

# The **Owner Builder**

THE AUSTRALASIAN  
HOME BUILDERS  
MAGAZINE

[www.theownerbuilder.com.au](http://www.theownerbuilder.com.au)

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## MODERN MUD BRICK

**Costing straw bale  
Two houses from one  
Reverse brick veneer home  
Farmhouse of straw  
Polished concrete slab**



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### COVER PHOTOGRAPH

Wayne and Helen Lascelles have created a truly unique home, perfectly in harmony with the surrounding bushland. Story start page 38.  
Photo: Greg Sims.

### The Owner Builder

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# Why an owner builder needs good specifications

*Energy efficiency is just one example of why detailed specifications are important.*

BY BLAIR FREEMAN

Building drawings are graphical descriptions of your project, primarily defining quantity and position. Specifications are written descriptions, primarily defining quality and the processes that express the designer's intentions.

## The role of specifications

There are many design decisions that cannot be expressed in the drawn form. These must rely on being expressed in writing. There are also many design decisions that would be too tedious, or too impractical, to be recorded in drawings.

The specification is thus created to complement the drawings so that together they convey all the design decisions. This is why a construction specification is primarily a design document. It is evidence of many design decisions which are not found elsewhere. The specification also links the drawings with the general conditions of contract.

As the specification has many different types of users, including contractors, clarity is important to ensure everyone will interpret it in the same way. The specification has many roles including:

- A written record of design decisions taken.
- A document demonstrating compliance with statutory requirements.
- An estimating document.
- A tendering document.
- A legal (contractual) document.
- An on site working document.
- A dispute settlement document.
- A project management tool.

The written documentation should provide correct instructions for the sub contractor or contractor. This allows them to undertake the works for you in a professional and timely manner.

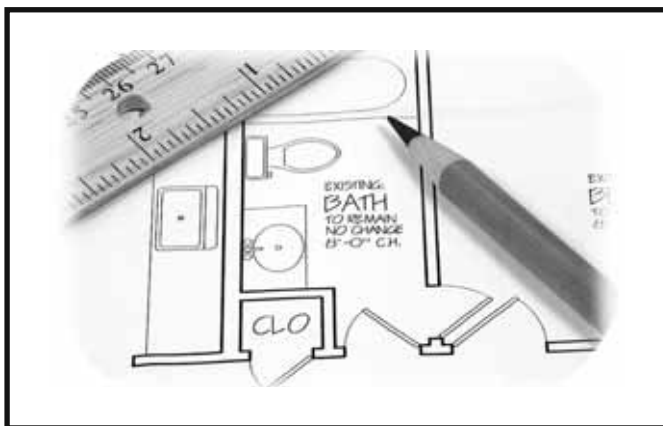
*Below right: Ceiling batts poorly installed - a common problem in external ridge line areas.*

## Energy efficiency

There have been many important upgrades to the BCA (Building Code of Australia), now comprising Volume One and Two of the National Construction Code (NCC) Series. Since the introduction of updated energy efficiency requirements in the BCA in May 2010 and the NCC in May 2011, the need for quality specifications for owner builders is now more important than ever.

To comply with NCC 2011 (BCA Vol 2 Part 3.12 Energy Efficiency for housing) a report prepared by an accredited assessor is required to provide evidence that new dwellings and extensions achieve a 6 star energy rating.

To perform their assessment they will require the site plans, floor plans, elevations, window schedule and the construction materials for the dwelling (e.g. the type of cladding, what rating of insulation, roof material to be used, etc). This information is fed into the energy





rating program to calculate the star performance of the dwelling. This will result in a theoretical rating based on the information provided.

## Insulation

If we take a product like insulation as an example, the higher R-values now being put into homes may require upgrading of the overall thermal efficiency of the building envelope (roof, walls, floor and windows) to take full advantage of this.

Owner builders should consider having an assessment done to ensure that these areas are correctly insulated according to the plans and specifications, to ensure that the theoretical energy rating is being achieved. An inspection will review the installation and look for air leakages in the building envelope with the use of infrared thermal cameras; the resultant detailed report may form part of the documentation handed over at the time of completion.

For example, a 5% gap in the ceiling insulation relates to up to 40% loss in overall R-values. If the assessment shows gaps, the contractors you have used need to rectify this, assuming that the specifications provided to them have been breached. Another assessment may be needed to make sure building compliance is achieved.

*Editor's note: Vigilance is the best defence! Ceiling gaps may be relatively easy to rectify at a later stage, but not for cathedral ceilings. The same applies to wall insulation – once the painting and finishing is done, rectifying insulation gaps will be a major disruption.*

*Above left: Polyester ceiling batts installed, then moved by other trades and not replaced. Above right: Missing wall batts and poorly sealed reflective wall wrap to bottom plate.*

Specifications in line with the new building regulations will ensure that the homes owner builders have helped build, and in many cases designed, are properly insulated.

When you specify products or have a tender for work done, don't be caught short with non compliant products being supplied due to the fact that they were incorrectly specified in the first place. Spend some time on the detail; it will save you much on the build. ■

*Blair Freeman is an insulation technical specialist and a certified Building Science Thermographer. [www.energyleaks.com.au](http://www.energyleaks.com.au)*



### • Australian Building Codes Board

The Australian Building Codes Board (ABCB) is a joint initiative of all levels of Australian Government and includes representatives from the building industry. Copies of codes and amendments are available from their website.

1300 134 631, [www.abcb.gov.au](http://www.abcb.gov.au)

### • 6 star Fact Sheet

The Sustainability House website has a fact sheet that can be downloaded. [www.sustainabilityhouse.com.au/6star](http://www.sustainabilityhouse.com.au/6star)

### • ICANZ

The Insulation Council of Australia and New Zealand has produced a useful Thermal Insulation Handbook, available to download as a PDF. [www.icanz.org.au/handbook/](http://www.icanz.org.au/handbook/)

## 6-Star Survival Guide

Compared to a 5-star house, the 6-star house will most likely require increased insulation to roof, walls and suspended floors. A 6-star building may not require improved glazing if all the other elements are good e.g. high levels of insulation, good orientation and appropriate shading. However, many houses will require either low-e glazing or double glazing to achieve 6 stars.

### How much will it cost to comply?

For a project with good, location specific design and good orientation, there will be no additional cost.

For a project with bad, non-location specific design and bad location, costs will be higher.

[www.sustainabilityhouse.com.au](http://www.sustainabilityhouse.com.au)

## Insulation Handbook

The right insulation increases building energy efficiency, improves health and well-being and reduces greenhouse gas emissions.

### Total R-value

R-value means the thermal resistance ( $m^2K/W$ ) of a material calculated by dividing the thickness by its thermal conductivity.

Total R-values are based on the sum of all components of the building system including indoor and outdoor air-films, building materials used in the system and air-spaces.

Note that the correct choice of insulation is dependent on a range of factors, other than thermal performance. Other factors may include condensation control, moisture absorption, non-combustibility and acoustic performance.

[www.icanz.org.au](http://www.icanz.org.au)