

ARCHITECT'S VIEW



Absolute Architecture's **Kate Cooper** explains how to get more light into your home – whatever its orientation

Design ideas for more daylight

When we talk about orientating a new home on a plot, the Passivhaus gold-standard and general design principles mean that you want to maximise the amount of sun hitting your home – so you can make the most of solar gain and minimise heating bills in the winter. The simple answer is to have a north-to-south home, with the majority of your glazing looking out to the rear elevation and soaking up the most sun. However, that's not always possible. Sometimes, there will be obvious site constraints – a view to the north, perhaps, or maybe the road layout dictates the approach to the house and therefore the most appropriate orientation.

Introducing light

Existing properties may not abide by any principles of good design – they may be dark, gloomy and quite energy inefficient. One common strategy would be to construct a contemporary extension that provides a connection to the garden and creates that more open-plan, modern zone we're looking for. From a Passivhaus perspective, we can capture those solar gains through the use of glazing and keep warmth inside. But a glass box extension isn't a one-size-fits-all solution for bringing in sunshine.

When approaching a renovation or extension project, we'll work out what you actually need before diving in – whether that's an additional structure, or some clever reconfiguration to your circulation spaces. The aim is to ensure a good flow around the house, and make sure there's plenty of light coming in. We use mapping data to analyse the sun's path around your home so that we can maximise the daylight you get, using 3D CAD modelling to help explain this so that it's easy for you to visualise. However, in those poorly-orientated properties, we need to be clever about how we can work around what's already there.

For example, if you've got an elevation to the north that offers a stunning view, you might be a bit more selective about how to expose it. Rather than a whole wall of glass, you may have key points in the building that frame the vista and bring in light through other ways. One project we've worked on had a very dark and gloomy north-facing kitchen – we added an extension and rooflights to bring in more top-down daylight as well as specifying neutral finishes to help bounce brightness around the space.

One successful strategy involves opening up a smaller house vertically by adding a double-height entrance – especially if it can be done on a south-facing elevation. This can help add drama to the home and flood it with plenty of light, which can be borrowed by other spaces. This also works on Passivhaus principles as you



Rooflights and glazing on the front elevation of this sustainable retrofit transformed the gloomy 60s house into a dramatic, light-filled abode

gain the warmth from the sun but can quickly exhaust excess hot air upwards and out through the roof windows at the top.

However, sometimes that glass wall is unavoidable. I'm working on a house in the Isle of Wight with a panoramic view of the Solent to the north. We'll probably end up with quite a bit more glass than we normally would have on that elevation, but will mitigate the heat losses by specifying additional insulation elsewhere.

Solar gain & overheating

While capturing sunlight is key to maintaining a low-energy home, excess heat is the issue that starts to crop up. When you introduce additional glazing, one way to quickly expel warm air is by having electric opening rooflights – you can often set these to open and close automatically depending on the indoor temperature and humidity. Shading is another key way to ensure you don't overheat your property. Using external blinds means you stop too much warmth from entering the house in the first place – and if you plan it right, these can recess discreetly. Roof overhangs help shield you from a high sun, but if you're working with a west-to-east orientation, be mindful of how that low morning and evening glare will impact your enjoyment of your home.



This riverside extension features an external overhang to protect the house from excess heat gain, as well as rooflight that exhausts hot air upwards – and leads to a terrace

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