

Orientation Information Sheet

What is orientation?

Orientation is about the position of your site, and your home, in relation to the things around it including the street, neighbouring buildings and of course, the angle of the sun and the wind that will be used to heat and cool your home.

How does good orientation help?

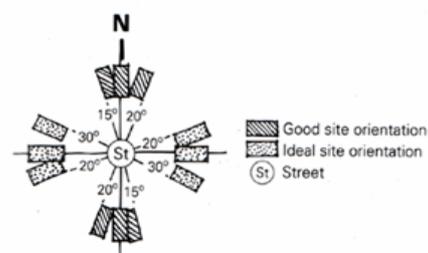
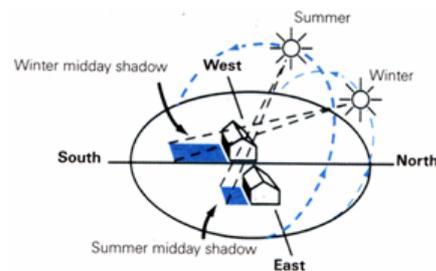
Good orientation that works with the climate rather than against it is the cornerstone of efficient passive solar design. You can achieve good solar performance at minimal cost if your site has the right characteristics.

To help you to decide what those characteristics should be you should first prioritise your heating and cooling needs by understanding the key features of the climate. In the South West we need a combination of passive cooling in the summer and passive heating in the winter. Knowledge of prevailing winds is also useful to maximise ventilation. You should also observe the impact of adjacent buildings and existing landscape and weather patterns on your site.

What orientation is ideal for maximising solar passive potential?

Permanent solar access is likely to be achieved on a north-south block that receives good access to northern sun with minimum potential for overshadowing by neighbouring houses. If north is to the street, your living areas will face the street for solar access. *The ideal orientation for living areas is within the range 15°W-15°E of true or 'solar' north. (20°W-30°E of true north is considered acceptable).*

This allows standard eave overhangs to admit winter sun to heat the building and exclude summer sun, with no effort from the occupants and no additional cost. A north-facing slope (sloping away and down from the house to the north) increases the potential for access to northern sun and is deal for higher housing densities.



Where possible, choose a site that can accommodate north-facing daytime living areas and outdoor spaces. Views to the north are also an advantage, as north is the best direction to locate windows.

What if my block does not have ideal orientation?

On narrow blocks, on sites with poor orientation or with limited solar access, as is often the case in higher density urban areas, an energy efficient home is still achievable with careful attention to design. A larger budget may be required. Use of advanced glazing systems and shading can achieve net winter solar gains from windows facing almost any direction while limiting summer heat gain to a manageable level.

Sites running E-W should be wide enough to accommodate north-facing outdoor space whilst not being overshadowed by your northern neighbour.

A south-facing slope increases the potential for over-shadowing. If the view is to the south avoid large areas of glass to minimise winter heat loss.

Anything else?

If you are unsure about the orientation of your site you should enlist the help of an expert as the implications of buying a site with the wrong orientation could be very costly. Ask your designer or architect to pay a visit to your proposed site to check the suitability of its orientation. This service may be included as part of the project fee.



Work with the City of Mandurah at the planning stage to check the planning controls governing your site. For example, building setbacks from boundaries and height limits, as they may affect how you build on your site



It is also important to check whether your building block was previously used for land fill, farming or industrial activities that may have left harmful residues and waste. The City of Mandurah should be able to provide this information plus advise you of any other special requirements applying to your site.



Ensure you carefully examine the placement of your home, the materials used, and the overall design to mitigate the potential effects of natural disasters. If your land is subject to flooding or bushfire threats contact the City of Mandurah for advice.

Source: Your Home – Design for lifestyle and the Future technical manual (a joint initiative of the Australian Government and the building and design industries)