



ENGINEERS
AUSTRALIA

Att: Don Rivers
Building Industry and Policy
Cyclone Shelter Discussion Paper
Department of Housing and Public Works
GPO Box 2457
Brisbane QLD 4001

Via email: BIP@hpw.qld.gov.au

28 July 2017

Dear Don

Engineers Australia and its members have an interest in improving the effectiveness and efficiency in the planning, construction and ongoing management of the states assets. We are pleased to be able to contribute to this discussion paper and have drawn on feedback from members in areas affected by cyclones (Queensland, Western Australia and the Northern Territory).

About Engineers Australia

Engineers Australia is the peak body for the engineering profession. We are a member-based professional association with over 100,000 individual members. Established in 1919, Engineers Australia is a not-for-profit organisation, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

Cyclone Shelter Discussion paper feedback

Whilst it was identified that many of the specific questions in the discussion paper seemed to be directed more to building surveyors and certifiers than engineers, the following feedback is provided for consideration.

1. 3rd party engineering verification should be required for cyclone shelter designs.
2. Mandatory inspections are recommended to be separated from the builder's responsibility and transferred to a governing body/building owner.
3. The disconnect within and between the design, construction and in-service stages of the cyclone shelter life needs to be addressed
4. How is failure of adjacent structures dealt with?
5. The structural engineering documentation should include specification of fixings and fixing spacings preferably in a diagrammatic form for the roofer. It is recommended that this specification be verified to ensure it is specific to V10,000 wind pressures

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6. Terrain Category classification is important for determining design wind speeds and guidance should be provided that foliage cannot be relied on for this classification.
7. Purlin spacings and the design and specification of roller doors/roller door supports should be key areas of 3rd party verification for the design and key areas checked during inspections
8. Attention should be paid to areas where water ingress could occur – gutters, flashings, windows etc. as leaks could lead to harm of building occupants
9. Consideration should be given to adding reference to third party certification of steel fabrication to meet the requirements of AS/NZS 5131 Structural Steelwork - Fabrication and Erection. Suggested wording for the contract documents is *“All fabricated structural steelwork specified for this project must comply with Australian Standard AS/NZS 5131 Structural Steelwork - Fabrication and Erection. The project documentation must also nominate the appropriate Construction Category in accordance with AS/NZS 5131. All structural steelwork must be fabricated by fabricators certified under the ASI ‘National Structural Steelwork Compliance Scheme’ (NSSCS) (see <http://www.scacompliance.com.au>) operated by Steelwork Compliance Australia (SCA) for the construction category(s) defined in the project specification. All tenderers (fabricators) must have documented current evidence of having fulfilled ‘Stage 1’ of the SCA certification process, including a gap analysis of the necessary actions to meet the required Construction Category. The successful fabricator(s) must submit documentary evidence of current full certification to the relevant construction category before work commences on the project. The certification must be maintained for the duration of the project.”*
10. Risk of isolation in larger events should be incorporated into the code (vehicle access)
11. Consider including discussion of planning evacuation routes for public access to the shelters
12. Consider expanding on the discussion of cyclone storm tide resistance in the design of the shelters. For example the shelter should ideally be placed above the storm tide level, but if this isn't possible then maybe the shelter should be two level with the lower level open to allow the storm tide pass through. In the latter case the shelter might be inaccessible during the storm tide.
13. The assessment of the suitability of the cyclone shelter should be conducted by Local Government. Local Government can use building assessors who will in turn refer to National Construction Code (NCC), Building Code of Australia (BCA) and referenced Australian Standards.
14. It is considered that a “new” offence is not needed. Engineers Australia considers that the existing regulations are adequate and should be enforced by Local Government.

Conclusion

This submission has been prepared by Engineers Australia with support from representatives from a number of the organisation's technical and regional groups, and includes input from our Western Australian, Queensland and Northern Territory Divisions.

Engineers contribute significantly to the community in the regulation, planning, design, construction, maintenance, operation, monitoring, management and assessment of resources and infrastructure. Engineers provide these services while meeting clear ethical responsibilities to the Australian community.

We look forward to working collaboratively with government and would welcome the opportunity to provide further input and contribute to the discussion as this progresses.

Yours sincerely

A handwritten signature in black ink, appearing to read 'SR', with a stylized flourish extending to the right.

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