

Green building guidance information to assist implementation of Climate Emergency Plan

BACKGROUND

The Town of Victoria Park's Climate Emergency Plan (CEP) is the organisation's strategic guidance document to meet a target of net zero carbon emissions by 2030.

One of the actions of the CEP (action 2.9) includes:

Require the construction of future Council owned buildings and assets to meet either:

- *A minimum 5 Star Green Star for New Buildings certification from the Green Building Council of Australia (GBCA) or equivalent, or*
- *Demonstrate that all minimum requirements under the Green Star for New Buildings Positive category from the GBCA have been met, or*
- *A minimum 5 Star NABERS Energy and Waste rating for the commercial office space.*

Given the complex nature of these sustainability accreditations and the comprehensive nature of information and requirements, the below seeks to provide guidance in this area. This is with a view to integration into Town building project delivery process to ensure the targeted credits/requirements of the tools are considered and accommodated in project planning and delivery.

BEFORE GETTING STARTED...

It is recommended that each new Town facility/major asset project does an Ecologically Sustainable Development scoping report to inform the project scoping and planning of the particular facility. In doing so, this will help identify any particular or special opportunities for that specific type of facility. It will also inform a decision about which tool to use and what rating is reasonable to aim for.

An example is here:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-7610%2120190227T234454.749%20GMT>

GREEN STAR

Green Star is considered to be a global leader in sustainability rating frameworks and is widely recognised by industry and the community in Australia. Green Star is aligned to the UN Sustainable Development Goals.

The [Green Star Buildings](#) tool assesses the sustainability outcomes from the design & construction of new buildings or major refurbishments, across 8 holistic impact categories:

- Responsible
- Healthy
- Resilient

- Positive
- Places
- People
- Nature
- Leadership

Green Star Buildings would be suitable for all types of community and civic facilities. In addition, Green Star officers are able to provide case studies, contact with other local governments who've been through the process and assistance with advice on specific types of community facilities eg. aquatic centres.

Green Star has done a lot of work in recent years to ensure they are integrated with the National Construction Code (NCC), including NABERS, for example they provide credits for the NABERS Commitment Agreement (which is a requirement under NCC?) so that model is only required to be run once to save time and money.

(Where Town facilities form part of larger precinct master planning exercises, then it may be worthwhile applying Green Star Communities to guide the principles and outcomes of the master planning exercise in which the building sits. Green Star Communities elements comprise Governance, Liveability, Economic Prosperity, Environment and Innovation. Green Star Communities certification requires re-certification every 5 years to maintain the rating.)

Process

The certification process is template documentation based and all submissions are assessed by one of their independent third-party assessors. It is recommended to employ an accredited Green Star professional to provide advice during building design and guide / complete the application. Within the standard certification process, there are two rounds of assessment. At the first round of assessment, points can be awarded and the project can be certified, or points may not be awarded and the project is provided with comments and the opportunity to address these items at the second round of assessment. During the Round 2 assessment, additional documentation addressing the Round 1 comments is assessed.

The following timing requirements apply to Green Star Buildings projects:

- Projects can register for certification at any time prior to practical completion. Projects can register after practical completion, though applicants should note the deadline below.
- All projects registered for Green Star Buildings must achieve a *Certified* rating within two years from practical completion of the project.
- The Certified rating is awarded after practical completion.
- Registered projects have the option of undergoing a *Designed* assessment as an interim step towards certification. The *Designed* assessment has to be done prior to practical completion.

When the results of the assessment have been validated the GBCA will award a Green Star Rating for project achieve 4 stars and above. It is also possible for submissions to apply for a particular star rating but achieve a high rating on assessment/certification.



Necessary Documentation

Information about the documentation requirements can be found on the [website](#) and in the [Submission Guidelines](#). A copy of the relevant Submission Guidelines are also made available to project teams upon registration of a project.

Project teams must submit documentation supporting credit compliance. Please see the below list of recommended documentation as a guide. Alternate documentation to that listed below can also be used by project teams to demonstrate compliance.

The Green Star Buildings rating tool is composed of the following documentation:

- The Green Star Buildings Submission Guidelines
- The Green Star Buildings Submission Templates
- The Green Star Buildings Calculators
- The Green Star Buildings Scorecard

Please note that for every credit claimed in the Scorecard you must submit a Submission Template accompanied by the relevant documentation to show how the project complies with the requirements on the credit.

Accreditation Criteria

There is at least one *Minimum Expectation* per category in the rating tool. Below is a detailed description of each one:

Category	Credit	Outcome
Responsible	Responsible Construction	The site must have an environmental management plan. The builder must have an environmental management system (large builders will need to be ISO14001 accredited). 80% of Construction and demolition waste must be recycled. Sustainability training is provided to construction workers.
	Verification and Handover	The building must be commissioned and tuned. Appropriate metering must be present.
	Operational Waste	The building must have appropriate spaces for waste management and an appropriately sized loading dock.
Healthy	Clean Air	The ventilation system must have appropriate filtration. Point source pollutants must be exhausted directly outside (printers, kitchens). The building must be provided with at least 50% outside air.
	Light Quality	Glare must be managed. Light fittings must be of good quality. Lighting levels must be appropriate. A daylight strategy must be developed.
	Acoustic Comfort	Internal noise levels from services and the outside is limited through an acoustic comfort strategy.
	Exposure to Toxins	All the paints, adhesives, sealants, and carpets must have low levels of Volatile Organic Compounds. Engineered wood must be low formaldehyde. There must be no lead, asbestos and PCBs in the building.
	Climate Change Resilience	The project has done a pre-screening assessment to identify climate-related risks facing the building.
Positive	Upfront Carbon Emissions	The building has 10% less upfront carbon emissions compared to a standard building from materials.
	Energy Use	The building provides a Carbon Zero Action Plan.
	Energy Source	The building has at least a 10% lower energy consumption than one built to the National Construction Code 2019.
	Water Use	The building has at least a 15% reduction in potable water usage when compared to a reference building or has installed water efficient fixtures and appliances.
Places	Movement and Place	There are showers, lockers and change rooms in the building (not applicable to residential buildings).
People	Inclusive Construction Practices	There are provisions for providing gender appropriate facilities and personal protective equipment.
Nature	Impact to Nature	Ecologically sensitive sites are protected.

Eligibility

Before registering, check that the project meets the [Eligibility Criteria](#).

Registration

A project is officially [registered](#) once the [Certification Agreement](#) has been executed and the [certification fee](#) has been paid. For projects where the applicant is a member company, and the

certification fee is over \$10,000, Green Star will provide two hours of technical support to be selected by the project team from the following options:

- A two hour 'on-boarding' workshop to introduce project teams to the process; or
- Two hours of coaching; or
- Two free technical questions.

Once the project is registered you will be assigned two Technical Coordinators who will assist you through the certification process. You can contact the Technical Coordinators by phone or email or through submitting a Technical Question*.

* Technical questions are submitted when you require further clarification on an item within a credit, or if you would simply like to confirm that your interpretation is correct, or you're proposing an alternative solution to the credit requirements. Technical Clarifications and Credit Interpretation Requests, terms included in the certification agreement, are technical questions.

NABERS

NABERS is a sustainability rating for the built environment. Like the efficiency star ratings that you get on your fridge or washing machine, NABERS provides a rating from one to six stars for buildings efficiency across:

- Energy
- Water
- Waste and
- Indoor environment

This helps building owners to understand their building's performance versus other similar buildings, providing a benchmark for progress. NABERS are less holistic than Green Star given the limited categories above.

NOTE: All commercial buildings over 2000m² also need to mandatory disclosure of their nabers ratings. See <https://www.cbd.gov.au/program/overview/nabers-energy-offices>

Process – Energy

A minimum 5 Star NABERS Energy rating for the commercial office space:

- For the construction of new building/major refurbishment development projects, there is what's called the NABERS Commitment Agreement. A Commitment Agreement is a contract signed by a developer or owner to commit to design, build and commission a building to achieve a specific NABERS energy rating (in this case 5 stars). The process and documentation is primarily outlined here: <https://www.nabers.gov.au/ratings/commitment-agreements>
 - On this page you can find all the documentation you need, along with a quick fact sheet for a more 'digestible' version of it.

Connections with Green Star Buildings:

- A minimum 5 Star Green Star for New Buildings certification from the Green Building Council of Australia (GBCA) or equivalent:
 - Demonstrate that all minimum requirements under the Green Star for New Buildings Positive category from the GBCA have been met.
 - Under Green Star Buildings [Submission Guidelines](#), the 'Positive' category is made up of a number of credits – Upfront Carbon Emissions, **Energy Use**, Energy Source, Other Carbon Emissions, Water Use and Life Cycle Impacts.

Accreditation Criteria

To demonstrate compliance with the 'Energy Use' credit within the 'Positive' category for an office development, there are two pathways to meet the credit:

Pathway 1:

The building's energy use is at least X% less than a reference building:

Performance Level	X Percentage (%)
Minimum Expectation (Nil)	10%
Credit Achievement (3 points)	20%

Exceptional Performance (3 points)	30%
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Further information on this credit is specified in the Green Star Buildings [Submission Guidelines](#)

Pathway 2:

NABERS Commitment Agreement is an alternative pathway for commercial office developments – BCA Class 5 only.

As specified within the Green Star Buildings v1 Submission Guidelines, the below NABERS Energy Rating Commitment Agreements are accepted:

Performance Level	NABERS Energy rating commitment agreement
Minimum Expectation	5.5 Stars
Credit Achievement	5.5 Stars with 25% modelling margin
Exceptional Performance	6 Stars

The scope of the NABERS Energy rating is **base building** only, and currently applies to **Class 5 offices only**.

Process – Waste

A minimum 5 Star NABERS Waste rating for the commercial office space:

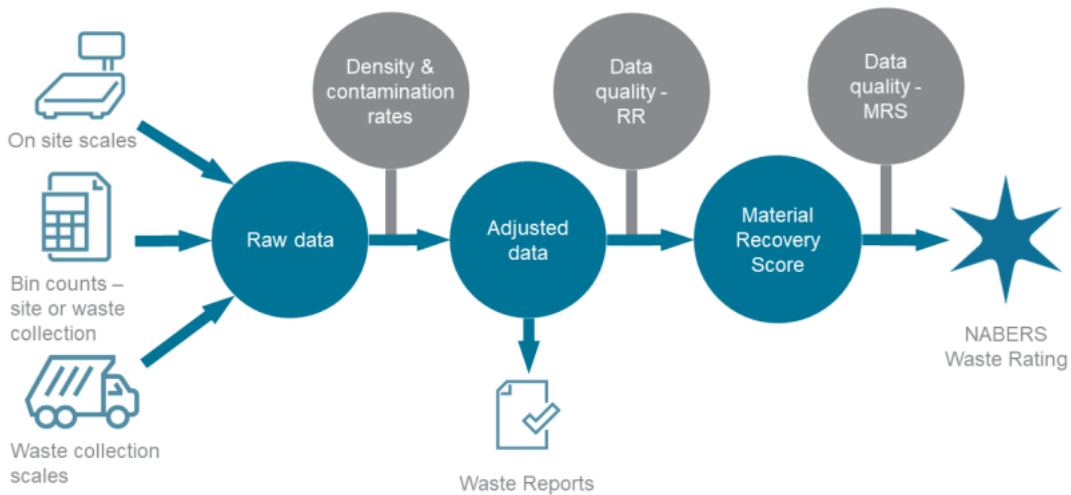
The NABERS Waste Rating for Commercial Buildings rates buildings in two categories:

- Whole building – All waste streams leaving the building that can be ‘reliably measured’;
- Base building – Only those waste streams that are managed by the building owner or manager.

The following information is from the NABERS Waste for Offices Rules. If you want to find out more information on NABERS Waste, refer to here:

<https://www.nabers.gov.au/publications/nabers-waste-rules-and-support-documentation>

Referring to the diagram below:



The fundamental calculation is the Recycling Rate (RR) based on 12 months of waste data. The recycling rate measures the extent to which materials leaving the building are diverted from landfill. The recycling rate is calculated as follows: $RR (\%) = \text{Total 'Recyclable' Materials (kg)} / \text{Total Materials Generated (kg)}$

Input data for this calculation can either be the actual weight of bins leaving the premises or a count of bins collected by a waste contractor multiplied by a density factor. The recycling rate is adjusted by a contamination rate applied to each stream. This rate is determined by on site audits, or through a NABERS standard contamination rate. NABERS then applies a data quality adjustment to the recycling rate. This step adjusts the rating to reflect the quality of the data used in the rating. The final adjustment to the rating is the Material Recovery Score, which assesses the extent to which materials leaving the building were recovered for beneficial re-use and reduced potential pollution.

Accreditation Criteria

To improve a NABERS Waste rating, you can do so by following these general steps:

1. Provide bins for a range of waste streams, encouraging more waste separation and better-quality materials for recycling;
2. Put processes in place to reduce contamination of recycling streams;
3. Write high quality data requirements into their waste and cleaning contracts;
4. Investigate their downstream supply chains to establish the outcome of resources leaving their building.

Unfortunately, NABERS cannot specify any design guidance (other than the above numbered items). There are a number of Waste Management consultants that undertake NABERS Waste ratings, so they may be helpful in providing assistance in this area. They can be found by searching this list:

<https://www.nabers.gov.au/ratings/find-an-accredited-assessor>

NOTE:

- In the search function, filter the 'Rating Type' to NABERS Waste.
- The assessors that work in this space primarily have NABERS Waste accreditations only.

In terms of achieving a certain NABERS Waste star rating, below is the RR benchmark:

Building Type	Benchmark (RR)
Office (Base Building)	6 stars > 74% 5.5 stars > 67% 5 stars > 60% 4.5 stars > 53% 4 stars > 46% 3.5 stars > 39% 3 stars > 32% 2.5 stars > 25% 2 stars > 18% 1.5 stars > 11% 1 star > 4% 0 stars > 0 - 4%
Office (Whole Building)	6 stars > 84% 5.5 stars > 76% 5 stars > 68% 4.5 stars > 60%

4 stars > 52%
3.5 stars > 44%
3 stars > 36%
2.5 stars > 28%
2 stars > 20%
1.5 stars > 12%
1 star > 4%
0 stars > 0 - 4%