

AUSTRALIAN BUILDING CODES BOARD



PERTH CORONERS COURT

07 OCT 2015

RECEIVED

Coroner's Court of Western Australia
Level 10
Central Low Courts
501 Hay Street
PERTH WA 6000

Level 12
SAP House
Cnr Bunda & Akuna Streets
Canberra ACT 2601
GPO Box 9839
Canberra ACT 2601 Australia
Phone: 1300 134 631
Email: abcb.office@abcb.gov.au
Web: www.abcb.gov.au

Attention: Ms Dawn Wright
Listings Manager
Office of the State Coroner

Dear Ms Wright

I refer to your letter of 21 August 2015 advising that the State Coroner has completed the Inquest into the circumstances surrounding the two deaths that occurred as a result of Tropical Cyclone George in 2007. You also enclosed a copy of the State Coroner's Finding and drew attention to the Recommendation on page 121.

On page 121, the State Coroner recommended that the ABCB explore methods by which a large scale electronic map that is prepared in accordance with the smoothed coastline and the delineated wind regions be made accessible through the Web. This map is to be updated if and when the Australian Standards change the delineated wind regions.

The ABCB has explored the potential for the preparation of the suggested large scale electronic map, in consultation with a number of building certifiers, engineers and State/Territory administrations, particularly those located in regions where cyclones are prevalent. The matter was also considered at a meeting of the Board held on 17 September 2015. The consultation has identified a number of relevant issues and the ABCB wishes to raise the following matters in response to the Recommendation.

Most natural hazards in Australia covered by the National Construction Code (NCC) require some level of mapping (e.g. wind, flood, earthquake, bushfire, rainfall and snow). In addition, the NCC energy efficiency provisions and corrosion protection provisions rely on identified zones. A number of these maps are specified in Australian Standards or identified by local or state governments.

B u i l d i n g A u s t r a l i a ' s F u t u r e

The maps in standards and the NCC don't usually go to sufficient detail to determine, for example, whether an individual building is in or out of a zone. It is often the responsibility of the relevant local government to determine this or if they do not, it would be the responsibility of the designer (engineer, architect etc.) to make a determination in the first instance and for the approving authority (i.e. the local government or building certifier) to make a final decision.

The regional wind maps that provide the boundaries for wind regions first appeared in AS 1170.2 – 1975, but only showed cyclone regions. The maps were updated in AS 1170.2 -1989 and provided a regional wind system for the whole of Australia plus new cyclone regional boundaries. So the maps in some form or another have been in existence for approximately 40 years and it appears that for all this time local governments and/or designers have managed to apply the wind maps from the various editions of the standard.

Identifying the appropriate wind region is only the first step in determining the relevant design wind speed for an individual site. The other steps are determining the appropriate terrain category, the topography, and the shielding. All these steps are critical in determining the correct design wind speed for an individual site and all require a level of judgement. In addition, once the design wind speed is established, it is necessary to calculate the applicable wind force and other factors such as the relevant internal and external pressure coefficients. Therefore, to arrive at the appropriate wind forces acting on a building, there are many discretionary decisions that need to be made by the engineer or building designer. Identifying the appropriate wind region is probably the simplest of these.

On page 121 of the State Coroner's Findings it is acknowledged that "current practice is for the ascertainment of wind regions by reference to the delineations on the maps of Australia that form part of the Australian Standards referenced in the Building Code of Australia, requiring the transfer of that information onto a larger map, or by reference to a Google map."

The ABCB has consulted with a number of building certifiers, engineers and State/Territory administrations to ascertain common industry practice used to determine the appropriate wind regions when using AS/NZS 1170.2. The consultation supports the State Coroner's identification of current practice as mentioned above (i.e. designers commonly use Google maps which provide a suitable scale and have a distance calculation function). If a particular site is close to the wind region boundary, designers have advised that they usually err on the side of caution and choose the more severe category. By using these tools, it appears that by and large, engineers and other designers find it reasonably simple to identify the appropriate wind region.

Identifying the "smoothed coastline" can, however, sometimes be an issue, so the ABCB proposes to request the Standards Committee responsible for AS/NZS 1170.2 to provide further information in the standard on how to establish the smoothed coastline.

In summary, the ABCB has explored the potential for the preparation of a large scale electronic map accessible through the Web, has consulted with industry representatives and concludes that this information is readily available on Google maps and is commonly used by designers and approval authorities.

Therefore, the ABCB does not consider that it is necessary for an additional electronic map to be developed, which if it were to be would not be undertaken by the ABCB, which does not have a mapping capability for the purpose identified. The ABCB will, however, request the Standards Committee responsible for AS/NZS 1170.2 to provide assistance in the standard on the correct method of determining the smoothed coastline.

I trust that the above information adequately addresses the Recommendation on page 121 of the State Coroner's Findings.

Yours sincerely

Neil Savery
General Manager

1 October 2015

Copy to: Executive Director WA Building Commission