

Energy Efficiency Design Card

Box Modern Brisbane

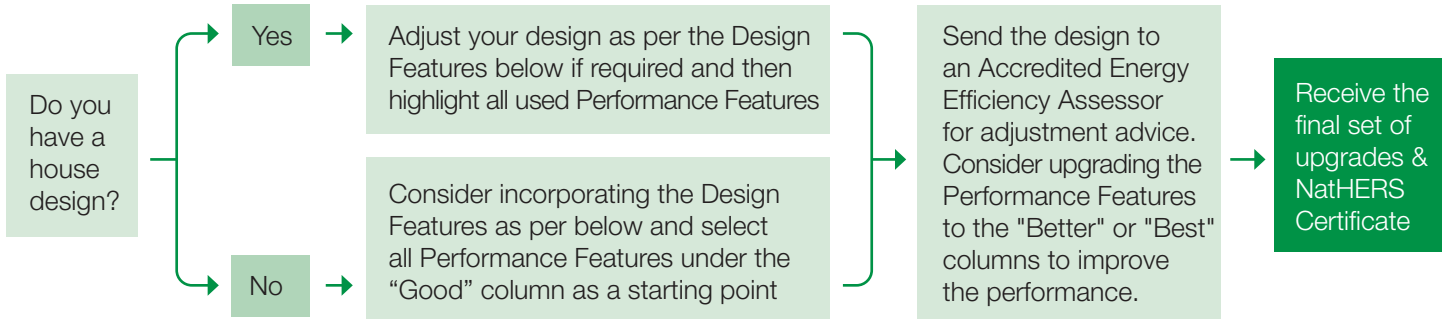
Climate Zone 2 | Warm Humid Summer, Mild Winter

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



Design Features

The box shape is foundational in modern architecture. It's driven by the principle that "form follows function" where design is stripped back to pure form. A single box creates little interest. The arrangement and treatment of distinct box shapes is what makes the look compelling.

Box Modern



Hidden Roof Line

Parapet walls hide the roof line and make it appear flat. The capping or guttering can blend with the cladding or be used to create a dark outline to accentuate the shape against the sky.

Box Form

A minimum of two distinct boxes, or cubic forms, should be arranged so that they're offset left to right and front to back to create interest.

Achromatic Palette

Painting one box white and the other dark grey amplifies façade articulation to dramatic effect. The use of black, white and grey is a sophisticated colour palette which gives a high-end feel.

Bold Cladding

Cladding plays a more important role in the aesthetic than the windows. Use the clean lines of vertical or horizontal cladding or even panel layouts to further distinguish each box shape.

Recommended Hardie™ Products



Hardie™ Fine Texture Cladding



Hardie™ Brushed Concrete Cladding



Matrix™ Cladding



Note: This card is designed to fit an A3 page if printed. Please consider the environment before printing.

Performance Features

BRISBANE		GOOD	BETTER	BEST
WINDOWS	Windows Glass	Toned glass	Low-E glass	Low SHGC Low-E glass
	Window Frame	Aluminium Standard Single Glazing	Aluminium Standard Double Glazing	Thermally broken Double Glazing
	Orientation ¹	E, SE, S, SW & W	NW & NE	N
	Openability ²	None	Include full openability on north/south windows	Include full openability on all windows
INSULATION	Shading	Inclusion of window shrouds	Inclusion of awnings	Increase eaves/soffits
	External Wall R-Value ³⁵	R1.5	R2.0	R2.5
	Suspended Floor Insulation	R2.0	R3.0	R4.0
	Slab Insulation	Waffle Pod	Raft Slab	Raft Slab + R1.5 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 living areas	Include ceiling fans in bedrooms	Include ceiling fans in bedrooms and living areas
Reflectivity		Include wall reflective sarking	Include roof reflective sarking	Include wall and roof reflective sarking
Colour		Dark tones	Medium tones	Light colours

¹ Orientation refers to the main location of windows in relation to the path of the sun.

² 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 The Queensland Government can concede a 1 star credit to dwellings located in Climate Zones 1 or 2, provided:

- Inclusion of an outdoor area as described in S42C2(3) from the NCC 2022 Vol 2.
- The roof covering the outdoor area achieved a total R-Value of at least 1.5 for downward heat flow.
- The outdoor area includes a ceiling fan with a speed controller and a blade rotation diameter of at least 900mm.

Refer to the Queensland Development Code MP 4.1 Sustainable Buildings for further information.

⁵ External Wall Insulation refers to the overall R-Value of the wall as a system.

⁶ 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.

GOOD

R-Value

Summer: 1.93

Winter: 2.04

BETTER

R-Value

Summer: 2.26

Winter: 2.37

BEST

R-Value

Summer: 2.69

Winter: 2.84