

Tackling the overheating issue:

The ultimate industry guide to solar control glazing in residential applications.







Overheating: a hot topic

61%

of specifiers have seen rising demand for solar control glass

62%

of specifiers see climate change as driving demand for solar control glass All of the top-ten warmest years in the UK have occurred since 2002, a sign of the grip that climate change continues to have.

And the Summer of 2021 saw new records broken that add fresh concern to the climate debate, with the Met Office issuing its first ever extreme heat warning in the UK.

An uncomfortable truth is that a hotter climate holds alarming consequences, not least exposed by the UN's landmark climate change report declaring a 'code red for humanity'.

Estimates vary that between 2,000 and 8,000 heat related deaths occur in the UK each year, much of the risk thought to be caused by exposure to high indoor temperatures.

So, keeping buildings cool is increasingly as much a safety issue as it is one of comfort.

But combatting the issue with cooling systems alone conflicts with our obligations to meet net-zero emissions targets. One study estimates that air conditioning accounts for almost one tenth of the UK's electricity consumption.

Building product manufacturers, architects and specifiers, developers and policymakers each need to find innovative solutions for combatting the risk of overheating in a sustainable way.

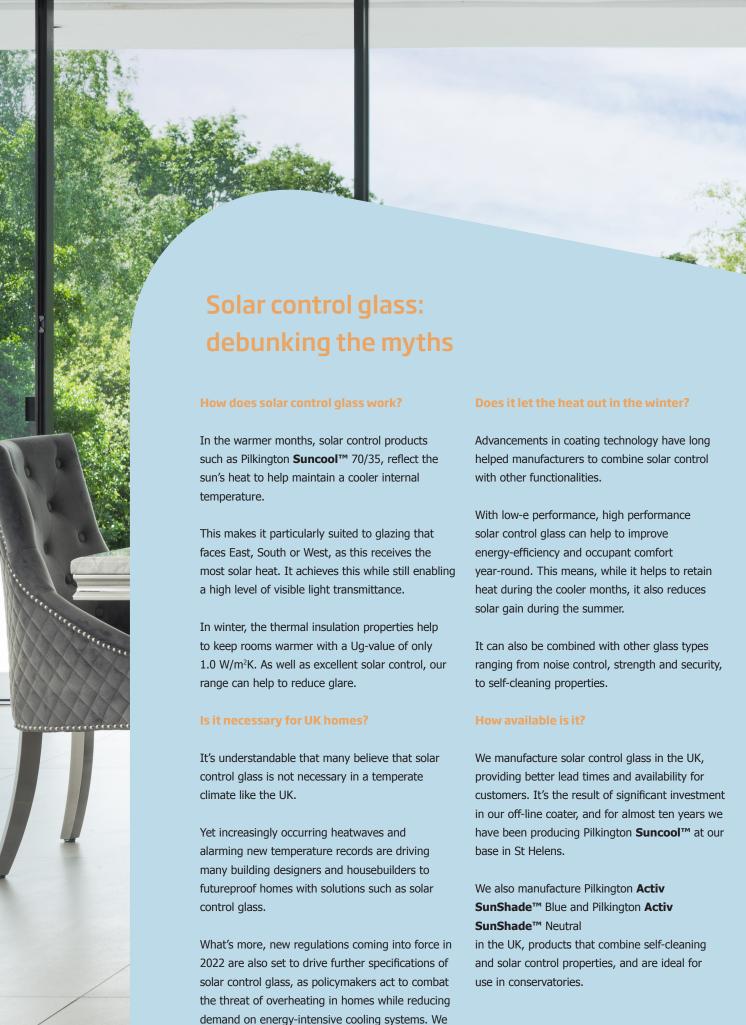
And encouragingly, building policy is beginning to recognise this critical issue, with new regulations set to be introduced amid a major housing boom that will leave a lasting legacy on the UK – and at a potential tipping point for climate change.

Innovative, high performance building products like solar control glazing, which are commonplace for controlling building temperature in hotter climates, will be increasingly used in the fabric of UK homes under the new regulations – providing a sustainable way of keeping the heat at bay.

It's clear that the specialist glazing is already finding a strong footing in the UK market. A recent industry survey we conducted found that two in five specifiers (41%) had seen a rise in demand for solar control glass in the last 12 months.

Building regulations, energy costs and climate change were each cited as key factors behind this demand increase.

We'll be working alongside the building design community, and the glass and glazing supply chain, to help housebuilders in meeting or surpassing these new regulations, creating safer, futureproofed homes.



unpick these new regulations on page five.

Around the world: how solar control is making a difference in tougher climates

The Jade

Tall buildings clad almost entirely in glass have some significant advantages. They afford their occupants a spectacular view of the surroundings, and their interiors also tend to be filled with glorious natural light, dawn till dusk.

But, without careful engineering, these benefits can come at a significant cost – especially in locations with extreme or variable climates – and that is maintaining a steady interior temperature throughout the changing seasons.

This was exactly the challenge faced by the designers of The Jade, a new development in downtown Nova Scotia, Canada.

On its first two floors, the building maintains its much-loved 1920s art deco façade, behind which commercial shopping units will be housed. Above this, however, is a fully glazed 11-storey tower that rises to take its place in the Halifax skyline. While winters in Halifax drop well below freezing – the lowest temperature ever recorded was -25°C and winter temperatures often reach -8°C – its summers often reach 30°C, so the glass on the building had its work cut out regulating the internal temperature.

The architect chose to deploy Pilkington **Suncool™** 50/25, a solar-control glass that helps prevent excessive heating during the warmer months.

It works thanks to a cutting-edge multi-layered coating that lets in just 25 per cent of the sunlight's heat energy, while still permitting 50 per cent of the visible light to enter the building, with no change to its natural colour balance. The result is an interior that is filled with daylight and unobscured views and won't cost the earth in air conditioning.

The other key part of the glazing's job is to keep residents warm during the cold winters, which it does well thanks to its excellent low-emissivity performance. This means that rather than allowing heat to radiate away from the interior, the glass reflects it back into the building, helping to save on heating bills and creating a comfortable living space all year round.



Developments HFX



Designed by SAOTA Photographer: Adam Letch

Lake Huron House

Lake Huron House sees local "cabin country" architecture completely reimagined to create a modern family retreat on the banks of one of North America's five Great Lakes.

Taking a contemporary architectural approach, the residence maximises its breath-taking lakeside views, while remaining sensitive to its surroundings and sustainability impact in a climate of extremes.

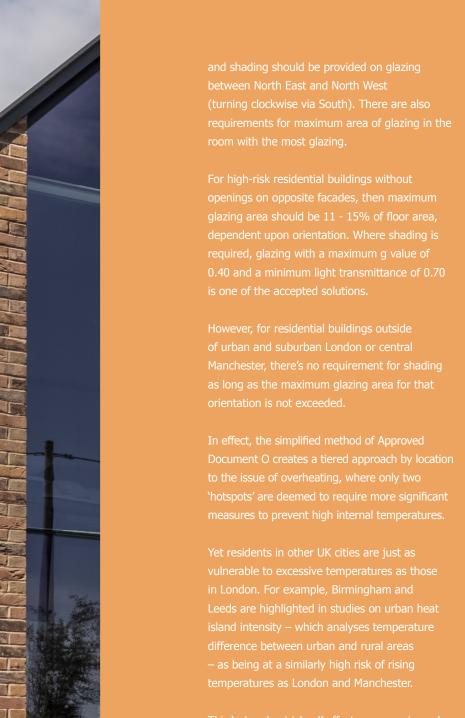
To achieve its statement aesthetic and enhance the beautiful natural setting, one of the key components of the design is the use of glass. Glass not only provides distinct visual features throughout the home, functionally it serves as a robust external surface that plays a vital role in maintaining the building's energy efficiency.

With many demands on the crucial material, the architects turned to the Pilkington product portfolio, to ensure the perfect glass solution was delivered. Pilkington **Suncool™** 70/35 OW T was specified for the project to help bring the outdoors in by creating the perfect balance of natural light, while minimising solar heat gain. Having an eye on sustainability was key, and this specification delivers excellent thermal properties that can help reduce the homes energy consumption.

By combining the Pilkington **Suncool™** coating with extra clear true low iron Pilkington **Optiwhite™**, it ensures that the neutral appearance does not spoil the beautiful views of the landscape and creates a bright and airy internal living space.

The glazing ensures that the occupants can enjoy the vistas and are comfortable all year round, while reducing the need for constant air conditioning, in turn cutting energy bills and making the home more environmentally friendly.





by Ian Forrester at BBC Manchester, whose

the consequences – food goes off very quickly,

have been forced to install costly and energy

A missed opportunity?

With overheating a clear and growing problem in residential buildings across the country - including major cities outside of urban and suburban London and central Manchester - it raises the question, is the double standard set out in the new regulations an oversight? Is a failure to acknowledge the risk of overheating outside of these hotspots a missed opportunity to create more sustainable cities across the country? Maybe, but it doesn't have to be.

Housebuilders and architects should consider specifying high performance solar control glass in residential buildings in all cities to help prevent overheating.

Ultimately, it may not be changes to building regulations that cause measures to be implemented to avoid overheating, but rather residents' need to avoid increasingly unbearable temperatures.

This is especially the case where retrofit is concerned, as it's not currently foreseen that corresponding regulations will be implemented to enforce upgrades to be made in existing properties.

has warned that more than half a million homes built since 2017 will need to be retrofitted to ensure they stay cool. They also estimated the costs of retrofitting mitigation measures into a property to be four or five times more than if they had been included at the building stage.

By striving not just to meet regulations, but exceed them, developers and architects can help future proof buildings against climate change and reduce the overall carbon footprint of a development, making it more attractive to both investors and residents.

Keep up to date on regulation changes by visiting our Part L hub.

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