Energy Efficiency Design Card

Barn Sydney

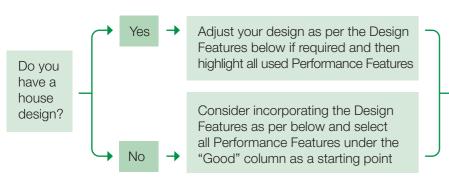
Climate Zone 5 | Warm Temperate

September 2023

The purpose of this Design Card is to aid the creative process of designing a dwelling, ensuring that the chosen direction aligns with both aesthetic and performance goals. Please keep in mind that the listed "Design Features" are key considerations, but they do not include all aspects that can be required to achieve the desired design look.

Additionally, the "Performance Features" provide a summary of features that can be incorporated into the design to achieve the desired thermal performance, such as a 6 or 7-star rating. However, these features are meant to serve as initial guidance in the design process. It is essential to subsequently have an Accredited Energy Efficiency Assessor review the design to determine its suitability.

How to use the Design Card



Send the design to an Accredited Energy Efficiency Assessor for adjustment advice. Consider upgrading the Performance Features to the "Better" or "Best" columns to improve the performance.

Receive the final set of upgrades & BASIX Certificate

Design Features

Modern farmhouse designs have been on-trend for a while. It connects well with the Scandinavian style which is characterised by the minimalist philosophy that encourages simplicity. It creates a strong relationship between the design elements and nature. Barn style homes are loved in Australia for their vaulted ceilings, open plan living spaces and bold street presence.

Barn Recommended Hardie™ Products

Hardie[™] Oblique[™] Cladding

Axon™ Cladding

Stria™ Cladding

Steeply Pitched Roof

A beautifully symmetrical gable roof should be elevated. It should be high set with a pitch of 35 to 45 degrees using corrugated steel sheets, not tiles.

Barn Shape

Homes should be designed to make the barn shape appear separate from other parts of the house, by allowing it to sit forward from of other parts of the house. The result should be a simple diagrammatic form.

Craftsmanship

Cladding detail is a must for a feel of craftsmanship. Use Hardie[™] fibre cement vertical joint cladding or weatherboard cladding that's uniform and can handle dark colours.

Long Rectangular Windows

Floor to ceiling windows accentuate the length of the house. Combine with outdoor decks and large sliding doors to connect with nature.



Performance Features

SYDNEY	GOOD	BETTER	BEST
Windows Glass	Clear	Low-e glass	Argon-filled clear glass
Window Frame	Aluminium Standard Single Glazing	Aluminium Standard Double Glazing	Thermally-broken/uPVC Double Glazing
Orientation ¹	E, SE, S, SW & W	NW & NE	N
Orientation ¹ Openability ²	None	Include full openability on north/south windows	Include full openability on all windows
Shading	450mm depth eaves	Deeper eaves over east/west	Deep east/west eaves + minimal north
External Wall R-Value ³⁴	R2.0	R2.5	R2.7
Suspended Floor Insulation	R3.0 over unconditioned areas	R3.0 throughout	R4.0+ throughout
Slab Insulation	Waffle Pod	Waffle Pod + 25mm width slab-edge insulation	Waffle Pod + min 50mm + slab edge insulation
Ceiling Insulation	R4.0	R5.0	R6.0
Wall Cavities	Reduce wall cavities on all external walls	Include wall cavities on east/west facades	Include wall cavities on all external walls
Ventilation	Include ceiling fans in bedrooms	Include ceiling fans in bedrooms + a living area	Include ceiling fans in bedrooms/studies & living areas
Reflectivity	Include non-reflective wall sarking	Include reflective wall sarking	Include wall and roof reflective sarking
Colour	Dark tones	Medium tones	Medium/Light tones

- ¹ Orientation refers to the main location of windows in relation to the path of the sun.
- On double storey dwelling only, installing fall protection screens on the upper storey windows enables the use of windows with full openability, increasing cross-flow ventilation and potentially reducing the cooling loads and proving a better thermal performance.
- ³ Inclusion of internal walls insulation on the garage area can act as a barrier to the external environment, potentially improving the energy rating.
- ⁴ External Wall Insulation refers to the overall R-Value of the wall as a system
- ⁵ Thermal mass can slow down the rate at which the dwelling warms up and cools down and must be used strategically to moderate internal temperatures. Thermal mass can be found on different elements of the dwelling, such as concrete slabs, tiled finished floors or walls, among others.

External Walls

The following wall systems have been assessed in accordance with AS/NZS 4859:2018 "Thermal Insulation Materials for Buildings. Part 1: General Criteria and Technical Provision, and Part 2: Design" and provide an R-Value as required on the Performance Features Table.









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