

# INTRODUCTION TO HOMESTAR

## What is Homestar?

Homestar is an independent tool that rates the sustainability and performance of New Zealand homes. It has been developed for New Zealand's specific conditions based on successful international tools and the latest scientific information, which is constantly updated.

A Homestar rating offers clear communication to the marketplace, endorsing good levels of sustainable design in an easily-accessible format. Public awareness of the tool is increasing, and we believe it will become a key decision-making factor for most home buyers.

## star bands

A Homestar rating is a score out of 10, where 1 is significantly below par and 10 is current international best practise. The following table shows the rating that different levels of homes are likely to achieve.

older homes	1 star*	0 – 19.9 points
	2 stars*	20 – 29.9 points
typical new home build to NZBC minimums	3 stars*	30 – 39.9 points
	4 stars*	40 – 49.9 points
good	5 stars*	50 – 59.9 points
	6 stars	60 – 69.9 points
	7 stars	70 – 79.9 points
better	8 stars	80 – 89.9 points
	9 stars	90 – 99.9 points
international best practice	10 stars	100+ points

\* The NZGBC no longer awards a rating for scores less than 60 points.

See also the 'mandatory minimums' section, as there are certain things that must be achieved before a home can move beyond some star ratings.

## categories

The homestar tool awards points over a range of credits. These credits fall into 6 categories which are weighted according to their importance in good sustainable design. Credits are also available for innovative measures that are unable to be accounted for elsewhere, but can be shown to have a significant benefit.

DRE	resource efficiency and density ratio	8
EHC	reduced energy use, thermal comfort and internal moisture management	60
WAT	potable water use & grey water discharge	14
WST	construction & household waste reduction and management	6
MAN	'a safe, secure and adaptable dwelling'	6
MAT	responsibly sourced, low impact and low VOC materials	14
STE	stormwater, ecology, food production & proximity to amenities	12
INN	innovative features not covered elsewhere	10

## mandatory minimums

As well as overall points, some factors are considered so fundamental to good design that there are mandatory minimums that the home must meet in order to achieve a certain star rating.

6 stars	<p>EHC-1: 12 points</p> <p>EHC-2: a fixed heating source in the main living area, OR annual heating demand of less than 15kWh/m<sup>2</sup></p> <p>EHC-3: 1.5 points</p> <p>EHC-4: 0.5 points</p> <p>WAT-1: no more than 9L/min shower and 6/3L dual-flush toilet</p>
7 stars	<p>the mandatory minimums for 6 stars, plus</p> <p>EHC-1: 14 points</p> <p>EHC-4: 1.5 points</p>
8 stars	<p>the mandatory minimums for 7 stars, plus</p> <p>EHC-1: 16 points</p>

## when credits don't apply

Some entire credits or points within the credit may not apply to the building typology, site or items within the building. For example: materials selection and construction waste management for an existing dwelling.

In these instances the available points will be redistributed across either:

- the remaining points within the credit
- the category in which the credit is located, or
- the whole of the Homestar tool.

## assessment pathways

**The checklist pathway** is a simplified method of assessing a home. It applies to new home built ratings only. It can eliminate the need for calculations, but is more prescriptive and only considers the most critical factors in order to ensure that the home achieves the necessary standards. As such, it may not be appropriate for some projects.

**The scorecard pathway** is a complete assessment of all the elements that contribute to the home's sustainability. Variables are entered into a range of calculators, and the results are weighted and tallied. As long as the mandatory minimums are met, the assessor is free to choose which credits to target, depending on the nature of the project.

## a note on thermal performance

As thermal performance is the single biggest contributor to energy use, the EHC-1 credit carries the highest weight within homestar. There are a number of methods that can be used to assess thermal performance.

The simplest is the **schedule method**, which sets minimum constructed R-values for the roof, wall, glazing and floor elements. These vary depending on the climate zone. Because it does not consider the specific design, it is 'over-engineered' to ensure compliance.

A more detailed assessment is the **area-weighted calculation method**. This considers the relative contribution that each element makes to the overall thermal envelope, depending on the design. It also allows the designer to compensate for lower R-values in some elements by increasing others.

The most comprehensive method is **computer modelling**, which includes factors such as solar gain, thermal mass, thermal bridging and air tightness.

The schedule and area-weighted calculation methods may only award a maximum of 14 points. Due to the mandatory minimums for the EHC-1 credit, computer modelling is required on projects targeting a rating of 8 stars or more.

## process

**initial consultation:** prior to registering the project, we recommend discussing the project with a certified Homestar Practitioner to determine the appropriate type/s of assessment and the target rating.

**registration:** this allows the NZGBC to become aware of the project's existence, and thus provide help and guidance as required.

**assessment:** a certified Homestar Assessor reviews the drawings, specifications and/or completed building against the Homestar Credit Criteria. Information is entered into a spreadsheet to calculate the total score, and documentation collated to confirm compliance.

**audit:** the completed scorecard and supporting documentation is submitted to the NZGBC for audit. The submission will either be confirmed or returned with comments. A second round of audit is allowed before the points are awarded and the Homestar rating is issued.

## types of assessment

**design review** (for new builds only) – a check to confirm the design is on track to achieve the desired credits. As a star rating cannot be confirmed until the design and specification is finalised, the project will receive "homestar appraised" certification if it achieves 6 or higher.

**design rating** (for new builds only) – fully assesses the design and specification, meaning the location and orientation must be finalised. The project is awarded a star rating which must be converted to a "built" rating upon practical completion, as a design rating expires after two years.

**built rating** (mandatory for homestar certification) – assesses the completed dwelling in situ. This requires a physical inspection, and can be a stand-alone assessment or a verification of the design rating.