



Cracking the **code** – 20 Tips to assist in designing **7 star** homes

The NCC 2022 has raised the stringency of NatHERS building fabric ratings to 7 stars and introduced a new 'whole of home' energy 'budget' for the fixed services in the dwelling.

Generally, speaking energy assessors and designers have discovered the 6-star secret recipe. The secret recipe for 7-star is more complicated. However, the recipe will change for different house designs at this efficiency level and can vary with orientation and site conditions. And, of course, the recipe will change with the local climate too.

Suffice to say, 7-stars needs more detailed design and upfront consideration. There may also need to be some compromises in a final house design particularly if the home owner is looking to achieve a rating in the most cost effective manner.

Here are HIA's 20 quick tips for you, your designers and assessors and home-owners to crack the 7-star code.



Design and Orientation

- 1** **7-Stars is harder to achieve on all sites than 6-Stars** – location and design is key
- 2** **Develop a new recipe** – For 7-stars you need a new recipe and don't just accept the first design solution as there is lots of ways in which an extra 0.2–0.5 stars can be gained
- 3** Match the house to the site
- 4** **Flip the script** – Look at your floor plan layout and look to better suit the orientation, site layout and placement of living, sleeping areas and alfresco areas
- 5** **Get the assessor involved early** – It's important to get the energy assessor involved early with the building design to work you're your architect or building designer – not after!



Insulation and Energy Efficiency

- 6** **High levels of insulation is critical** – Insulate as much as you where can, but do your homework as there is lots of different products and using the right product in the right place is critical
- 7** **Use a combination of products** – A combination of different insulation products can provide a better outcome
- 8** **Location, location location** – The new climate (weather) files in the rating tools need careful consideration as some homes will need to do more to even get to 6-stars
- 9** **Design in thermal bridging outcomes for best results** – the thermal bridging changes can impact the rating for steel frames but it can be designed and factored in to mitigate impacts and avoid costly additional outcomes
- 10** **Floor insulation can help rating** – Under slab, insulated slabs, and insulated sub-floors may require some extra work but there is a range of solutions that can provide simple rating increases



Windows and Ventilation

- 11** **Window size matter** – A moderate trimming of window sizes and window to wall ratio of 5% can help to contain costs
- 12** Good window orientation is cheapest way to achieve 7-stars
- 13** **Window types matter** – Awning or top hung windows in hot/warmer climates allows better ventilation & higher star ratings.
- 14** **Higher performing windows and window placement is key** – look at different options and solutions and placement of different window types on different orientations and rooms in the house.
- 15** **Frame types and colours can help** – Match the wall, roof and window frame to suit the climate and get a free 0.3 stars
- 16** **Full and large expanses of window walls look great but are costly and difficult for compliance** – external wall sections will always be cheaper and easier option



Cost and Construction Considerations

- 17** **7-stars will likely cost more in upfront costs that need to be factored in** – While the new standards will likely cost more upfront it is highly variable & there are some simpler cost effective options available
- 18** **Floor covering matter** – Tile floors over a concrete slab can get a free 0.2 stars
- 19** **Choose appliances early** – The new whole of home provisions mean that the buildings fixed services will need to chosen early (energy usage type not necessarily brand) in design process. If changes are made during the build it will likely impact the energy usage budget and require re-approval.
- 20** Ceiling fans in habitable rooms can give you an extra 0.5–1.5 stars in moderate and hot climates and also provide positive perception of not needing to turn the air-con on saving \$\$\$

Where can I find more information?

For further information, contact HIA's Building Services Team via email hia_technical@hia.com.au or call on 1300 650 620