

Greening the Red Zone: Red Zone Dark Sky Park Committee

Submission to Regenerate Christchurch

concerning the Red Zone Futures exhibition

Artificial light at night has had a destructive influence on the environment throughout the world, especially to urban environments which are bathed in light 24/7. This is harmful for all species, including plants and animals. Blue light at night is now known to be a health hazard for humans, leading to an increased risk for some cancers, and to hormone disruption, especially of melatonin. This has caused our circadian rhythm to be disturbed, leads to poor sleep patterns, increased stress and contributes to obesity. Nocturnal species, such as ruru, are especially adversely affected by artificial light at night.

The Christchurch Long Term Plan calls for the replacement of all street lighting in the city to LED lighting. But we are especially anxious to see that the river Red Zone of Christchurch, whatever use the land is put to for recreation or sports facilities, is lit sympathetically with low colour-temperature LEDs. We advocate a colour temperature of no more than 2700 K for the river Red Zone. The Red Zone Dark Sky Park committee has issued a Mission Statement concerning any lights in the Red Zone. Page 7 of the Mission Statement lists seven key principles that should be adopted in the Red Zone. Most of these principles also apply throughout the city. These good lighting principles are:

1. The lights should be full-cut-off, with no light shining at or above the horizontal. This requires luminaires to be mounted horizontally with zero tilt.
2. Only low colour temperature light-emitting diode (LED) lights should be used, with Tcol = 2700 K or less.
3. Lights should be attached to motion sensors so they are off when motion from nearby people is not detected or at reduced illumination levels when traffic densities are low.
4. Flood-lighting should be prohibited.
5. Light sources should not shine into buildings near the Red Zone.
6. Light sources should not be directly visible but only illuminate a scene to provide adequate security at night. Glare destroys dark adaptation and reduces visibility.
7. Light bollards should be used wherever possible to illuminate paths, rather than lamp-posts.

We were disappointed that the Regenerate exhibition for the future River Red Zone development made no mention of lighting, in spite of our previous submissions. We emphasize that poor lighting practices have contributed adversely to human health and environmental outcomes. We refer Regenerate and the CCC to a new Royal Society of NZ factsheet on the 'Impacts of artificial blue light on health and the environment' (see <https://royalsociety.org.nz/major-issues-and-projects/> after late July 2018)

John Hearnshaw

Chair, Red Zone Dark Sky Park committee

14 June 2018