

ENGINEERING REPORTS

Our Reference: 207201

1 April 2015

**Ken Holloway
15 Range Place
BULLI NSW 2516**

Dear Ken,

Re: Surveyor Apex Lifeguard Tower

Further to your instructions we have reviewed brochures of the above lifeguard tower in conjunction with working drawings, supplied, and advice regarding steel used in its construction. We have also inspected one of the Surveyor JR towers at Bronte beach near Sydney.

It is our understanding that you are seeking an Engineering opinion regarding the structural suitability of this type of lifeguard tower for use in coastal situations with some reference to Work Health Safety matters.

We have further assessed the affects of wind loadings on this type of tower, in accordance with AS1170.2:2011 Structural Design Actions, Part 2 – Wind Actions. With respect to the affects of wind we have based our analysis on Regions A1, A2, A3 and A5, as defined in AS1170.2:2011, which covers the coastal areas of Australia south of Corinda (about 30km north of Coffs Harbour) in New South Wales and south of Green Head (about 230km north of Perth) in Western Australia as well as Tasmania.

Our analysis includes a structural check of key components as well as a check of the stability of the structure in winds up to the 1 in 50 year wind.

The base of the structure consists of hot dipped galvanised mild steel 1020 angle sections which comply with AS1443 – Carbon and Carbon – Manganese Steel. The deck and cabin of the tower, which is mounted on the base, is constructed of fibreglass and has tinted windows. The deck rails and ladder are constructed of stainless steel. Stainless steel bolts are used throughout the structural components of the tower.

We have undertaken structural calculations in accordance with AS4100 Steel Structures code to assess the structural adequacy of the tower.

The tower has lockable fibreglass shutters on all doors and windows and the tower cabin is fully lockable. Windows are tilted downward at an angle of 15 degrees, in accordance with international Work Health Safety guidelines, to minimise glare and to minimise build up of slat and moisture on the windows.



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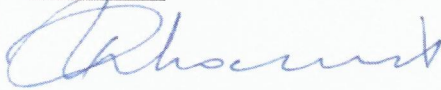
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The steps from the deck to ground level are configured to facilitate a quick dismount from the deck in times of emergency and rails are provided to assist in climbing of the stairs.

Having regard to the foregoing and with reference to our structural checking we find the Survey of Apex Lifeguard tower to be structurally adequate for its intended purpose and stable during winds within the limits described above.

Yours faithfully

LandTeam



Peter Lockhart

B.E., M.I.E. (Aust), N.P.E.R-3