



How to green up your home

Part 5: Windows and doors

Windows and doors.

'How dull', you sigh, before skipping onto a different page, or another website. Perhaps. But you do have them, after all, and at some point there's a very good chance you'll buy some, maybe to replace the ones you've got or even for a new house or extension.

We take them completely for granted, assuming that they'll let light in, keep the wind and rain out, provide ventilation, give us connection to our surroundings and stop folk from breaking in. Suddenly that's quite a few things to ask from a bit of frame and glass, so what should we be looking for? Well, let's start with the basics of what the window or door should do:

Provide security

Many of us don't actually lock our doors and windows during the day, but we do when we go away. Locks and security features on windows and doors are quite sophisticated (and complicated) so the simplest thing to do is make sure that they achieve 'Secure by Design' status. This is a standard set out by the Police that effectively says that they're very secure. It can also make a difference on your home insurance premiums. It doesn't involve keypads or retina scanners, just good quality locks and ironmongery and most manufacturers offer this.

Stop the heat getting out but allow the light and views in

Believe it or not, the glass in windows and doors is much more insulating than the frame, so the bigger the unit (and the higher the proportion of glazing to frame) the more insulating it's likely to be. While double glazing is standard these days, triple glazing is slowly becoming more popular though it costs around 20% more. Depending on how much energy this might save you the upgrade may be worth thinking about.

'But don't windows lose as much heat as they let in?' I hear you ask. Well, the answer lies back in high-school physics... The heat and light we receive from the sun is emitted as long-wave radiation. When this passes through glass it changes to short-wave radiation, which doesn't readily go back

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through glass. Once inside a room this short-wave radiation then bounces about and is absorbed by what it strikes, like floors, walls and furniture, which is what makes them feel warm. It's also absorbed by the frames and glass of the windows and doors and then conducted back outside.

To reduce this conductive heat loss window frames should be 'thermally broken', which means they contain a layer of insulation that reduces heat loss. If they open they should have at least two sets of seals between the frames. Glazing should have argon or krypton gas in the space between the panes of glass as this reduces the amount of heat that will escape back out, and the 'spacer bars' – the shiny strips between the edges of the panes of glass – should be classed as 'Warm Edge'.

When all of these features are taken into account we end up with a rate of heat loss, called its 'U-value', which is measured in Watts per square metre of the outside surface of your door or window, per degree temperature difference between inside and outside, or W/m².K. All very technical but this is the main performance characteristic the manufacturers use. Building Regulations currently require windows and doors in new buildings to have a u-value of no more than 1.8W/m².K, and less for extensions.

The British Fenestration Rating Council has a useful website that explains the

energy efficiency of windows in a lot of detail. Remember, there's no point in getting fantastic windows if they're poorly fitted! Make sure the gap between the window and the hole in your house is tightly packed with flexible insulation to stop draughts and heat loss.

Ventilation

When it comes to thinking about how windows will open there are a few different styles to choose from: sash and case, side-hung casements, tilt & turn etc. What you choose will tend to be up to personal preference but, when choosing new windows, look for units that have 'restrictors' that can keep them open a fixed amount. Sash and case are usually the draughtiest, purely because of their sliding design. Windows that compress a seal when they close, like any hinged window does, tend to be more draught-proof. Seals should be replaceable when they wear out. You're also usually obliged to make sure your windows have 'tricklevents' in them too – the small flaps at the top or side of the window frame, which you can open and close.

Materials

Of all the aspects of choosing new windows and doors, this is the one that needs the most thought. There are all sorts of choices

when it comes to choosing the materials for windows and doors, including wood, steel, aluminium, uPVC and composite, and many combinations of these. Rather than go into each in detail (which there isn't the room to do here) our knowledge and experience over the last fifteen years has led us to use timber-framed units with aluminium external cladding.

Why? Well, firstly, timber is the easiest of all the materials to adjust and repair. There's no such thing as a maintenance-free window or door – if the manufacturer says something is maintenance-free it probably means it can't be maintained! Secondly, timber is the most insulating of all materials. Thirdly, aluminium facings (which can be any colour) on the outside protect timber from dampness and offer a long-lasting, weather-proof finish. Lastly, although aluminium is not a particularly green material, timber really is.

Planning Permission and Building Control

You will need Planning Permission to change your windows if you live in a Listed Building or in a Conservation Area. You'll also need Listed Building Consent in these situations. You don't need a Building Warrant to change your windows, though any replacements should meet the Building Regulations. If in any doubt at all, give your

local Council a call. They're really helpful and will give you the information you need.

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