

Windows & energy efficiency

Design Intelligence.

Ideas for consideration when designing and building your new home

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When designing your dream home, it's important to ensure that your choice of windows and doors is not only visually pleasing but is the best choice for energy efficiency.



Gone are the days of one standard product range to choose from – the options nowadays are many and varied so it makes good sense to do your homework on styles, designs and efficiency well before it comes time to actually choosing the items that you may have to live with for years.

It's a good idea when still in the planning stages of your design to consider the placement of windows. Strategic placing of windows and doors can achieve low air infiltration while also allowing for cross ventilation in rooms.

Miglas Windows produce high performance windows and have made it their priority to ensure that their products have a high energy rating.

"We customise our windows to meet the clients requirements and encourage a high energy rating on everything we produce," says Kris Sandvoss from Miglas.

Although windows and doors are an area in which you can cut costs, this is not the best approach given their importance for the overall comfort and efficiency of a construction.

Windows and doors allow for 49% of the heat loss from a building and 87% of solar heat gain.

Surprisingly enough, the style and shape of a window or door has an important impact on energy efficiency. For example, traditional double-hung windows are hard to seal air tight and lose their ability to close air tight after the first few years; sliding windows and doors are usually less efficient than hinged options as air tight closure is reduced to make operation possible while casement windows allow maximum ventilation when open to 90 degrees.

Other aspects to consider with your selection are U Value (Uw), Air Infiltration (AI), and Solar Heat Gain Coefficient (SHGC).

U Value measures how well a product prevents heat from escaping a home in winter and entering it in summer. The lower the Uw, the better the thermal efficiency. Good Uw ratings are lower than 2.4.

Air Infiltration siphons about half of an average home's heating and cooling energy to the outdoors. Air leakage through and around windows is responsible for much of this loss. Advanced sealing with compressible

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Images courtesy of Miglas

gaskets and tight closing hardware reduce air leakage. Good values are lower than 0.09.

Solar Heat Gain Coefficient measures how well a product blocks heat from the sun's rays. SHGC is expressed as a number between 0 and 1. The lower the SHGC, the better a product is at blocking unwanted heat gain. SHGC's around 0.6 are reasonable.

The frame is an important aspect of the overall window. Timber, Aluclad or PVC frames are low conductive materials that insulate better than standard aluminium frames. Low conduction of the frame is important as heat transfer through the frame can have a major impact on comfort even when the glass is high performance.

Double glazing is the best choice for every climate zone in both performance and comfort level. Additional requirements can be fulfilled with special high performance glazing.

Hardware quality is crucial for smooth operation and long life expectancy. Hardware also contributes to air tight closure and helps

to avoid unwanted drafts. Gaskets are often a forgotten aspect and there are no regulations governing the quality of these. Welded gaskets with no gaps especially in the corners are important to keep heat inside or the cold out.

Windows and doors can shape your building, your project value, your comfort and your carbon footprint. Take the time to make an informed decision about something that should be a good investment and not a cheap off the shelf solution.

For more information, see the Window Energy Rating Scheme www.wers.net for help choosing windows and doors and comparing their values.

To find out more about Miglas call (03) 9728 3555 www.miglas.com.au