

MEDIA RELEASE

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Cost-Effective 7-Star Energy Compliance: Western Sydney Outperforms National Average

A new study has revealed the average cost to upgrade new homes in Western Sydney to achieve 7-star energy efficiency ratings is just \$4,105, less than the average of \$4,311 for Australia's largest cities, and second only to Brisbane in the affordability stakes.

The cost estimate, which is based on 2024 building product prices and the least favourable house orientation scenarios, is significantly lower than less-detailed industry projections previously circulated.

It forms part of a new report, *7.0 Star cost upgrade analysis*, compiled by Graham Energy, a specialist sustainable building consultancy. In total, the report examined more than 50,000 NatHERS simulations to provide a better understanding of energy upgrade requirements for both the building industry and homeowners.

The 2022 National Construction Code (NCC) requires that all new Australian houses and apartments meet a minimum energy efficiency rating of 7-stars under the Nationwide House Energy Rating Scheme (NatHERS). At the time of adopting the new standards in August 2022, Building Ministers stated they would improve amenity and drive down household energy bills.

The two most common building types in new home estates across major Australian cities formed the basis of analysis undertaken in the report – detached three-bedroom, single-storey dwellings and four-bedroom, double-storey homes.

A vast range of building scenarios and cost-influencing factors were examined across these building types, including:

- 9 different climates
- 16 different orientations
- 433 window options
- High and low window-to-floor aspect ratios (WFAR) ranging from 28% down to 20% (noting a national average of 23%)
- Shading and overshadowing.

Clinton Skeoch, Executive Director & CEO of the Australian Glass and Window Association (AGWA), said the report is the most comprehensive NatHERS modelling study ever undertaken, with the costing report looking into actual 2024 costs of 7-Star energy compliance.

"This report clearly demonstrates that achieving 7-Star energy compliance for new homes in Western Sydney isn't as costly or complicated as projected in previous public discussion," Mr Skeoch said.

"While improvements to glazing are necessary, higher performing windows significantly reduce a home's energy consumption and running costs, while also enhancing the comfort and health of residents.

"With the right planning and advice, new homeowners can incorporate design features and material choices that make a big difference to their home's rating outcome, without breaking the bank," Mr Skeoch said.



Windows - Energy Facts

- According to energyrating.gov.au, up to 40% of the heat loss, and up to 87% of the heat gain in Australian housing is associated with windows.
- In a paper titled '*Optimal window designs for Australian houses*', Tom Simko and Trivess Moore calculated that windows are responsible for 1.5% of Australia's total energy consumption.

Detailed Methodology

- This report builds on a 2021 report by Tony Isaacs titled '*Cost and Benefits of Upgrading Building Fabric from 6 to 7 stars*'. It updates cost assumptions to 2024 dollars, using the Building Construction Australia Producer Price Index for standardised comparative rates.
- The study consisted of two archetypes - a single and double-storey detached dwelling - with a low (20%) Window to Floor Aspect Ratio (WFAR) indicative of the lowest glazing area currently seen in market volume builds, and a high (28% for single-storey and 27% for double-storey) WFAR which is representative of more architectural house designs, in 16 orientations across 9 climate zones with 433 window options in each.

7-Star NatHERS Compliance – National Cost Comparisons

	House type	Low or High Window to Floor Aspect (WFAR)	Cost difference	Range Summary for region	Worst Orientation Average
Brisbane	3-bedroom	Low	\$992	\$906-\$6309	\$2972
		High	\$908		
	4-bedroom	Low	\$3678		
		High	\$6309		
Melbourne	3-bedroom	Low	\$4453	\$3121-\$9183	\$5905
		High	\$3121		
	4-bedroom	Low	\$6864		
		High	\$9183		
Perth	3-bedroom	Low	\$5763	\$2974-\$5763	\$4262
		High	\$2974		
	4-bedroom	Low	\$3556		
		High	\$4757		
Sydney West	3-bedroom	Low	\$5205	\$3121-\$5205	\$4105
		High	\$3121		
	4-bedroom	Low	\$3559		
		High	\$4534		

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