



12. Window treatments for energy efficiency

Whether it's curtains or blinds, awnings or shades, the right internal or external coverings on windows can make a real difference to energy savings. Well chosen window treatments can keep heat in during winter and keep it out in summer, save energy and reduce power costs.

Your choice of window treatments depends on the design of your building and your local climate. You can make significant improvements with a variety of simple and relatively low cost window treatments. Opening and closing windows and curtains and retracting awnings at appropriate times will also improve energy efficiency.

Getting started

External eaves and shading

Overhanging eaves, verandahs and shading sunny spots with bushes or vines are effective ways to stop summer heat and direct sunlight from getting into the building (or shining on external walls).

Plant deciduous bushes, trees or vines so the winter sun can get through.

Make sure any plantings don't shade solar hot water systems or solar PV panels, make the rooms too dim inside or create damp in the building.

Awnings

Awnings made of canvas, aluminium, synthetic fabrics or wood can be effective, particularly on the western end of a building facing late afternoon summer sun. Awnings can be fixed or movable and be operated from outside or inside the building. They need ventilation to stop hot air from being trapped around windows.

Reflective coatings

On particularly exposed windows (generally east and west facing) you can use tinted or reflective window coatings. These bounce light and heat back. However, they will block winter sun, so are most appropriate in warm climates.

Internal blinds and curtains

Vertical or horizontal slat blinds are better at reducing heat in summer than in preventing heat loss in winter.

Light coloured blinds will reflect heat more. Heavy, double layer curtains provide quite effective window insulation for heat gain and heat loss.

Fabrics vary a lot in their insulating capacity. Having curtains going all the way to the floor slows the flow of heated air coming in contact with the cool windows during winter. Close the windows and curtains on cold evenings and in the morning on hot sunny days (especially if any sun shines into the room).



CHECK POINTS

- ▶ Stop summer sun from shining in with external shading.
- ▶ Trap the cool morning air in summer and stop winter heat from escaping by closing doors, shutting windows and drawing curtains
- ▶ If building or renovating consult an expert on passive solar design for advice on window treatments.

Pelmets

Pelmets are effective at reducing heat loss in winter. Without pelmets, warm air cools against the windows and sinks to the floor. Warm air rises towards the ceiling, causing a convective flow that can suck heat out of a room.

An alternative to a pelmet is a strip of wood behind the top of the curtains or blinds. Or use curtains that reach the ceiling, so the roof acts like a pelmet.

Sealing gaps

Remember to seal any gaps in window and door frames. Replacing very draughty sliding doors or windows with better sealed and insulated units can be cost effective, especially in cold climate zones.

Double glazing

Double glazing dramatically improves window insulation. This involves two layers of glass with an air or argon gas layer to reduce heat transfer. You usually buy window double-glazed units ready-made. They are relatively expensive but save a lot of energy over the life of a building.

DIY double glazing

There are inexpensive kits on the market that give some of the benefits of ready-made double-glazed windows. One type uses double-sided adhesive tape to hold on a transparent heat-shrinkable film.

Once fitted, they are made taut using a hair dryer. Another type of kit uses adhesive magnetic strips and steel foil to hold a removable, transparent plastic (optical grade acrylic or polycarbonate) panel to the inside of the window. You can buy these kits from some hardware stores.

You can also take the really basic DIY approach and fit 'bubble glazing' – just tape heavy grade bubble wrap in place on each window. This acts like double glazing while still allowing light through.



Replacing windows

New windows are labelled with an energy efficiency rating of 0 to 10 stars. Two sets of stars are used to rate heating and cooling. The more stars, the more insulating they are.

Windows should be oriented so they are shaded in summer but allow in winter sun. How effectively they direct breezes or allow hot air to escape is all part of passive solar design (PSD). If you are building or renovating, consult a PSD expert to get these placements right for maximum energy efficiency.

Further resources

Check out A Greenhouse Around the Corner website:

www.agreenhouse.net.au/helpful-resources

Related fact sheets

Fact sheet 4: Draught sealing

Fact sheet 5: Installing insulation

Fact sheet 16: Understanding passive solar design

For more fact sheets, go to A Greenhouse Around the Corner website:

www.agreenhouse.net.au/fact-sheets