

smarthousing

Smart Housing is good practice in designing, planning and building homes to make them more socially, environmentally and economically sustainable.

This fact sheet highlights some of the most important things you can do to improve the sustainability of your home. That is, improve the likelihood that your home will meet your needs as they inevitably change throughout your life, as well as make it more liveable, safe, secure, cost-efficient and environmentally friendly.

TOP 10 FEATURES OF A SMART HOUSE

1. Efficient water heating
2. Step-free shower
3. Space and movement
4. Water conservation
5. Address the street
6. Good passive design
7. Safer floors
8. Outdoor living
9. Long term maintenance
10. Casual surveillance

1. Efficient water heating

The Queensland Department of Innovation and Information Economy, Office of Energy, reports that up to 40% of domestic energy utilised in Queensland is for water heating. Most households have an inefficient electric storage hot water system.

Installing a greenhouse gas efficient hot water system and locating it in close proximity to the hot water outlets could save up to 80% on water heating bills and subsequently reduce greenhouse gas emissions.



TOP 10 FEATURES

Greenhouse gas efficient hot water systems include:

- hot water systems that are eligible for at least 24 *Renewable Energy Certificates* (solar-gas, solar-electric or electric heat pump); and
- gas water heaters with a minimum of five stars on the *AGA Energy Rating Label*.

2. Step-free shower

Showers built with a level, step-free threshold (known as hobless showers) are a safer option than those built with a step because they minimise the risk of tripping. Shower thresholds should be level or have a maximum step of 10mm.



Photo courtesy of Civic Steel Homes

A step-free (hobless) shower is easier for everyone to use.

3. Space and movement

A house will be more adaptable to accommodate a family's changing needs if the kitchen, living room, bathroom, toilet, semi-recessed hand basin and at least one bedroom (or a room suitable to be converted to a bedroom) can be reached along an 'accessible path' from the front boundary or car parking area.

The key elements of an 'accessible path' include level thresholds (maximum 10mm change in level) and a minimum width of 1200mm, except through doorways which should have a minimum clearance of 850mm. (Refer to the 'Accessible Paths', 'Kitchens' and 'Bathrooms' fact sheet for more information)

The accessible bedroom will have enough space for a bed (1500mm X 2000mm), with 1200mm

clearance on two sides and 1500mm clearance on the third side. It could be used as an office or living room until needed.

4. Water conservation

Ordinary households can significantly reduce their water consumption and subsequently reduce their water bills by using:

- water efficient appliances and fittings with a AAA or higher water conservation rating;
- landscaping that requires little water; and
- a water tank for collecting roof water for use on the garden and for flushing toilets.

5. Address the street

The way in which the house and landscaping address the street should clearly define the separation between public, semi-public and private spaces. The house should have:

- a prominent, easy-to-read house number to assist visitors and emergency services to locate the house;
- a well-defined and separate driveway and pedestrian entries that are clearly visible from the street or from neighbouring properties;
- good external lighting for security and surveillance purposes;
- a step-free entrance that can be accessed by a range of people including parents with a pram, older people or a furniture removalist; and
- considered its relationship to the street and the neighbourhood.

6. Good passive design

Passive design makes use of climatic conditions such as the sun and wind direction to increase the comfort of the occupants by naturally heating the home in winter and cooling it in summer. This reduces the need to install or utilise artificial heating and air-conditioning systems which increase electricity bills and produce greenhouse gas emissions.

The following design characteristics should be considered to make best use of the benefits of passive design:

- orientation for breezes and solar access;
- thermal mass versus lightweight construction;
- cross-ventilation;
- insulation to roof, ceiling and walls;
- wide eaves to shade external walls; and
- window shading.

Discuss with your builder or designer how the principles of passive design best apply to the site and location of your home.

7. Safer floors

People should be able to move safely and with confidence throughout the house. Wherever possible, reduce trip hazards by designing floors to be level with a continuous and even surface (no higher than a maximum of a 10mm step). Also consider the following characteristics when selecting flooring:

- slip-resistant, especially in wet areas, to minimise the risk of falls;
- highly durable materials; and
- can be easily cleaned.

8. Outdoor living

Outdoor living areas are a necessary feature for homes trying to take advantage of the Queensland climate. It is recommended that play areas and outdoor entertainment areas are covered with effective sun-shade structures.

The area is ideally a useable, permanently covered outdoor space with a minimum area of 12m² for houses and 9m² for units, with a good relationship to the indoor living space.

9. Long-term maintenance

Careful selection of materials and consideration of the design of a Smart House can reduce the repair and ongoing maintenance costs throughout the life of the home. It can also delay or reduce the eventual cost of replacing materials.

Some considerations are:

- the maintenance requirements and life expectancy of selected building materials, fittings and appliances;
- the design of the home allows easy access to items that require regular maintenance or inspection; and
- the use of low maintenance materials in areas which are difficult to access.

10. Casual surveillance

Planning ahead for safety and security can reduce the risk of injury to people in the home, encourage social interaction with neighbours and can also reduce property related crime.

Design your home to:

- provide easy surveillance of play areas from the kitchen or main living areas; and
- allow surveillance of the street and adjacent public open space from the main living areas.