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# Transitioning to NatHERS 7 Star and Whole of Home

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# Understanding the NCC 2022 Energy Efficiency Changes

The ABCB released the National Construction Code 2022 edition to increase minimum requirements for the energy efficiency of new homes.

The minimum level of thermal performance of new homes is raised from 6 stars to the equivalent of 7 stars under NatHERS (Nationwide House Energy Rating Scheme). Deemed to Satisfy (DtS) provisions will also reflect the increase in thermal performance to the equivalent of 7 stars and the new annual energy use budget. NatHERS assessments are the most popular pathway to demonstrate compliance with the NCC energy efficiency requirements.

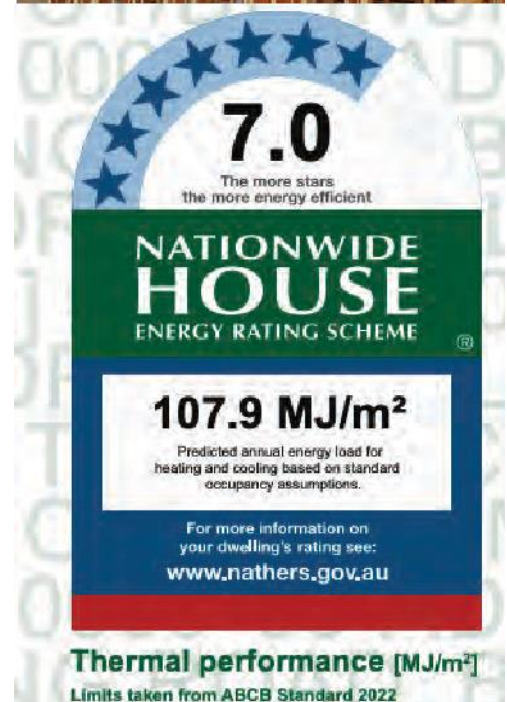
A new Whole-of-Home, annual energy use budget now needs to be met by new homes. This budget applies to the energy use of a home's heating and cooling equipment, hot water systems, lighting and swimming pool and spa pumps. Renewable energy systems, such as rooftop solar panels, aren't mandatory but can also be installed to help keep a home's energy use under the required energy budget.

## Why the changes?

The government is serious about cutting home energy use and made ambitious commitments to national and state targets. The objective is to:

- Reduce energy consumption and energy peak demand.
- Reduce greenhouse gas emissions.
- Improve occupant health and amenity.

The changes will make homes cheaper to run, more comfortable to live in and more resilient to extreme weather.





## What are the changes?

In conjunction with the increase to 7 stars, the maximum Heating and Cooling Loads have also been updated in applicable zones. They do not apply in Tasmania, parts of Queensland and WA, nor the NT. New South Wales operates under the BASIX (Building Sustainability Index) system.

Victoria will also remove barriers to installation of efficient electric hot water systems, helping households to capture further benefits from investing in solar panels, and supporting those who choose all-electric new homes.

The NatHERS certificate will look a little different and will incorporate a 'Whole of Home Performance Rating'.

NatHERS assessments will continue to provide a thermal star rating out of 10 alongside a Whole of Home performance rating out of 100 which includes an assessment of the energy required for the Whole of Home, including:

- Heating and cooling and hot water systems
- Pool / spa pumps
- Lighting
- Cooking and plug in appliances
- Onsite energy generation and storage (solar panels and batteries)



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## What do these changes mean to me and my clients?

Designers should be teaming up with an energy assessor at concept stage to make sure they are on track for 7 stars plus. There are opportunities for improved building performance and this ensures that sustainability is considered at the very early design phase. This is the best time to maximise opportunities for good orientation and other initiatives that create liveable, comfortable, efficient homes.

To reach 7 stars consistently, and cost effectively, takes a good understanding of passive solar design principles. Increased insulation and higher spec'd glazing will not always get you to 7\* if the design has fundamental thermal flaws. Relying on higher specification is not the cost effective way to achieve the mark.

Designers will have to let owners know that though this service is an extra cost, it is one that adds value while also reducing the risk of designs not getting to 7\* for the building permit.

Eastern Energy Raters offers an Optimisation Report at Concept Stage service where we will analyse and provide feedback on the likely thermal performance of the building envelope prior to finalising designs. This will save uncomfortable conversations with your client once plans have been finalised, however won't comply to 7\* requirements and will require design changes. It may also save your client thousands in build costs, lower energy bills and provide a more comfortable home for the residents. The cost of this service is approx. \$350 plus GST depending on the project.



## Who can I get to help me understand the changes?

Accredited NatHERS assessors are able to provide advice on reaching 7\* compliance.

Sustainability Victoria also has training offered:

<https://www.sustainability.vic.gov.au/energy-efficiency-and-reducing-emissions/building-or-renovating/7-star-homes-program/stream-b-training>

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## Tips for achieving 7 stars (southern states specifically)

### ORIENTATION:

The way you place your home on its site to take advantage of the sun and the prevailing winds in your location. Good orientation will significantly improve comfort and reduce your heating and cooling needs, and therefore your NatHERS rating. Orientation for warming in winter and cooling in summer aims to maximise northern exposure of walls and windows, but block solar access with appropriate eaves and other shading in summer. Living areas to the north with appropriate shading, ancillary zones to the south, bedrooms to the east if possible.

### GLAZING:

This should be a high priority and one element of the build that is definitely worth spending extra on. A home can lose up to 40% of its heating energy and up to 87% gained through glazing. If possible, specify a particular manufacturer as using their values is typically more effective than the default NatHERS values. Double and triple glazing are much better at reducing heat loss, however single, double and triple will all help with heat gain.



### SHADING:

Appropriate shading which can include eaves, awnings, shutters can maximise thermal comfort by allowing in winter sun but blocking summer rays. Adjustable shading is highly effective in particular for living areas to the north.

### COLOURS:

The colour of the roof, walls and window frames can have a significant impact on the rating. Darker colours for southern states are generally more beneficial, whereas lighter colours for states to the north.

### VENTILATION:

Ensuring adequate ventilation will not only assist with thermal comfort and energy efficiency, it will also reduce the risk of condensation as homes are becoming more airtight. Good ventilation can be achieved by natural ventilation through open doors and windows, and mechanical systems such as ceiling fans.



## AIRTIGHTNESS:

Improving airtightness can improve the thermal performance of your home by reducing the influx of cold air in winter and hot air in summer. Improving air tightness is one of the most cost-effective and easiest ways to improve your thermal comfort and reduce energy costs.

## CEILING PENETRATIONS:

Specify IC4 rated downlights which will allow insulation to be laid directly over the top, thereby reducing the area of ceiling penetrations and allowing for continuous ceiling insulation..

## Where can I find out more information, and what is the critical timeline for change?

The [Your Home](https://www.yourhome.gov.au) website is a free resource with a large amount of information on residential energy efficiency.

<https://www.nathers.gov.au/> has all the relevant information for the changes including Whole of Home

From 1 May 2023 to 30 September 2023 7\* and Whole of Home may apply.

This is a period of transition where either NCC 2019 may be used, or NCC 2022. From 1 October 2023 7\* and Whole of Home / equivalent DtS must apply.

References: VBA, ABCB, NatHERS.gov.au, YourHome.gov.au

