

# 6-star energy efficiency rating for new houses and townhouses

## What is a house's energy efficiency star rating?

A house's energy efficiency (star rating) applies to the design of the 'building shell'—roof, walls, windows and floor. The building shell significantly influences the indoor comfort and energy efficiency performance of the dwelling. The rating is out of 10 stars. It does not include major fixed appliances like air conditioners, hot water systems, lighting and fridges.

## How does the 6-star standard apply to houses?

The minimum energy efficiency rating for new houses and townhouses (class 1 buildings) in Queensland is 6 stars. This standard also applies when undertaking a renovation to an existing house, such as additions, alterations or re-locations.

The 6-star standard has applied since 1 May 2010 under the *Queensland Development Code 4.1—Sustainable buildings* (QDC). It applies to all new houses and townhouses (class 1 buildings) and enclosed garages (class 10a buildings) attached to class 1 buildings.

The 6-star standard does not apply to new or existing multi-unit residential buildings (class 2). These are required to achieve a minimum 5-star energy rating (refer to the *5-star energy efficiency rating for residential units* fact sheet).

## What are the benefits of a 6-star house?

A 6-star house is not only more comfortable to live in, it will also provide homeowners with ongoing savings on electricity bills because it uses less energy for artificial cooling and heating. This standard can also reduce the need for additional electricity infrastructure caused by peak demand by encouraging more energy efficient building design.

## What are the design features of a 6-star home?

Architects and designers are able to use a range of styles and energy efficient features to comply with the 6-star standard. A 6-star house may not look any different from another house, but it can have a better energy performance. Many energy efficient (or 'passive') design features can be included at little or no extra cost, such as:

- northern orientation of living areas and good layout of rooms
- minimising the area of east and west facing walls and windows
- wider eaves and window awnings for shading
- well-located and designed windows to capture breezes for 'natural ventilation'
- insulation under roofs and in walls
- roof ventilation with roof and eave vents

- light coloured roof and walls
- treated glazing, particularly for western facing windows
- ceiling fans in living areas and bedrooms.

## What compliance methods can be used for the 6-star rating?

A range of compliance options are available under the QDC to achieve a 6-star house. The assessment methods have been improved over time to better reflect Queensland's climate, including better consideration of shading and ventilation, and lifestyle. The two typical compliance methods used are:

- software:** a house energy assessor uses approved software under the Nationwide House Energy Rating Scheme (NatHERS), these being BERS Pro, AccuRate or FirstRate5, to model the design and produce a star rating certificate, or
- elemental (deemed-to-satisfy [DTS]):** an architect or building designer follows the more prescriptive design requirements set out in the National Construction Code (NCC, formerly known as the Building Code of Australia) in Volume Two (section 3.12), noting Queensland specific variations.

## How do optional credits work with 6-star housing?

Under the QDC, optional credits are provided as flexible design options towards achieving the 6-star standard. A combination of the following credits may be used:

- **outdoor living area:** a credit of 1 star (with a ceiling fan) or half star (without a ceiling fan) is available for houses and townhouses that include a covered outdoor living area, such as a deck, verandah or patio,
- **photovoltaic (solar) energy systems:** a credit of 1 star is available for houses and townhouses that include a solar (PV) system that has a minimum of 1 kilowatt capacity.

When using the optional credits, the design must achieve a minimum 'baseline' star rating of either 4.5 stars in climate zones 1 (tropical), 2 (subtropical) or 5 (warm temperate) or 5 stars in climate zone 3 (hot arid) under the NCC. Visit [www.hpw.qld.gov.au/construction/BuildingPlumbing/Pages/default.aspx](http://www.hpw.qld.gov.au/construction/BuildingPlumbing/Pages/default.aspx) to find out what climate zone a house is located in.

## Marketing houses greater than 6-stars with optional credits

When marketing a house or townhouse above the required 6-star standard, any advertising material should not add any extra stars from the inclusion of optional credits. If an outdoor living area and/or photovoltaic (solar) energy system is included in the design, these can only be promoted as separate energy efficiency and/or lifestyle features, and not be added to the house's star rating. Optional credits are provided for regulatory purposes only in complying with the 6-star standard.

## Is there a concession for suspended flooring?

The QDC provides a concession towards the insulation requirement for suspended flooring in climate zones 1 and 2. If the elemental (DTS) provisions of the NCC are used to comply with the 6-star housing standard in these climate zones, the insulation requirements for suspended floors do not apply.

## What is the impact of the 6-star standard on building costs?

In 2009 it was anticipated that the move to 6-star housing would generally increase building costs by around 1.25 per cent on average depending on the home's design, size and location (NB. this did not include an outdoor living area and/or photovoltaic (solar) energy system). However, this cost can be offset by ongoing savings on household energy bills as a 6-star house can reduce the need to operate artificial cooling and heating.

## For more information

For more information refer to the *QDC 4.1—Sustainable buildings*, its associated guideline and the guideline *Design guide for 6-star energy equivalence housing*. All are available on the Department of Housing and Public Works' website at [www.hpw.qld.gov.au/construction/BuildingPlumbing/Pages/default.aspx](http://www.hpw.qld.gov.au/construction/BuildingPlumbing/Pages/default.aspx).

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