

FACT  
SHEET

## THERMAL PERFORMANCE

## WINDOWS & GLAZING

WINDOW LOCATION AND GLAZING TYPE PLAY A KEY ROLE IN THE THERMAL PERFORMANCE OF A HOME. IF POSITIONED THOUGHTFULLY, WINDOWS CAN WARM A HOUSE IN WINTER AND HELP KEEP IT COOL IN SUMMER. UNFORTUNATELY IN MOST BUILDINGS, WINDOW PLACEMENT IS OFTEN POORLY THOUGHT OUT, RESULTING IN UNWANTED HEAT ENTRY IN SUMMER AND SIGNIFICANT HEAT LOSS IN WINTER.

### WINDOW LOCATION & TYPE

The first thing to consider is passively controlled solar gain. In our homes we have minimised windows on the eastern and western sides of the houses to prevent the hot morning and afternoon sun from penetrating the buildings. Instead, the window area has been maximised on the northern side of houses to allow in low-angle winter sun for warmth. Importantly, we have chosen a high thermal mass flooring material (decorative concrete), which will absorb the heat and then radiate it as a source of steady heating. The use of shading devices including appropriately positioned deciduous trees and vines, as well as shade sails, will block out the summer sun to help keep the homes cool during the hotter months.

Correct window placement is also vital for effective cross ventilation, which helps to cool homes during warm weather, as well as help maintain indoor air quality. We have consciously designed our houses to be only two rooms deep to allow good air movement from the source of the prevailing cooling winds on the southern side, through to the rooms on the north.



### MORE INFO

Your Home Design Guide  
[www.yourhome.gov.au](http://www.yourhome.gov.au)

Window type and size is also important. By making the windows on the northern side larger in size, air is drawn through the rooms even when conditions are still. We've also opted for sliding windows (and doors), frameless double sash and louvered types rather than awning windows as they can be opened wider to allow better airflow. Finally, although we won't be installing air conditioning, we have specified air conditioning rated seals to minimise heat leakage and draughts.



## GLAZING

We have opted for low-e (low emissivity) glass which regulates heat flow. The glass has a laminated coating on it which allows light to pass through, but it minimizes heat loss. Making sure that these windows are adequately protected during summer to prevent unwanted heat gain as outlined above is obviously critical.



Heat loss in winter is further reduced through the use of pelmetted curtains with heavy drapes that hang right to the floor. This traps air and effectively acts as insulation. Curtains are not practical in the kitchen, so here we have used double glazing, where two panels of glass are set in the one sealed frame, with inert gas in between. Double glazing dramatically reduces heat flow and whilst it is very effective, it is also expensive, which is why we have limited its use to the one location where it is the most practical solution.



To find out more about our window positioning, types and sizes, check out our [building plans](#).

For product or supplier details go to the Josh's House Partnerships Page : [www.joshshouse.com.au/partnerships](http://www.joshshouse.com.au/partnerships)

