



Green Star – Communities rating tool

Earn Green Star credits with BlueScope Steel



BlueScope Steel. Right for Green Star – Communities.



About the GBCA and Green Star buildings

The Green Building Council Australia (GBCA) is a national, not-for-profit organisation established to develop a sustainable built environment in Australia. The GBCA encourages sustainable building through their Green Star ratings system, as well as a range of training and education programs.

Green Star is a comprehensive, voluntary rating system designed to evaluate the environmental impact of design and construction. In this system, a building project is assessed across a number of categories. Points are allocated if specific benchmarks are met in areas such as energy, water, land use, materials, internal environment quality and innovation. In a formal assessment process, these points are used to calculate a project's final Green Star rating.

In recent years, the commercial property market has come to value GBCA Green Star rated buildings for their advantages in occupant health, satisfaction and productivity, as well as cost savings in areas such as energy consumption. Virtually all new, high-profile, commercial building projects in Australia now aim for a 5 or 6 Green Star rating.

The rating score is expressed as:

- ◆◆◆◆◆ **4 star – Best Practice (45-59 points)**
- ◆◆◆◆◆◆ **5 star – Australian Excellence (60-74 points)**
- ◆◆◆◆◆◆◆ **6 star – World Leader (75+ points)**

Projects that score less than 45 points do not receive a rating.

The Green Star – Communities



Green Star – Communities is a rating system designed for residential, industrial or mixed use communities. It supports the development of communities, precincts and neighbourhoods that prioritise environmental sustainability.

This can include minimising energy and water consumption and reducing dependence on motor vehicles. The ratings tool also recognises broader issues such as community health and wellbeing.

To encourage new approaches in community projects, additional points can be gained for innovation.

Within these categories, a total of 38 best-practice credits are used to determine if and where points can be allocated. As in other GBCA Green Star tools, these points are used to calculate a project's rating (4, 5 or 6 Green Star).

Sustainability is evaluated in five categories. These are:

1. Governance
2. Design
3. Liveability
4. Economic prosperity
5. Environment

In addition there are minimum point scores per category ensuring any star rating achieved has addressed every category resulting in a more holistic result.

The GBCA website (www.gbca.org.au) includes comprehensive information about the Communities ratings tool and education programs.

Using BlueScope Steel products to earn Green Star credits

BlueScope Steel products feature in many award winning sustainable buildings. They are chosen for qualities such as high strength-to-weight ratio, long life, high solar reflectivity, ability to handle extreme weather events, flexibility in areas such as design and offsite fabrication, reusability and recyclability.

These qualities are backed by company advantages such as total supply chain transparency, ISO 14001 EMS (Environmental Managements System) certification and membership of the World Steel Climate Action Program.

The GBCA acknowledges these qualities in sustainable building, using them as best practice benchmarks in Green Star.

Following are some examples that show how BlueScope Steel products can earn Green Star credits for your community project.



Example 1

Environmental Category Credit ENV 3: Heat Island Effect

The issue

The Heat Island Effect describes the higher temperatures that occur in urban areas. It is caused by the replacement of vegetation with built structures (and their roofs in particular) and surrounding hard surfaces (roads, footpaths) which in combination warms the local environment. Warming is greater if non-reflective, high-mass materials are used. Warming can cause greater energy consumption particularly in peak demand and can cause human comfort and health issues in heat waves.

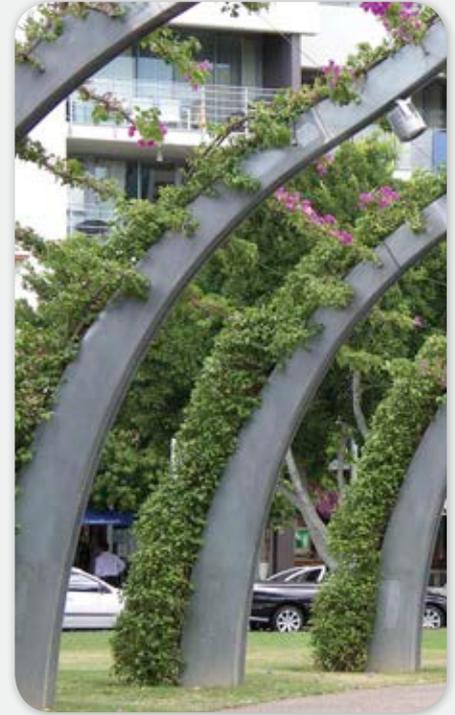
In addition, this in turn can create warm inversion layers in the air above cities, trapping toxic chemicals and increasing the potential for smog.

The amount of solar radiation that a surface reflects and emits is called its Solar Reflective Index (SRI).

Earning points by helping to mitigate this problem

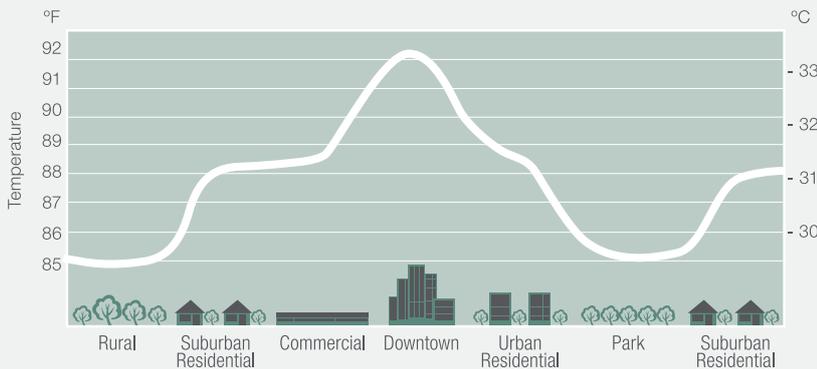
Credit ENV-3 Heat Island Effect aims to reduce the amount of solar radiation absorbed by a building and its surrounds. One point is awarded if at least 50 per cent of the site area (in plan view) comprises one or a combination of the following:

- vegetation
- roof materials with a minimum solar reflective index (SRI) greater than 78
- unshaded hardscape with an SRI greater than 29
- water bodies and water courses.



BlueScope's steel can be used to create beautiful and innovative structures to seasonally shade the heat absorbing surfaces of community walkways and thoroughfares and can also be integrated into creative landscape designs to increase vegetation density.

Urban Heat Islands (UHI) – Cities up to 5.6°C warmer



Source: United States Environmental Protection Agency (EPA) (2008) Heat Island Effect. EPA. Last Accessed July 9 2008. <http://www.epa.gov/heatisland/about/index.html>

COLORBOND® steel – the right choice in meeting this benchmark

The high solar performance (high SRI) of COLORBOND® steel with Thermatech® technology helps mitigate the Heat Island Effect by reflecting solar radiation away from a building, rather than allowing it to contribute to urban heat. (This also reduces the need for other forms of cooling.)

COLORBOND® steel colours Classic Cream™, Surfemist® and COLORBOND® Coolmax® in Whitehaven® all meet the GBCA benchmark for roofing material with a Solar Reflective Index greater than 78, earning one point in this category.



Colorbond®

Whitehaven®

Surfemist®

Classic Cream™

Example 2

Environmental Category Credit ENV 6: Green Buildings

The issue

The manufacture, transport and use of some building materials can have a significant negative effect on the environment. Practices such as manufacturing without strict environmental controls and transporting long distances are unsustainable due to high consumption of resources and emission of pollutants.

In addition, the use of low strength materials means more resources are consumed, and more transport emissions are created for a given building purpose, when compared with lighter, high strength materials.

Therefore Credit ENV-6 – Green Buildings aims to encourage Green Star rated buildings within the community or precinct.

Earn points by specifying sustainable materials in Green Star Buildings tools

Steel products earn credits directly in the Materials 6 Credit category. Two points are available if the following criteria is met:

- **Responsible manufacturing – mandatory criteria.** Manufacturers are required to have a valid ISO 14001 Environmental Management System in place and be a member of the World Steel Climate Action Program.
- **Reducing the amount of material required.** One point is available. With it's high strength-to-weight characteristics, steel allows you to use less material for a given purpose. (This approach is known as de-materialisation.) Minimum strength specifications and minimum requirements are listed for various steel products in the Materials 6 Credit.
- **Sustainable Fabrication.** One point is awarded if the steel fabricator is a member of the Australian Steel Institute Environmental Sustainability Charter (ESC).



Why BlueScope Steel is the right choice for this credit

The right manufacturing standards

As a proud Australian manufacturer, BlueScope Steel's facilities at Port Kembla in NSW and Westernport in Victoria both have ISO 14001 EMS accreditation. We are also an accredited member of World Steel Climate Action – a program established by the World Steel Association.

BlueScope Steel supports the Australian Steel Institutes initiative in developing the ESC for fabrication and addressing supply chain environmental improvement.



The right product qualities

The Green Star Buildings Materials 6 Credit stipulates strength requirements for various types of steel products. BlueScope Steel products meet the minimum strength requirements for category A products and the high-strength steel requirements for category B products, i.e.

- Cold formed sections made from BlueScope Steel hot rolled coil and 350 grade XLERPLATE® steel) can earn one point.
- COLORBOND®, ZINCALUME® and GALVASPAN® steels meet GBCA minimum strength requirements.
- TRUECORE® steel framing meets minimum strength requirements.
- BlueScope Steel decking, purlins and girts meets minimum strength requirements.



If COLORBOND® is being used to earn credits in Green Star – Communities, ENV-3, TRUECORE® steel framing is the right support structure. This combination provides strength, low weight and security against extreme weather events.

Xlerplate® Colorbond® Zinalume® Galvaspan® Truecore®

Earning credits in other categories with BlueScope Steel products

BlueScope Steel products can earn points in many categories of Green Star – Communities. The following table shows some additional examples that could help your project achieve Green Star status.

Category	Benchmark	BlueScope Steel application
Governance	3 – Sustainability awareness	With a dedicated Sustainability unit, BlueScope Steel can advise you on communicating sustainability awareness to your markets.
	6 – Adaptation and resilience	Our products are among the most resilient building materials available. As such, they are well suited to building projects that anticipate climate change.
Liveability	5 – Safe places	A COLORBOND® steel roof is difficult for burglars to penetrate, while steel light poles and arbors encourage visibility in public spaces.
	7 – Accessibility and adaptability	Ramps and access ways constructed of steel are strong, durable, easy to install and can be tailored for any situation.
Economic prosperity	6 – Incentive programs	Steel clotheslines meet the requirements for the incentive scheme credit.
	8 – Peak electricity demand	Peak electricity demand can be greatly reduced through energy efficient design. BlueScope Steel can advise you on energy efficient design, including cross ventilation, reflecting solar radiation, accommodate photo-voltaic systems, improve shading and thermal mass issues.
Environment	7 – Potable water consumption	The iconic steel rainwater tank is a common feature in our urban landscape. There is a steel rainwater harvesting solution for every building project.
	8 – Stormwater	Steel rainwater harvesting systems and stormwater buffer tanks reduce run-off and help reduce the impact of stormwater surges on our waterways.
	10 – Waste management	Steel is a low waste material. It is highly recyclable, easily separated in waste streams, and is valued by a well established steel recycling industry.
Innovation		Light, strong, and malleable, steel is highly regarded by architects as the material that can express the most innovative designs.

Where can I find more information?

BlueScope Steel sustainability website

sustainability.bluescopesteel.com.au

Contact BlueScope Steel Direct

1800 800 789



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