

## **Passive design**

Passive design means designing your home to avoid or reduce the need for mechanical cooling or heating. Good passive design responds to local conditions to make your home more comfortable. It also reduces your household running costs because you'll use less energy, water and other resources.

### **Key elements of passive design**

The key elements of building a home using passive design principles include:

- responding to local and site climatic conditions
- correctly orientating your home on the block of land
- keeping summer sun out and letting winter sun in
- capturing cooling summer breezes and promoting air movement in summer
- excluding cold winter winds
- shading eastern and western walls and glass all year round to minimise heat gain
- locating rooms to get light and heat where it's needed most
- insulating walls, roof, and floor to minimise summer heat gain and winter heat loss
- building high ceilings and open plan living areas to facilitate air movement
- installing screened and shaded areas for outdoor living in summer

### **Passive design for Brisbane homes**

You can consider passive design principles not only when you are building a home but when you are renovating or looking to buy an existing home. For example, look at the home's position on the block and check if the roof is insulated.

If you are going to use passive design principles, consider Brisbane's climate conditions:

- in summer, breezes generally come from the north east and south east
- in summer, the sun rises south of east and sets south of west and reaches an altitude of 86° midsummer
- winter winds come from the south, south west and west
- winter sun rises north of east and sets north of west. It has a low altitude of 39° midwinter
- at all times of the year, there are high levels of Ultra Violet Radiation (UVR) which are harmful both directly and indirectly