Submission to the Queensland Floods Commission of Inquiry

From the Queensland Board for Urban Places.

The following submission has been prepared by the Board for Urban Places (the Board) in response to the call for submissions to the Queensland Floods Commission of Inquiry. The Board is particularly focused on two key points in the Terms of Reference for the Commission:

1. All aspects of land use planning through local and regional planning systems to minimise infrastructure and property impacts from floods.
2. Any legislative changes needed to better protect life and property in natural disaster events.

The impacts of the 2010/2011 floods are significant and widespread, and in many cases directly attributable to previous local and regional urban planning decisions. We now have a once-in-a-generation opportunity to learn from the past by rationally reconsidering the planning and design of our urban places in order to protect Queenslanders' future.

The Board recognises that the immediate and urgent task of clean-up, remediation, and the provision of accommodation for flood affected residents and businesses rightfully takes the highest priority. However the important long term task for Queensland is to identify climate and 'place-appropriate' options for the design and procurement of urban development in Queensland. The Board will continue to work with the Queensland Reconstruction Authority to address these issues.

The Board's "A Charter for Queensland Places", outlines seven key principles to guide the making of successful Queensland places to benefit and sustain Queensland and its people. Five of the seven principles are considered particularly relevant for the process of recovery from Queensland's floods. These principles provide guidance and frame the Board's recommendations for the flood recovery process.

Principle 1: Our places are shaped by design, by our shared responsibility, and by management

The world's best cities value, and are responsive to, their natural landforms and environments.

We must seek a balance between engineering responses which seek to 'defend' the city, and a cultural response which accepts floods and builds community preparedness and resilience.

While there are many good examples worldwide of engineering responses employed by cities to protect against floods (dams, flood walls, levees etc) such solutions can be costly, may have negative environmental impacts, and can sometimes make it difficult to achieve good places for people. The flood damage has made it clear that:

- Some building types are inappropriate to their context and our conditions. Buildings should not be replaced 'like for like'. Post flood review and reconstruction offers a huge opportunity to reconsider appropriate building and development typologies. Sensible building design for our particular conditions, better able to withstand the impacts of flood, should be investigated and documented, and supported by amended local Council codes. An example of this could be the wider use of open ground floor areas, or designs which allow for flood waters to flow through unimpeded. This can also provide better ventilation and solar amenity in our sub-tropical climate.

- Critical pieces of community and economic infrastructure (for example, community facilities, schools and the Rocklea markets) were substantially damaged during the

2010/2011 floods. This is a serious issue which needs to be urgently addressed at both the large (urban planning) scale, and the small (precinct and building design) scale.

- New purpose-built designs which are capable of adapting or mitigating against future events should be sought, and could act as a demonstration project for other structures to be located in flood areas. Possible uses for these new designs include multi-use sports halls or community facilities.

- While people want to enjoy the water's edge, in Brisbane we have discovered that waterside infrastructure can turn into destructive water-born missiles. Byron Bay has mandated that houses built along their coastal edge need to be able to be dismantled within 24 hours. We should consider taking a lighter touch to our waterside public infrastructure (such as jetties, pavilions, boat clubs etc.) and designing it to be modular and able to be dismantled and temporarily removed.

Recommendation:

- Ensure the recovery process employs a balanced approach which includes cultural responses aimed at accepting floods and building community preparedness and resilience.
- Reconsider appropriate building and development typologies which are better able to withstand the impacts of flood. These should be investigated and documented, and supported by amended local Council codes.
- Address the issue of critical community infrastructure being damaged during flood events through planning mechanisms as well as design mechanisms. This could include demonstration projects to explore new purpose-built designs.
- Consider designing waterside public infrastructure so that is can be dismantled and temporarily removed when required.

Principle 2: Our places value our natural landscapes and water bodies

Interconnected natural landscapes and water bodies in our settlements contribute to urban amenity, to flood awareness, and to flood mitigation. Urban consolidation is the current planning policy for Queensland. But what is the cumulative impact of inappropriately located urban consolidation in a form which creates a random and significant increase in the amount of impervious urban footprint as it is occurring in South East Queensland?

There is an opportunity to undertake flood recovery in parallel with a long-term strategic approach to rationalising the amount of impervious urban footprint and increasing the amount of open space.

Recovered open space in urban centres could serve multiple purposes of improving biodiversity and reinstating riparian corridors, linking existing areas of open space, and improving the effectiveness of creeks and overland flow paths for storm water runoff thereby mitigating some future flood impacts. This opportunity exists, for example, in areas like the flood plain areas of Milton and Rosalie, linking 'green corridors' through to the Governors Residence, up to the Taylor Ranges.

Recommendation:

- Investigate opportunities to rationalise the impervious urban footprint relative to absorptive open space, while also improving biodiversity, connectivity, and reinstating riparian corridors.

Principle 3: Our places embody our values and uniqueness

Queensland places have unique cultural, climatic and physical characteristics. When understood and respected, these local characteristics can inform appropriate planning and design mechanisms to:

- build the preparedness and resilience of flood prone communities;
- harness a range of place-making opportunities through projects which seek to retain local character while embedding the flood history of a place into the character of an area; and
- provide visual links to the flood history of these places through the use of interpretive cultural and physical records of flood action and impacts including: new building typologies, flood markers, and landscape architecture responses.

These place-sensitive planning and design responses could help to create a richer urban experience, as well as increasing community preparedness through expectation, knowledge and memory.

Recommendation:

- Consider options for place-sensitive planning and design responses which provide interpretive cultural and physical records of flood action and impacts to improve the preparedness and resilience of flood-prone communities.

Principle 4: Our places are for and about people

Healthy communities for people benefit from shared community identity, and community gathering places. During the floods, community centres/gathering places become key foci not just for distributing help and resources but also as very important places for community bonding, exchange and support. The importance of these places both functionally and socially in flood events is very high. A comprehensive neighbourhood-by-neighbourhood review needs to occur to ensure that each community that may be affected has facilities that can provide emergency relief at a functional level, but is also designed as a place that can support community interaction and community's efforts to help one another during times of flood

Over the medium term, these community centres could act as a tool for supporting those badly affected communities whose residents have had to find alternative accommodation and therefore become geographically dispersed. Community centres can help to facilitate significant local changes to flood affected areas by providing support for residents and retaining a sense of community.

With climate science forecasting more frequent and more severe weather events and sea level rise, the Board recognises that many Queensland places may be subject to greater flooding in future. The Board understands that the current policy is to base minimum floor heights of buildings throughout Queensland on the Q100 flood level. The appropriateness of Q100 as the common policy base should be reviewed in light of the 2011 flood event, with consideration given to applying a case-by-case assessment of proposals within flood plains.

Through sensible planning, we now need to ensure that new development in Queensland is not left vulnerable to isolation due to natural disasters, by carefully considering development locations and access routes. In addition, an examination of these access and evacuation options should inform new and existing infrastructure.

On a more detailed scale, there are a number of possible actions that may make places which are at risk of flood are safer for those people who live there.

- Consideration of a requirement for the development of a flood evacuation procedure for high rise developments. This could be part of development approvals for new development.
- Review of design codes to ensure critical infrastructure such as electricity substations/switchboards are neither allowed, nor required to, be located in basements of buildings in flood areas.
- Examination of current maintenance systems and effectiveness of stormwater non-return valves in basements.

Recommendation:

- Undertake a neighbourhood-by-neighbourhood review of the provision of appropriate community centres/gathering places which are able to provide support to

communities during events (accommodation, resources etc), as well as after-the-event to facilitate change while retaining a sense of community.

- Review the Q100 flood level, and the appropriateness of applying Q100 as the acceptable solution for floor levels.
- Ensure development has multiple points of access, and that such routes are protected from natural disaster (flood, fire etc).
- Review and, where appropriate, implement site-based detail design actions aimed at improving safety for building occupants.

Principle 5: Our places are ecosystems that we respect and nurture

Queensland's settlements can be planned and designed to better value, respect and nurture their underpinning natural landforms and interconnected ecosystems. There are a number of current planning and regulatory issues which should be addressed to protect our ecosystems from serious environmental damage caused by floods. For example the location of Environmentally Relevant Activities (ERA's) (especially those involving paint or chemical storage) in watersheds and flood plains is an unacceptable risk (despite current policies which govern the storage and management of contaminants on-site).

Environmental impacts resulting from run-off of contaminants from ERA's should be carefully studied, and amendments (both current and retrospective) to the land-use policies which govern the location of such facilities be considered to ensure they do not pose a temporary or permanent risk to catchments and the wider ecosystems.

Recommendation:

- Undertake research into the environmental impacts resulting from run-off of contaminants from ERA's, and propose amendments to the land-use policies which govern the location of such facilities.

Conclusion

The direct evidence of the devastation of the floods has delivered a wake up call to Queensland.

Clearly we cannot responsibly continue with many previously accepted urban development and design patterns. Those precincts and structures which were most damaged, and which therefore caused most human suffering, were those which were not designed for our particular conditions.

We have an unprecedented opportunity and obligation to seriously reconsider and address urban design, development and building and infrastructure in Queensland.

This must be done carefully, with every instrument at our disposal, in the clear light of our recent experiences and understanding our particular conditions and climate.

Thus we can develop uniquely Queensland places with all the social and economic benefits that will confer, to sustain us into the future.

The Board for Urban Places is an independent advisory Board for the Queensland Government, intended to champion high-quality urban design and help foster a holistic approach to land use and infrastructure planning to create vibrant and adaptable urban places for people in Queensland. The Board is composed of 23 specialists from disciplines such as architecture, urban design, planning, sustainability, social and cultural policy, economics and transport. The Chair of the Board is Philip Follent, the Queensland Government Architect.