

Engineering progress
Enhancing lives

Which window material suits your lifestyle?

A 21st Century Window Renovation Guide





Introduction

Windows play a vital role in any property renovation, to the point that they are often considered the pièce de résistance of any project. They are integral to establishing a home's kerb appeal, and ensuring it is as thermally efficient as possible in the long term. As such, homeowners understandably take a lot of care when deciding which window solution best suits their property, balancing aesthetic appeal with practical concerns such as ongoing maintenance, thermal efficiency and cost-effectiveness.

In the past, this demand for visually attractive, durable and dependable products has meant that homeowners have gravitated toward aluminium and wooden frames. These materials have long enjoyed an elevated status, with PVC often considered a more cost-effective but less visually attractive solution.

However, in response to these perceptions, and with demand for aesthetically appealing, high-performing solutions continuing to endure, PVC has adapted accordingly. While the material has always been associated with market-leading levels of efficiency, advances in manufacturing technologies and foils means it can now match the visual allure of both timber and aluminium.

Over the next 17 pages, we will look at the demands of modern life and how they relate to homeowners' choice of windows. By doing so, we hope to change perceptions around PVC, and explore how it has grown from a so-called 'cheaper option' to a better alternative that exceeds purchaser expectations, both visually and in terms of performance.

We hope that you find this guide useful.



Clare Higgins

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Window Solutions at REHAU UK

Aluminium Frames

Aluminium window and door frames appeal to homeowners for a number of reasons. First of all, the metal is one of the strongest conventional materials available for window and doors. Aluminium frames are traditionally stronger than ones that can be made in PVC, and can therefore have a slimmer appearance and larger glass surface, creating a distinct, modern look that chimes with certain homeowners' design sensibilities.

Similarly, the historically slimmer sightlines, sharper outlines and smooth, powder-coated finish have also been features that mark out aluminium frames as attractive options for those looking to purchase new windows. This has especially been the case over the past decade or so, as window designs have trended toward becoming progressively less bulky.

Yet this strength and contemporary look tends to lead to added cost, with aluminium traditionally being up to three times more expensive than PVC. Additionally, while the metal's sleek finish can be a pro for some people, it can be the biggest con for others, as the unique aesthetics of aluminium frames will not suit all properties.

As an effective conductor of heat, aluminium frames are also susceptible to condensation forming. Though this disadvantage can be resolved with the installation of thermal breaks, heat may be lost through the frame if the thermal breaks are not fitted properly, leading to lower energy efficiency ratings. Further issues such as corrosion may also arise if the frame is not powder-coated correctly, reducing both the home and the window's visual appeal.



PVC - A Better Alternative

Kerb appeal

It is clear that PVC has come a long way since the 1980s, where it was only available in white and a very limited range of foil colour options. Now though, polymer frames come in a plethora of foil ranges and colours, to suit your individual requirements. This includes everything from bold and striking primary colours, to popular minimalist shades such as black and grey.

The trend toward cleaner finishes, less bulky solutions and slimmer sightlines has also resulted in a greater choice of jointing options for PVC. This includes fully welded and mechanical joints, which offer a strong, durable and clean finish that you know will be robust while offering excellent, cost-effective kerb appeal.

Performance

It is vital to know that not all windows offer the same level of performance. Consequently, when selecting the best possible solution for your property, you should prioritise a number of metrics, and look for certain industry standards and ratings.

These accreditations should demonstrate evidence of extensive, independent testing from a government-recognised United Kingdom Accreditation Service (UKAS) test centre. But what specific standards should you look for?

The following demonstrate a high-performing window:



Window Energy Rating (WER): demonstrating best possible energy efficiency.



BS EN 12608 and BS 7412: standards highlighting that windows have been manufactured to the highest possible level.



BS 6375-1: standard showing the window can withstand 'severe' weather conditions, with high levels of wind resistance, air permeability and weather performance.



PAS 24: Accreditation demonstrating enhanced security performance, enabling straightforward compliance to building regulations such as Approved Document Q and Secure by Design.



Practicality

PVC windows are normally the same depth or slightly larger than a home's original windows, they are very easy for installers to retrofit into existing properties. By contrast, aluminium windows tend to be of a slimmer depth, meaning they can be hard to fit into gaps where the initial window would have been.

Due to this, more trimming and plastering work may be required when installing aluminium frames, which can result in a longer, more disruptive and costly installation. Additionally, PVC windows tend to not require further trims/quadrants to be fitted during installation – another process that may result in added expense you may wish to avoid.



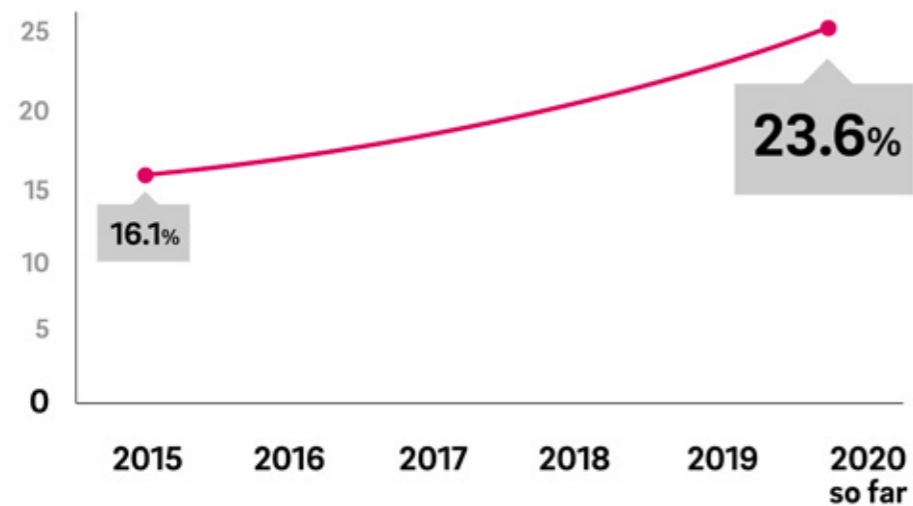
REHAU GENE Performance
up to **0.60 W/m²K**
with triple glazing

Trending Towards Colour

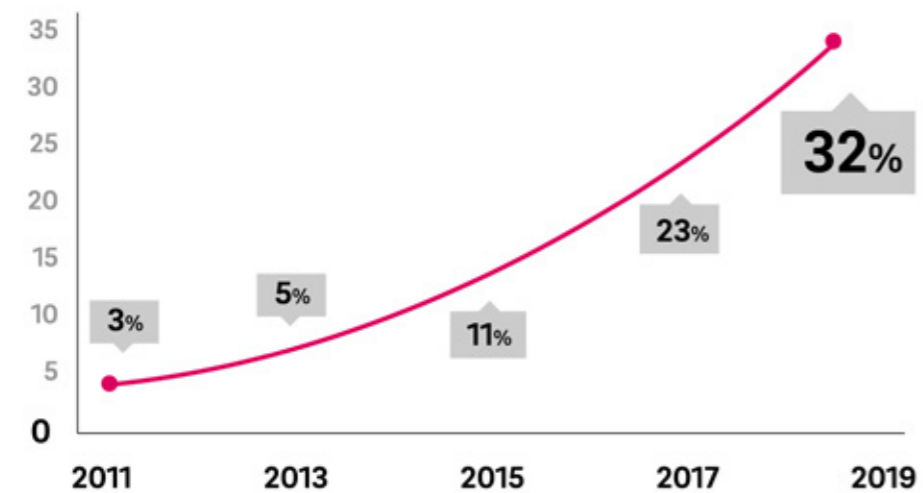
Homeowner demand for smooth-coated and textured window finishes has continued to grow over the past decade, with the market also increasingly trending toward block colour foils.

In response to this growing demand, PVC window suppliers have expanded their range of colour options so homeowners have more choice than ever before.

Growth in foils



Growing trend in Anthracite Grey*



*Homeowners are increasingly demanding a wide variety of frames in block colours, the majority of foiled REHAU window solutions sold in 2019 came with an **Anthracite Grey (48%)** followed by **Black Brown (24%)** foil. These eye-catching foils allow for a sleek modern look, while the PVC frame provides exceptional performance benefits.

*Based on third-party sales data





Timber Frames

Wooden windows have always been an attractive choice for homeowners. This is in no small part due to the market's long-standing preference for traditional materials and how they look – especially for period-style properties. Wood's status as a natural material also means it is often perceived as more sustainable, which is an ever-growing concern as society turns toward more eco-conscious solutions.

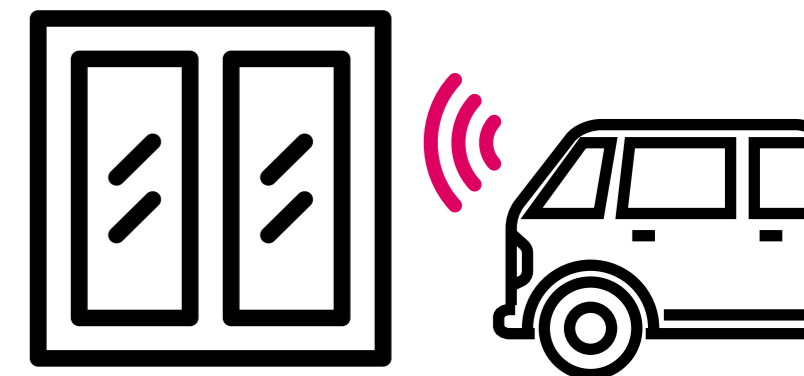
Furthermore, timber has also often been regarded as a robust, high-quality option that can mirror the aesthetic of other manufactured furnishings around your home. For example, hardwood options such as oak, timber and pine have long been considered homeowner favourites due to their natural look and warm feel, and softwood timber windows have been prized due to their ability to combine a traditional look and modern finish.

Treatment and noise

Yet it must be noted that timber has its drawbacks in regards to durability and practicality, especially when faced with the traditionally damp British weather. If left untreated and exposed to the elements, hardwood deterioration will be accelerated, with more absorbent softwood solutions proving even less robust and vulnerable.

As such, homeowners who prize the look and feel of wooden windows may find themselves locked into time-consuming and expensive maintenance if they are to delay the onset of decay. For those who prefer low-maintenance, fit-and-forget solutions, this disruptive preservation work may not suit their lifestyles.

Additionally, it is important to note that many period properties were not built with the noise levels of modern life in mind. As such, wooden windows suitable for these homes may only be single-glazed, and therefore unable to provide appropriate levels of sound attenuation. Especially in locations such as city centres, where traffic noise is near-enough constant, this could be a concern.



PVC - A Different Option

Traditional vs. Practical

Homeowners used to face a stark choice between wood, which was expensive to maintain, or PVC, which looked inconsistent when fitted to more traditional-looking properties.

However, the development of realistic-looking wood effect foils means it is now possible to provide highly efficient, adaptable and cost-effective PVC windows that look and feel almost identical to their timber counterparts. Advancing manufacturing techniques means it is also possible to replicate timber designs in PVC.

REHAU's Heritage range, for example, can offer astragal bars that can be fitted to the internal and external face of the window, to create a grid that provides a more authentic, period-style look.



Efficiency and Durability

Your windows are the largest area through which heat escapes, leading to bigger heating bills. If you live in a period-style home, your single-glazed windows may not adequately protect against this heat loss.

By contrast, PVC windows benefit from built-in thermal efficiency and can be double or triple-glazed to provide you with further comfort and reduced energy bills.

This efficiency, combined with the accessories and foils also available, means REHAU is well-placed to provide homeowners with attractive, low-maintenance and high-performing window solutions. Indeed, PVC windows operate on a 'fit-and-forget' basis, so you don't have to worry about time-consuming maintenance work.

Sustainability



Climate change is dominating the news agenda, and homeowners are increasingly prioritising sustainable solutions. In response, PVC solution suppliers have developed innovative new recycling processes and products.

These advances mean that PVC is now a highly sustainable option for homeowners looking to reduce their carbon footprint, as it can be recycled multiple times right down to the glass and hinges before recording any significant loss of performance.

To further bolster the sustainability of PVC, REHAU has also continued to invest in its PVC recycling business, PVCRLtd, which processes over 13,000 tonnes of postconsumer polymer windows and doors annually, that would otherwise go into landfill.

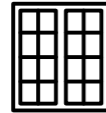


REHAU are one of the **50 Sustainability & Climate leaders worldwide** after signing the UN Global Compact in May 2020.

Which PVC Solution Is Right for You?

Simply run through the chart and see what is a priority for you. If you are looking for a solution that meets multiple needs, record each material recommendation as a point, and tally up the total when you're done to see which comes out the winner.

I would like...



A traditional-looking window

I would like...



A modern-looking window

Am I...

Am I...

Treating security as a priority?

Concerned about the outside noise?

Concerned about installation costs and logistics?

Concerned about the long-term look of my windows?

Yes

No

Yes

No

Yes

No

Yes

No

Worried about my energy bills?

Able to maintain the frames?

Worried about my energy bills?

Treating security as a priority?

Yes

No

Yes

No

Yes

No

Yes

No



You would prefer a **PVC window frame** with a wooden foil.



You would prefer a **wooden window frame**



You would prefer a **PVC window frame** with a block colour foil.



You would prefer an **aluminum window frame**

Low-maintenance, energy-efficient and offering excellent sound attenuation and security, PVC is continuing to grow in popularity. REHAU offers numerous window solutions with a wooden look and foil, including its Heritage, Rio Flush Fit and TOTAL70 range. Why not take a look at our window systems below:

A traditional material appealing for its natural look and robustness, wood's popularity as a sustainable solution continues to endure. Why not take a look at our window systems below:

Easy to install, secure and energy-efficient, PVC is highly durable and can be put in place as a fit-and-forget solution. REHAU offers various window solutions with eye-catching and sleek coloured foils, including the Rioflush Flush Fit, TOTAL70 system and GENE0 AluTop. Why not take a look at our window systems below:

Sleek and modern, aluminium is a high strength material with slim sightlines and large glass surface areas. Why not take a look at our window systems below:

Conclusion: The best of all worlds

Throughout this guide, we have made it clear that aluminium and timber windows are by no means poor choices when it comes to selecting a window material. Between the strength of aluminium and wood's traditional look, it is clear that they will both continue to hold an appeal for those looking to purchase new windows.

Yet while all homes and homeowners are different, and may have different demands, the question remains the same – what window material will tick as many boxes as possible? Below are some of the factors you should be considering during the purchasing process.

1. **Thermal efficiency** – will my windows reduce my heating bills?
2. **Sound attenuation** – will my windows minimise outside noise?
3. **Security** – Do my windows help keep my home secure?
4. **Kerb appeal** – do my windows add to the overall visual appeal of my house?
5. **Sustainability** – Are my windows produced in an eco-friendly way?
6. **Durability** – Are my windows built to withstand the weather?
7. **Affordability** – Are my windows a cost-effective purchase?

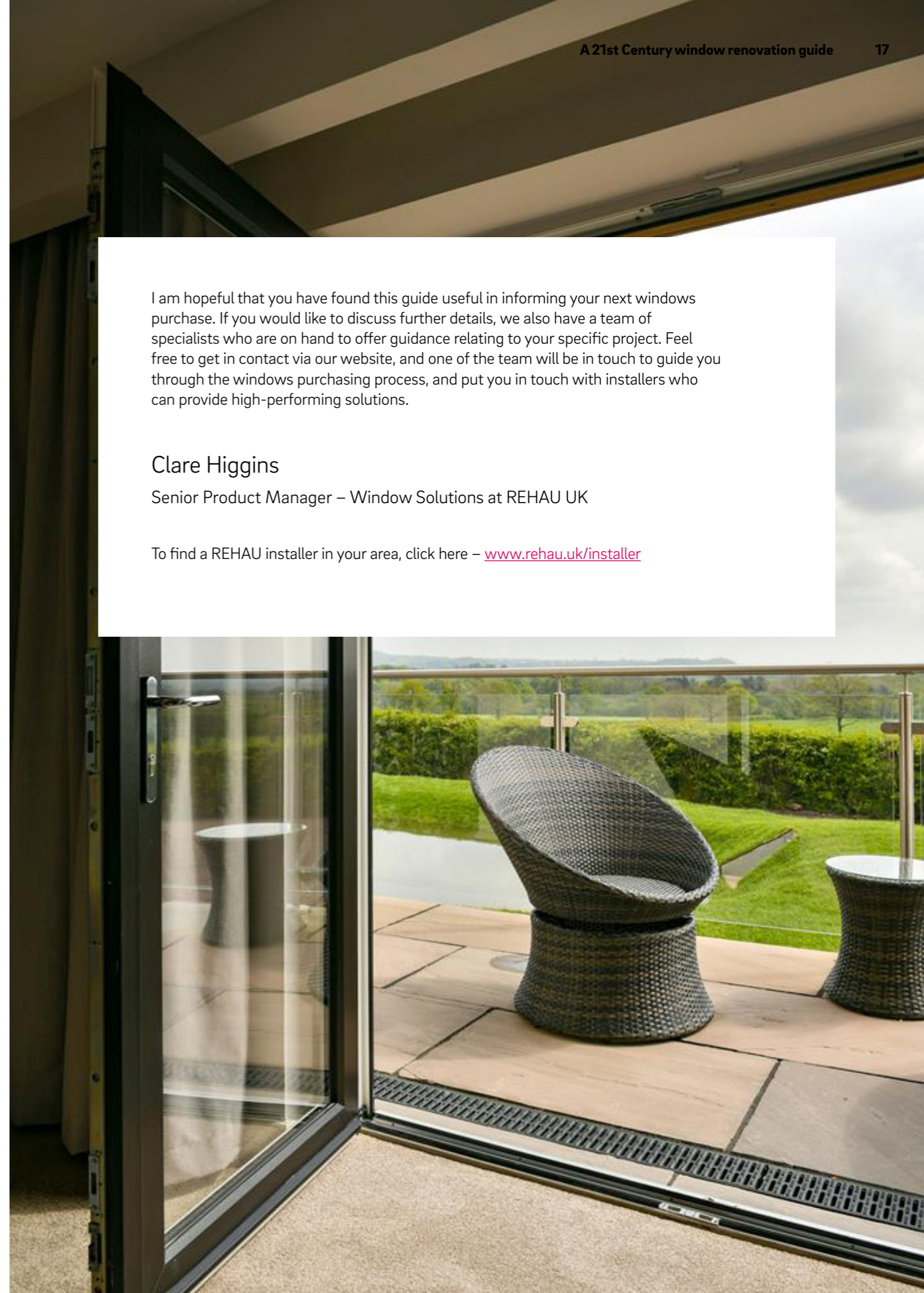
It is our view that PVC windows, more than any other material, meet all seven of these criteria. As such, they represent ideal solutions for modern life – visually impressive, sustainable and affordable products that reduce energy bills with minimal maintenance required.

I am hopeful that you have found this guide useful in informing your next windows purchase. If you would like to discuss further details, we also have a team of specialists who are on hand to offer guidance relating to your specific project. Feel free to get in contact via our website, and one of the team will be in touch to guide you through the windows purchasing process, and put you in touch with installers who can provide high-performing solutions.

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To find a REHAU installer in your area, click here – www.rehau.uk/installer





For more information,
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