

Timber and Green Building Rating Systems

There are several rating systems that assess the environmental performance of buildings and construction. These include green building rating systems like Green Star and infrastructure rating systems such as the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability rating scheme.

Environmental Rating Systems and Timber

Environmental rating systems provide a way for buildings and infrastructure to have their environmental benefits rewarded and to have innovative and forward-thinking designs acknowledged as best in class. Rating systems often provide credits for using timber, or for the benefits that timber can provide. There is recognition in rating tools for timber, including: sawn timber, engineered timber, recycled, and certified timber, as a substitute to higher embodied energy materials.

The Green Building Council of Australia administers the Green Star rating system. The Green Star rating system provides formal environmental ratings for buildings, interiors and precincts for design, as-built and in-operation performance.

It includes materials credits for using timber that is 95 percent recycled or certified. **Green Star awards credits for reducing life cycle impacts and timber products have demonstrably lower life cycle impacts than concrete and steel products.** The use of timber can gain credits relating to the use of sustainable products and responsible building materials. Timber also contributes to credits for indoor air quality, as timber does not produce volatile organic compounds like other more processed materials and timber has good acoustic properties that promote acoustic comfort.

In addition, as of 1 July 2017, there are now a further three Green Star credit points available based on the reduced life cycle impacts of structural timber (credit 19B.4). To qualify for points in this credit, it is necessary to meet the following minimum requirements: **19B.4.0 Responsible sourcing** (all structural timber in the building must be responsibly sourced (i.e. certified)); and **19B.4.1 Reduced embodied impacts** (up to three points are available where the building is constructed from the following proportion of structural timber – one point for 30 percent gross floor area (GFA), two points for 70 percent GFA or three points for 90 percent GFA.)

Quick Facts

1. Rating systems provide an easy way to gauge the sustainability of a building. Often an incoming tenant will require a particular Green Building Rating level.
2. The most popular rating system in Australia is Green Star, operated by the Green Building Council of Australia. As of May 2018, there were over 1700 Green Star rated projects certified.
3. Some rating systems assess the life cycle impact of the materials used. Comparative life cycle assessments of buildings demonstrate timber's lower overall environmental impact compared to alternative materials.
4. The indoor comfort credits of the Green Star tool recognise responsibly-sourced, certified timber through measures of aesthetics, air quality and acoustic benefits.
5. The materials, noise and waste credits of the Infrastructure Sustainability rating scheme rewards the use of responsibly-sourced, certified timber in infrastructure projects.

The Infrastructure Sustainability Council of Australia's Infrastructure Sustainability rating scheme rates infrastructure projects across a range of industries, including transport, water, energy, and communications.



Figure 1 ISCA infrastructure rating system

It rewards infrastructure projects that have a low carbon footprint, reduced on-site noise during construction and reduced on-site waste. This rating system rewards building with timber as timber has low life cycle impacts, reduced noise pollution during construction, and is recyclable. Building with prefabricated timber results in a much quieter construction site and reduced onsite waste.

Further Reading

Green Building Council of Australia, 2015. Green Star Available at: www.new.gbca.org.au/green-star

Infrastructure Sustainability Council of Australia, n.d.. *IS Overview*. [Online] Available at: isca.org.au/is-rating-scheme/about-is

University of Wollongong, 2018. Sustainable Buildings Research Centre. Available at: www.sbrc.uow.edu.au/sbrcbuilding/

Wood Solutions, 2017. *Maximise Green Star Ratings*. [Online] Available at: www.woodsolutions.com.au/articles/maximise-green-star-ratings

Case Study — Sustainable Buildings Research Centre, University of Wollongong

The Sustainable Buildings Research Centre, has been awarded a six star green star rating – Education design, and is working towards receiving Living Building Challenge certification. The design, construction, and operation of the building all meet high sustainability credentials. These include the natural ventilation, passive design, renewable on-site energy generation, management of waste, and use of recycled materials particularly timber in the construction and internal fit out. This multi-disciplinary facility hosts a wide range of research and industry collaborations to address the challenges of making buildings sustainable (University of Wollongong, 2018)



Figure 2 Exterior of the Sustainable Buildings Research Centre (Image courtesy of University of Wollongong)



www.timberqueensland.com.au