



# Sustainable Housing Toolkit

## What is Sustainable Housing Design?

Building to reduce your use of non-renewable resources – electricity and gas is the largest factor of consideration in sustainable housing design. This can be largely achieved through clever passive solar design coupled with the correct orientation of the home with respect to the sun.

In many cases fresh rainwater water collection and grey water recycling, converted for garden use is also a part of the overall site design.

Sustainable housing design offers enormous lifestyle advantages including: reducing the on-going living costs from the time you move in to your new home, reducing water use, and in general, building to reduce your carbon footprint. The result is lower environmental impact, greater cost savings to the occupant and more luxurious lifestyle benefits based on a more liveable, comfortable home design.





## Vivid Living - From Concept to Completion

Vivid Living offers a unique range of services to assist clients with building their very own high-performance sustainable home. Services include home design and client consultation, assistance with council permits, land selection advice, building project management and more.

### **Planning & Design**

Vivid Living created high-performance sustainable housing designs that are exceptional in their quality, comfort and style. Timeless and elegant our homes are designed for pleasurable cost-efficient luxury living now, and for future generations.

### **Permits, Planning & Block Selection**

From the simplest of designs and project reviews to full-scale, start-to-finish, construction projects, Vivid Living offers a wide array of planning, design, and construction services. We can also advise clients with block selection, permits and council planning.

### **Construction & Project Management**

Making the process of dream home design and build a successful and pleasurable path to complete success, Vivid Living delivers sound advice, clever solutions and timely design assistance and planning to its clients enabling highly-efficient, well-performing results. Avoid unnecessary costs, stress and delays in construction planning, permits and design with Vivid Living. We have the industry expertise to get the job done, first time, every time.

### **Luxurious Lifestyle**

Sustainable housing design offers enormous lifestyle advantages including: reducing the on-going living costs and other luxurious lifestyle benefits based on a more a liveable, comforting home design.

### **Passive Design Technology**

Vivid Living designs homes that can reduce your carbon footprint via a range of passive solar designs and materials used. The result is lower environmental impact and greater cost savings to the home owner. Make your new home the smartest on the block with Vivid Living's clever passive solar design technology.

### **Environmentally Friendly**

Environmentally friendly home design is born of many considerations. While passive design is central, choice in materials such as high-rated insulation, double glazing and solar screening, coupled with clever floor plan layout will make huge impacts. Ask us about better environmentally friendly design considerations today, designed to make your new home an environmental champion.

## Simple steps to reducing your cost of living:

1. Small is beautiful! Don't make your home any larger than it needs to be. Consider creating rooms that can be multi-functional such as using a room as both an office and a guest room. Make your home as open plan as possible to avoid cool back rooms and wasted space in long corridors. However it is important to be able to close off areas e.g. guest area, to save on heating and cooling costs. Avoid very high ceilings.

2. The orientation of your home with respect to the sun is very important. Site your house on the block so that the main rooms face north thus giving full access to the winter sun, and minimise the number and size of windows on the east and west. There are very few blocks which are unsuitable for this. Think about it - do you really need your house to face the street, where is the best place for the garage etc. This will not add to the cost.

3. Use passive solar design. This means to design your house to take advantage of the winter sun to heat your house, but at the same time keep out the hot summer sun. This is easily done by having wide eaves on the north side. For example, 700mm for waist high windows, 1200mm for floor to ceiling windows. They shade the windows from the summer sun but let the sun into the house from the end of March right through the cooler months. If you were planning a house with no eaves, adding them will add a small percentage to the overall cost but you will not need outside blinds. Other features of passive solar design include cross-flow ventilation to enable natural cooling from cool breezes in the evening and thermal mass which helps to stabilise temperature swings.

4. Install the best insulation in ceiling, walls and under the floor. All these keep you warmer in winter and cooler in summer. Ask for a minimum of R3.5 for wall insulation

and R5 in ceilings. Anything which you haven't factored into your costs will add to them but it is worth it!

5. Consider double glazing windows or using Comfort Plus/low E glass. These options will reduce heat loss during winter and lessen heat gain in summer as long as the direct sun does not hit the windows. See point 1 above. Double glazing will add approximately 1% to the total building cost, and can reduce energy loss through windows by 40% or more. See [www.wers.net](http://www.wers.net) - Window Energy Rating Scheme or [www.awa.org.au](http://www.awa.org.au) - Australian Windows Association

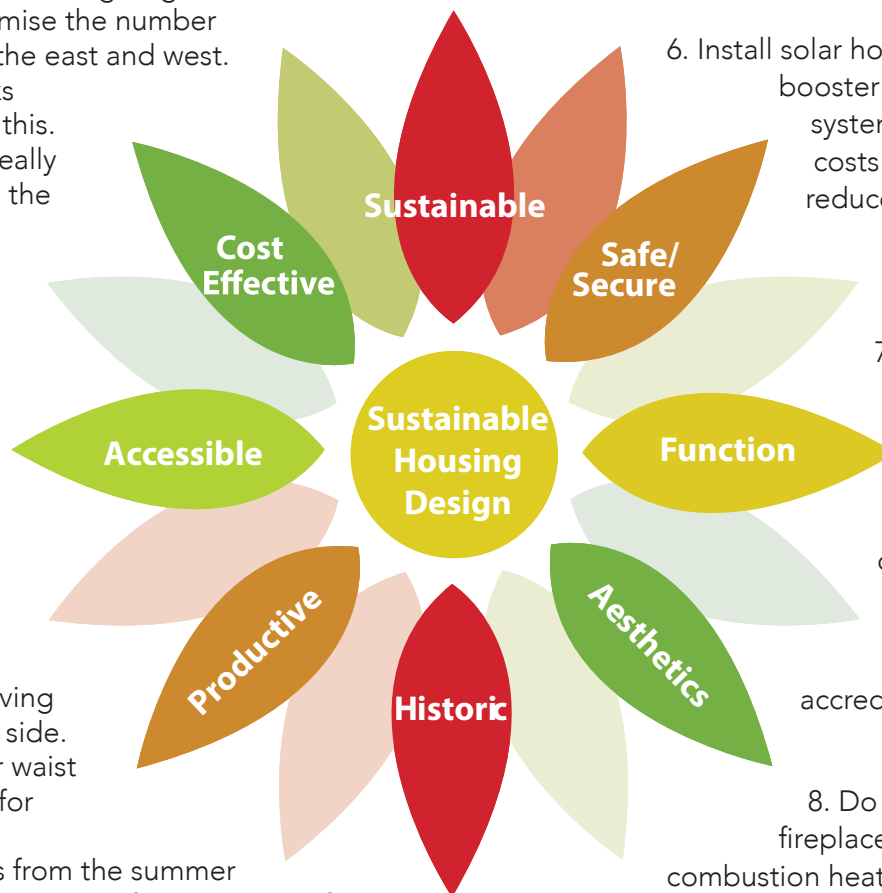
6. Install solar hot water with an electric booster or a heat pump hot water system and your water heating costs will be considerably reduced. Very little extra cost compared with gas or electricity water heaters

7. Consider the installation of sufficient solar PV panels to cover average day time electricity usage. This will considerably reduce your electricity charges. To further reduce carbon emissions buy accredited Green Energy.

8. Do you want to have a fireplace? Install an efficient slow combustion heater inside the house on a masonry wall instead of on an outside wall.

The masonry wall will add thermal mass and act as a heat bank which will provide you with heat after the fire goes out. Consider installing a wetback on the heater to save on water heating costs during winter.

9. Make sure your house is tightly sealed by installing draught proofing materials on doors and windows. Also look for draughts through gaps where ceilings and wall join, and around skirting boards.







**From Concept to Completion**

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