Government of **Western Australia**
Department of **Mines, Industry Regulation and Safety**
Building and Energy

Powering your new house for less

A guide for those entering into a contract for home building and associated works.

What is an energy efficient house?

An energy efficient house uses less energy than an existing standard house but gives the same amount of comfort.

The layout of a house has a huge bearing on its energy efficiency. While some houses are hot in summer and cold in winter, others seem to be naturally cool in summer and bathed in winter sunshine. This is not an accident – it is all about design.

Passive solar design

Passive solar design makes full use of natural heating and cooling. If you are in the southern half of Western Australia, this means maximising your window areas on the north side of your house and ensuring they are shaded to block out summer sun but allow in winter sun.

Passive solar design places windows in the right place to allow the cool sea breezes in summer to blow through your house, purging the hot indoor air. An air-tight house keeps unwanted heat or cold outside and good insulation helps stop it seeping in through the walls and ceiling.

As a rule of thumb, a well-designed passive solar house will have living areas to the north, bedrooms to the east or south and utility areas, such as laundries and bathrooms, to the west. These may not all be possible but getting any of these elements right will help the house be comfortable naturally and you will not have to rely on energy-intensive artificial heating and cooling.

Choosing your block and your house

As a well-designed house should have its living areas facing north, you should consider this when choosing your block.

Other things to consider when buying your block include proximity to public transport, schools, shops, doctors, hospitals and other services. These, along with the size and cost of the land, can often be deciding factors in where you decide to buy and it is worth doing your homework – after all, this is likely to be where you will live for years to come.

"An energy efficient house will pay you back every day."

How do I know if my home will be efficient?

All houses must meet the requirements of the Building Code of Australia (BCA), which sets the minimum standards for health, safety, amenity and sustainability.

The minimum energy efficiency standard is often referred to as '6 star', on a scale of 1 to 10. A 1 star house needs large amounts of artificial heating and cooling to keep it comfortable and a 10 star house needs none – even in WA's hot summers.

To achieve the 6 star standard, the house should be designed for its specific location. A one-size fits all approach to design is unlikely to work. Builders may have to make changes to their base design to ensure your house meets the 6 star standard. You may also have an impact on the star rating by making changes to the plans.

For example, if you move a window or change the layout of internal walls it is possible to reduce the rating and drop below the 6 star level. Work with your builder to ensure these changes are kept to a minimum. It is important to clarify early on what changes will be charged for and which will not. With a few extra tweaks at the design stage, you may even end up with a higher rating for your house.

What is a rating and what is not?

The BCA is a flexible code and meeting energy efficiency requirements can be achieved through a rating or various other approval methods.

Rating

A rating refers to a house design that has been assessed using accredited software. The accreditation comes from an organisation called NatHERS (National House Energy Rating Scheme). The software is sophisticated and takes into account many variables and produces a rating for your exact design, on your exact block. Only houses or designs that are rated to the 6 star level using this software should call themselves a '6 star house'.

Other approval methods

There are other ways of gaining compliance and approval for energy efficiency and although these aim to be equivalent to 6 star, this is not always the case. Therefore it is possible for your house to meet the BCA requirements but not be rated 6 star. This can be confusing so we reccommend you ask your builder for the energy efficiency report and how your building will be complying with the energy efficiency requirements.

Where do I go to find efficient house designs?

All builders must provide designs that meet the energy efficiency requirements. If you ask for a 6 star rated house, take a look at the NatHERS rating certificate for your house so you know what the exact rating of the design is.

If you want to go further, you can find builders and designers who specialise in highly energy-efficient houses. Check out the weekend papers for more ideas.

Sustainable House Day is in early September and a range of sustainable houses will be open for the public to view. Go to www.sustainablehouseday.com for more information.

Why build an energy efficient house?

Having an energy efficient house helps to reduce the amount of energy needed for the house to be comfortable. This means less energy is required, less fossil fuels are burnt and less greenhouse gases are put into the atmosphere. These fuels are finite and an efficient house will help to ensure the more efficient use of these resources.

Higher levels of greenhouse gases, including carbon dioxide (CO2) in the atmosphere not only potentially change the climate, they have a variety of other negative effects. More CO2 in the atmosphere is making the seas more acidic and affecting many species which are the foundation of the food chain. The less we use the better.

An energy efficient house will pay you back every day. Energy prices are unlikely to fall substantially and are more likely to keep rising so energy efficient buildings also help you save money.

Resources

As you can see, there is a lot to think about when it comes to planning a sustainable and energy efficient home, but there is plenty of information and lots of places to assist you.

A great resource is the Your Home website, run by the Commonwealth Government. You can download a free step-by-step guide to building a new sustainable home and there is a separate guide for renovations. The website also has a technical manual that explains every aspect of building a new home and busts many myths along the way. Go to www.yourhome.gov.au.

Two Western Australian guides on 6 star are available from the Sustainable Energy Association. These publications are available to download at www.seaaus.com.au.

Building and Energy | Department of Mines, Industry Regulation and Safety
1300 489 099
8.30am – 4.30pm
Level 1 Mason Bird Building
303 Sevenoaks Street (entrance Grose Avenue)
Cannington Western Australia 6107
M: **Locked Bag 100, East Perth WA 6892**
W: **www.dmirs.wa.gov.au/building-and-energy**
E: **be.info@dmirs.wa.gov.au**

Regional Offices

Goldfields/Esperance	(08) 9021 9494
Great Southern	(08) 9842 8366
Kimberley	(08) 9191 8400
Mid-West	(08) 9920 9800
North-West	(08) 9185 0900
South-West	(08) 9722 2888

National Relay Service: 13 36 77
Translating and Interpreting Service (TIS): 13 14 50
This publication is available in other formats on request to assist people with special needs.

DMIRS19_6167 / Online