

## BEHAVIOURAL CHANGE AND SOLAR SHADING

### SUMMARY

- ✓ Behavioural change can reduce building's energy consumption.
- ✓ Adopting the BBSA's Best practice on shading can save energy and money on summer cooling and winter heating.
- ✓ Energy Services Directive (ESD 2006/32/EC) has introduced a requirement for the public sector to take an exemplar role in the adoption of energy efficiency measures.


### 1.0 INTRODUCTION

"Behavioural change is a key part of the UK strategy to reach its environmental and energy saving targets. With energy prices increasing and set to increase further in the future the only way for homeowners and businesses to save money on energy is to change the way we use it - this is behavioural change."

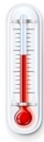

Carbon Trust, (2011)

When energy was cheap and plentiful we did not think of how we should use the everyday things that could save energy. Just through behavioural change and therefore at no extra cost, a building's energy consumption can be reduced by up to 10%. Solar shading, often thought of as the decoration of the window only, should be part of this energy saving strategy.

By adopting the BBSA best practice on shading you will soon be able to save energy and money.



**The BBSA best practice on using solar shading to maximise energy savings**

 <b>Summer</b>	 <b>Winter</b>
<ul style="list-style-type: none"><li>✓ Close the blinds at night on the east and south-east elevations to protect from early morning heat gains</li><li>✓ Open the blinds at night on the west and north-west elevations to assist night time cooling</li></ul>	<ul style="list-style-type: none"><li>✓ Close the blinds after the sun goes down to retain heat</li><li>✓ On sunny days open the blinds to maximise the heat gains from the winter sun</li></ul>

## 2.0 SUMMER COOLING

One of the traditional ways of minimising the heat gain in buildings is to take advantage of nature and plant trees outside your windows. In the summer the leaves provide shade (just like shutters) and in the autumn when they shed their leaves the sun will be able to enter the building and provide natural winter heating.

When we go on holiday to say Italy or Spain, we tend to do the same as the locals and close the shutters on the windows in the early morning to keep the excessive heat out. Later in the day the room is a cool refuge from the summer heat. This is another traditional and efficient method of keeping houses cool without using energy.

Summer months in the UK can also get very hot. Many of our buildings are designed with large areas of glass and as a result will need cooling with either fans or air-conditioning systems to keep them pleasant and comfortable. This unfortunately uses energy and costs us money. Instead, we should look for ways of utilising passive cooling methods available, like planting trees and installing solar shading.

## 3.0 WINTER HEAT

A significant amount of heat can be lost from a building during the cold winter months especially through the windows as they tend to be the weak point in the building insulation. The low angle winter sun can help us maximise the heat gains and blinds and shutters play an important role in reducing the amount of heat lost. They can be raised to maximise the solar energy entering the building when the sun shines and closed after sunset insulating the building throughout the night. This means less heating will be required in the morning to get the building to a comfortable temperature and less money will be spent on the heating bills.

## 4.0 BEHAVIOURAL CHANGE IN ACTION

In February 2016, the European Commission unveiled the much-awaited Heating & Cooling Strategy in the framework of the Sustainable Energy Security Package. A clear initiative to gather more data in order to give a comprehensive picture of heating and cooling in the EU, as it represents around 70% of energy consumption in buildings.

### 4.1 DOMESTIC SECTOR

One BBSA member installed **reflective** blinds in a domestic building along with advice to the owner that if he closes the blinds in winter after the sun has gone down, he will reduce heat loss, keep more heat in and save energy. The owner monitored his central heating carefully and found that after having the blinds installed he was able to switch his heating on an hour later than usual therefore saving energy and money.

### 4.2 NON-DOMESTIC SECTOR

Energy Services Directive (ESD 2006/32/EC) has introduced general targets for saving energy. As part of this directive there is also a requirement (Article 5) for the public sector to take an exemplar role in the adoption of energy efficiency measures, in particular to adopt measures to improve energy efficiency, inform the public and businesses of the measures adopted and promote the exchange of good practice.

To read more visit: <http://ec.europa.eu/energy/en/topics/energy-efficiency/heating-and-cooling>

In the USA a number of schools have been using behavioural change techniques to save energy and money. Savings were made through techniques such as switching computers off, regulating their energy use on heating and cooling through monitoring and closing the blinds. After two years of behavioural change/energy conservation measures 11 schools had saved £435,000 on their energy bills.

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