA) welcomes the opportunity to provide feedback regarding the draft discussion paper on the resilience of buildings to extreme weather events.

The National Construction Code (NCC) plays a vital role in ensuring the integrity of buildings in Australia to preserve the safety of the community and safeguard investment, as well as reducing negative impacts on the natural environment. One of the key impacts of climate change will be the increasing level of risk to the built environment through exposure to extreme weather events. Responsible, contemporary regulation and robust minimum standards will be vital for ensuring that Australia's built environment can better withstand extremes of climate.

About the GBCA

The GBCA is the nation's authority on sustainable buildings, communities and cities. Our mission is to accelerate the transformation of Australia's built environment into one that is healthy, liveable, productive, resilient and sustainable. We work together with industry and government to encourage policies and programs that support our mission. We educate thousands of people each year on how to design and deliver sustainable outcomes for our buildings, communities and cities. We operate Australia's only national voluntary and holistic rating system for sustainable buildings and communities – Green Star.

The GBCA aims to encourage building and community projects to go beyond the minimum standards required by legislation and regulation. Green Star recognises and rewards projects that meet or exceed industry-agreed best practice benchmarks. The GBCA does not play a formal role in ensuring projects registered for Green Star certification comply with minimum standards, but views regulation and legislation as the foundation of good practice, or the baseline, from which we can build.

Green Star

The first Green Star rating tool was released in 2003 in response to market demand for a rating tool that would evaluate the sustainable design and construction of buildings as well as establish a common language for buildings.

The Green Star rating system can be applied to almost all building types. Over 700 projects have now achieved Green Star certification across Australia, with a further 450 projects registered. The Green Star rating system is designed to take an holistic approach within each class and building sector, addressing nine categories in total; Management, Indoor Environment Quality (IEQ), Energy, Water, Materials, Land Use and Ecology, Emissions, Innovation and Transport and defining 'best practice' in each.

A major program of works is currently underway to transform the suite of Green Star – Design and Green Star – As Built rating tools into a single, streamlined rating tool. Green Star – Design & As Built includes a credit which aims to encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters. Points may be awarded under this credit where a project can demonstrate that:

- a project specific climate adaptation plan has been developed in accordance with a recognised standard; and
- solutions have been included into the building design and construction that specifically address the risk assessment component of the adaptation plan.

Green Star - Communities

In 2009, the GBCA began to look beyond buildings to ways to precincts and communities. Green Star – Communities is a rating tool for sustainable developments on a community scale. The Green Star – Communities rating tool contains credits across five categories; Governance, Design, Liveability, Economic Prosperity and Environment, plus Innovation.

The Green Star – Communities rating tool provides guidance and best practice benchmarks which will assist project stakeholders when making decisions about how to make their communities more resilient. For example, the objective of the *Gov-6 Adaptation and Resilience* credit is to encourage and recognise projects that can adapt and are resilient to the impacts of a changing climate and natural disasters. To meet the requirements of this credit, projects must develop a Climate Adaptation Plan and/or a Community Resilience Report in accordance with a recognised standard or guideline.

There are a number of other credits within the Green Star – Communities rating tool which also contribute towards developing more resilient communities including *Env-3 Heat Island Effect*, *Env-8 Stormwater*, *Liv-4 Access to Fresh Food* and, *Gov-3 Sustainability Awareness*. In addition credits such as *Econ-8 Peak Electricity Demand* encourage resilience through rewarding communities for producing their own energy and reducing reliance on existing infrastructure. More information about the Green Star – Design & As Built and Green Star – Communities rating tools is available on the GBCA website at www.gbca.org.au.

Feedback on the draft discussion paper

2. *The NCC covers most natural hazards affected by climate (i.e. bushfire, flood, cyclone and extreme wind. What about other hazards such as hail and extreme heat?*

Extreme heat events will continue to increase in frequency and severity and buildings must be designed to ensure the health and wellbeing of building occupants. Further research into the impacts of extreme heat and other extreme weather events on building materials, such as adhesives and concrete, is also of critical importance.

5. *New buildings account for around 1.8% of total building stock per annum. It takes a long time for NCC changes to have a meaningful impact on a community. Therefore, is the NCC the most realistic means to transition building stock for resilience to extreme weather events?*

Buildings are designed and built for a useful life of 30-50 years or more. While new buildings account for around 1.8% of total building stock per annum, a change to the NCC now, for instance, would directly influence 18% of the market in 10 years, not to mention the influence on upgrades to existing buildings and the flow-on effects to the wider industry as standard practices evolve.

Many industry professionals are aware of the need to design and build to meet the challenges of a changing climate. Rating tools such as Green Star can provide guidance and best practice benchmarks, but transformation of the market also relies on contemporary regulation and minimum standards that are regularly reviewed and updated to provide guidance and to reflect continuous improvements in industry standard practice. Education provided for industry professionals on NCC changes will have a much wider impact than on new buildings alone, and we encourage new skills and knowledge to be adopted broadly.

7. *What is the best strategy for upgrading existing buildings to adapt them for more extreme weather events?*

The GBCA is a member of the Australian Sustainable Built Environment Council (ASBEC), the peak body of key organisations committed to a productive and sustainable built environment in Australia. In 2012, ASBEC released the *Built Environment Adaptation Framework* which urges the Australian Government to act quickly to improve the adaptation of the built environment (both new and existing buildings and infrastructure) to the effects of a changing climate, through initiatives to:

- engage with industry
- lead by example
- sponsor applied research
- provide better access to information and tools
- invest in education
- provide incentives
- reform and improve regulation
- review building codes and standards
- improve planning systems and outcomes
- improve insurance and financial services.

In relation to reviewing building codes and standards, ASBEC recommended that the Australian Government:

- regularly review the content of the NCC and its supporting standards to address climate change adaptation issues
- improve the financial and logistical capacity of current building regulation and standards development processes to keep up to date with research and to ensure that potential climate change risks are continuously being addressed
- reinforce the need for performance based approaches to building regulation to encourage innovations in products, building techniques, and design

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- ensure through rigorous cost/ benefit analysis processes that any changes to building regulations are reasonable, necessary, and cost- effective, and appropriately value climate change adaptation.

The *Built Environment Adaptation Framework* is available on the ASBEC website at www.asbec.asn.au.

10. *Is there sufficient data/research available to justify NCC changes in accordance with the IGA and COAG Principles of Best Practice Regulation?*

While the GBCA agrees that it is not the role of the Australian Building Codes Board (ABCB) to collect data to predict future weather events, considerable research and robust data already exists in Australia for a range of climate change and extreme weather impacts, particularly in the areas of sea level rise and changing temperatures. Work on how the NCC could address these impacts should be undertaken without delay while research continues in other areas.

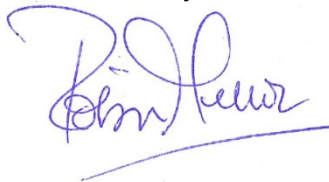
12. *Are there more appropriate alternatives to the NCC dealing with resilience of buildings and structures for extreme weather events?*

A range of complementary measures will be required to ensure that Australia's built environment will meet the challenges of a changing climate. As mentioned previously, voluntary rating tools such as Green Star will play an important role, but contemporary regulation and robust minimum standards are necessary for changing and improving standard practice. The provision of minimum practice guidelines should also be considered while changes to the NCC are considered and implemented. Please also refer to the response to Question 7.

The GBCA commends the ABCB on this public consultation as an important step towards an NCC that will assist in safeguarding Australia's built environment for the decades ahead. Urgent action is required if we are to minimise the impacts of climate change on the Australian community and deliver long-term economic, environmental and social sustainability.

The GBCA welcomes the opportunity to work with government and industry to improve the resilience of our built environment, and highlights the need for a range of measures including voluntary tools, contemporary regulation, private sector education and collaboration with financial institutions to improve the resilience of Australia's built environment. Please do not hesitate to contact me should you require any further information, or to arrange further consultation.

Yours sincerely



Robin Mellon
Chief Operating Officer
robin.mellon@gbca.org.au