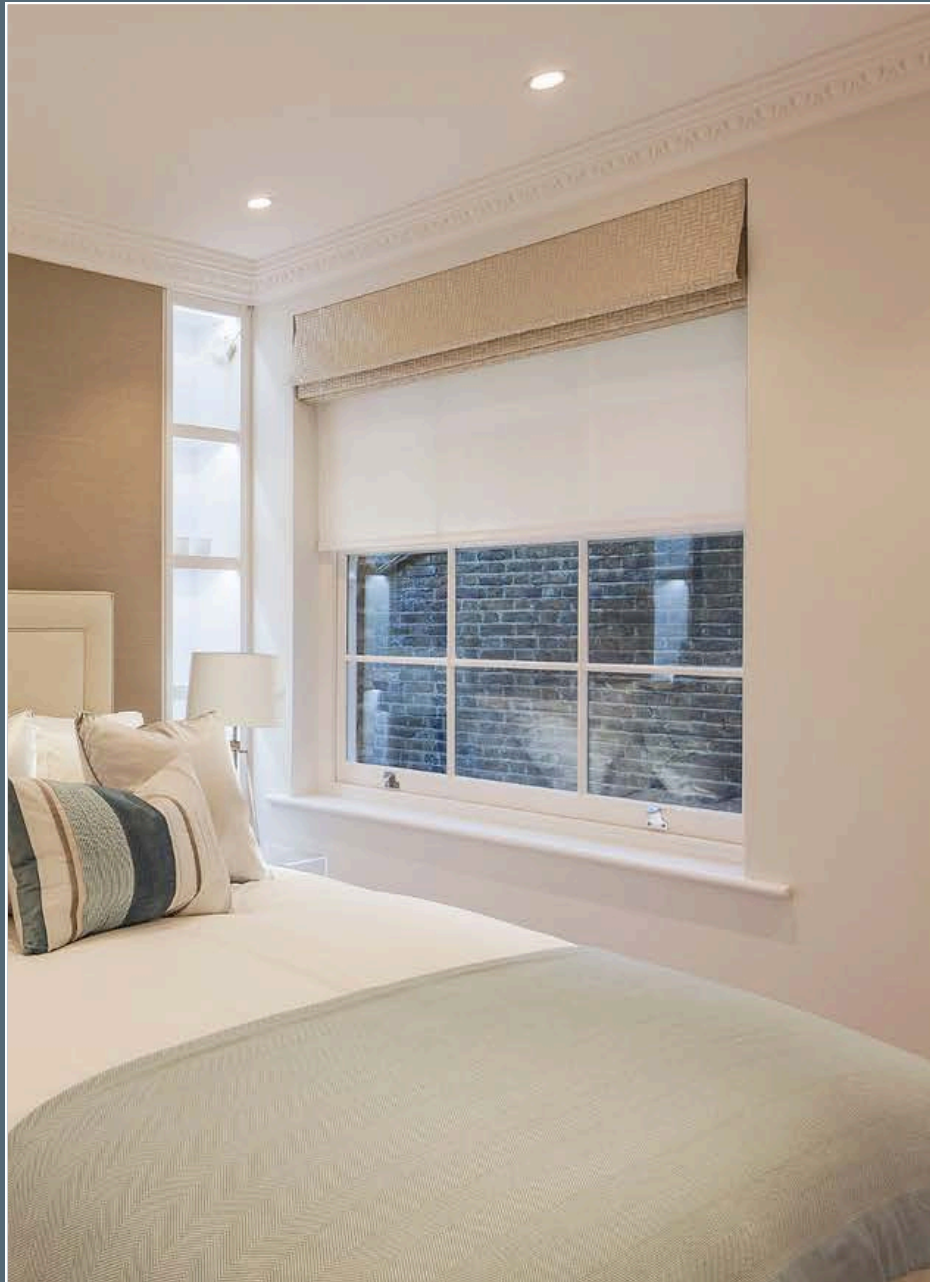




SASH WINDOW SHOP
Custom Made Wooden Windows & Doors



V A C C U M G L A S S G U I D E

REVOLUTIONIZING TIMBER WINDOW PERFORMANCE

www.sashwindowshop.com



VACUUM GLAZING

GLASS THAT LOOKS LIKE SINGLE GLAZING – PERFORMS LIKE TRIPLE GLAZING

Vacuum glazing for timber windows is revolutionizing energy efficiency in homes, especially in conservation areas and listed properties.

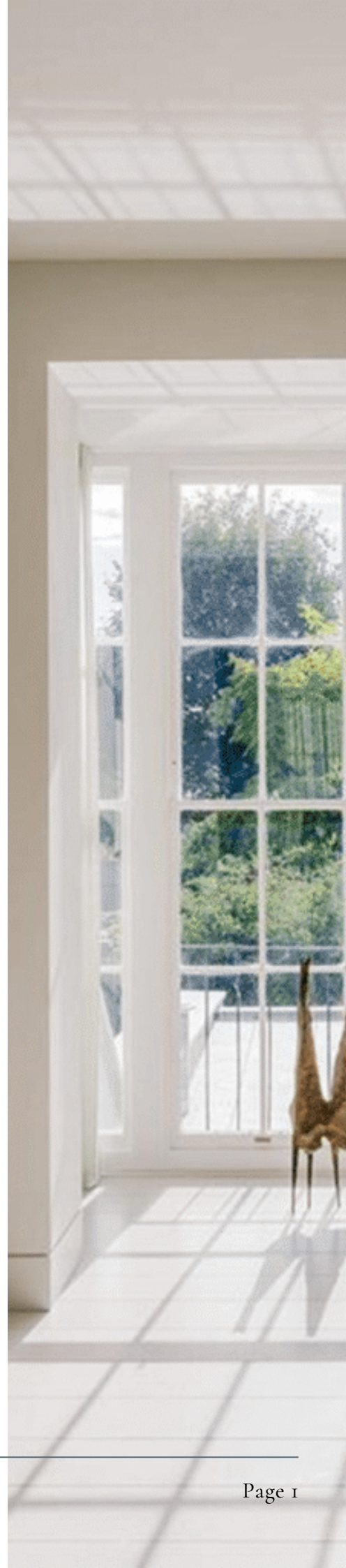
Merging the traditional charm of timber with the cutting-edge performance of vacuum glass, this technology offers a solution that enhances both the style and sustainability of homes without compromising the architectural integrity of historic buildings.

WHAT IS VACUUM GLAZING?

Vacuum Glazing (Vacuum Insulated Glass) is a highly advanced form of slim glazing technology that involves two panes of toughened glass separated by a 0.3mm vacuum gap.

Unlike traditional double glazing or triple glazing, which uses a layer of air or inert gas between the panes, vacuum glazing utilizes a vacuum, or a space devoid of air and gas, to reduce heat transfer.

This vacuum gap effectively minimizes the conduction and convection that typically occur in conventional glazing systems.





Key Components and Functions

01 Twin Glass Panes

Vacuum glass offers superior thermal insulation due to the vacuum between its panes, which significantly reduces conductive and convective heat transfer compared to other glazing types. With a U-value of 0.4, vacuum glass outperforms double glazing (U-value 1.2) and triple glazing (U-value 0.7), demonstrating its more effective insulation.

02 Vacuum Gap

Typically around 0.3 mm thick, this gap is substantially thinner than the spaces in standard double glazing. It's this vacuum space that significantly enhances the insulative properties of the window by reducing heat and sound transmission.

03 Spacer and Sealant

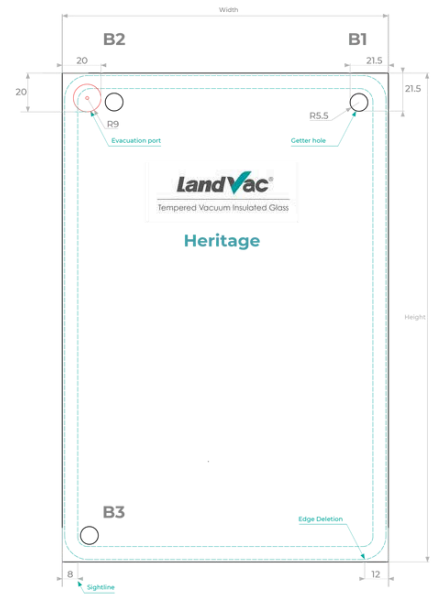
The edges of the glass panes are sealed with a high-strength sealant, and tiny spacers, called micro-pillars, which are evenly distributed between the panes to prevent them from touching. These spacers are small enough to be virtually invisible from a distance, maintaining the clarity of the window.

04 Thermal and Acoustic Insulation

The vacuum between the glass panes drastically reduces the amount of heat that can pass through the window, making vacuum glazing exceptionally thermally efficient. It also provides superior sound insulation compared to other types of glazing.

Why Vacuum Glazing?

The Revolutionary Ultra Thin Energy Efficient Next Generation Glass For Timber Windows & Doors.



Enhanced Thermal Efficiency:

Superior insulation properties that significantly reduce heat loss, making your home more energy-efficient. With an energy rating U-value of 0.4, vacuum glass outperforms double glazing (U-value 1.2) and triple glazing (U-value 0.7), demonstrating its more effective insulation.

Superior Noise Reduction:

The vacuum barrier also acts as an effective soundproofing layer, offering up to 39 dB of sound insulation, a valuable feature for properties in busy urban environments or noisy locations.

Conservation Friendly

The slim profile of vacuum glass (looks like a single pane of glass) is particularly suited for timber windows in conservation areas or listed properties. It mimics a single pane of glass, lacks the internal double glazing spacer bar, and avoids the visual interference of the double reflection typical with traditional double glazing.

Aesthetic Flexibility

Timber frames equipped with vacuum glass complement both traditional and contemporary designs, enhancing the property's aesthetic while improving its functionality and comfort.

Durability and Low Maintenance

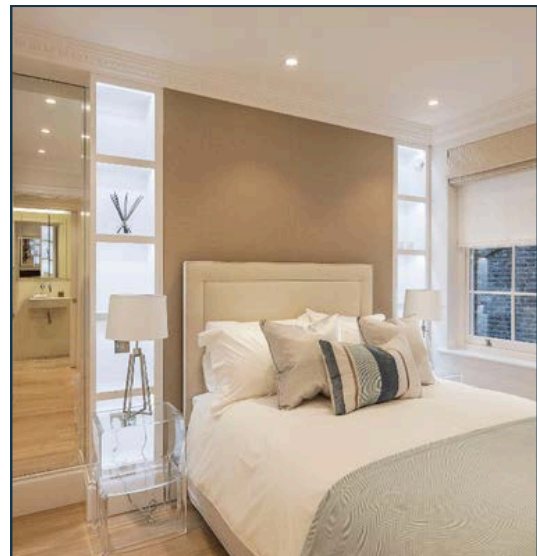
Constructed with toughened panes and a secure vacuum seal, this glass boasts advanced glazing technology for enhanced durability and comes with an industry leading 15-year guarantee.

Environmental Impact

The vast improvement in the energy efficiency of vacuum glass reduces the reliance on heating and cooling systems, thereby lowering carbon emissions. Using sustainable timber frames further enhances the ecological benefits.

OUR QUALITY & SERVICE ARE VERY
IMPORTANT TO US...

SEE FOR YOURSELF



How Does it Work?

Industry Leaders of Vacuum Glazing

Founded in 1999, LandGlass specializes in the development, manufacturing, and sale of glass tempering technologies and furnaces, becoming a pioneer in vacuum glazing technology.

Their innovation lies in LandVac™ Enhance, which merges the safety of toughened glass with the efficiency of vacuum cavities, setting new industry standards with its minimal use of micro-pillars and absence of visible evacuation ports.

Their automated production line, stretching 500 meters, produces up to 120,000m² of vacuum glazing annually.

The company offers a variety of sizes and shapes at competitive costs, continually enhancing the aesthetics and performance of their products through a dedicated R&D team of nearly 100 engineers and scientists, challenging the norms of tempered vacuum insulated glass.



LandVac®

Tempered Vacuum Insulated Glass

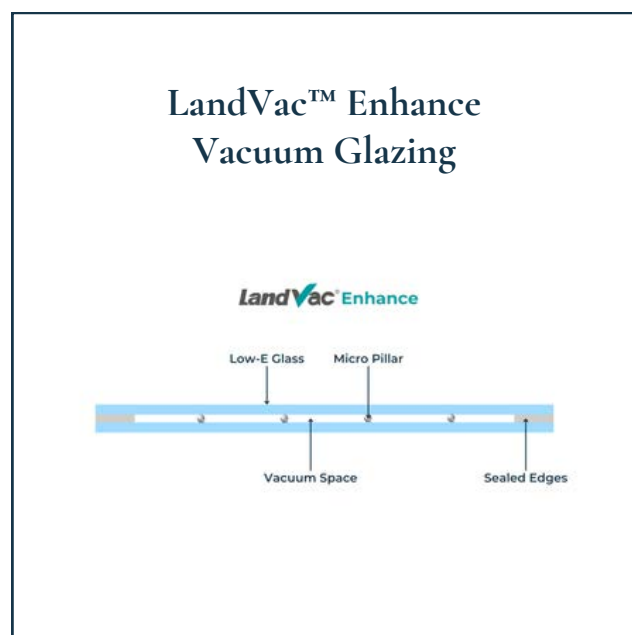
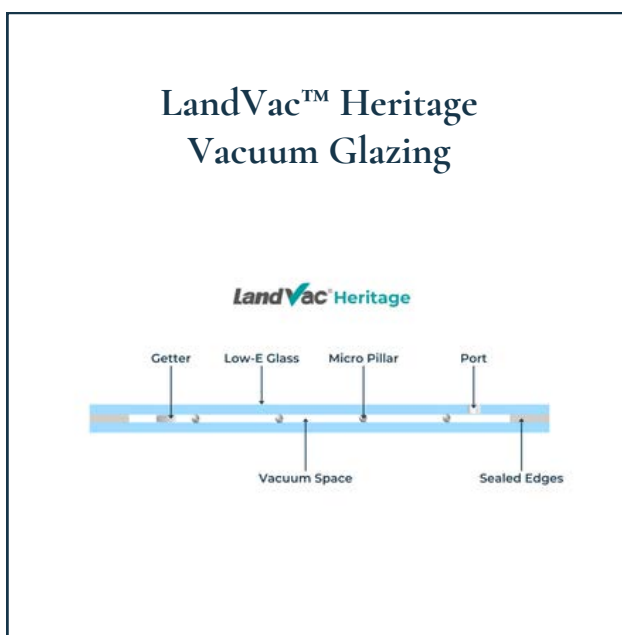


Enhanced Next Generation Technology

Vacuum glazing is a sophisticated technology that leverages the science of vacuum insulation to achieve superior thermal and acoustic properties in glass windows.

- ✔ **Vacuum Space:** Acts as an almost perfect insulator because it eliminates the air that would normally conduct heat or carry sound between glass panes. This drastically reduces both heat loss in winter and heat gain in summer.
- ✔ **Glass Panes:** Made of toughened Low E glass to withstand the pressure differences caused by the vacuum and enhance thermal performance.
- ✔ **Spacer and Seal:** LandVac™ uses fewer, less visible micro-pillars to separate the glass panes, and seals the edges with a durable material to maintain the vacuum's integrity over time.
- ✔ **Thermal Efficiency:** By removing the air and thus the medium for heat via convection, vacuum glazing provides a thermal insulation performance comparable to triple glazing.
- ✔ **Acoustic Reduction:** The absence of a medium (air) in the vacuum space also significantly reduces sound transmission, offering enhanced noise control.

This vacuum technology not only improves energy efficiency but also enhances the comfort of living spaces by reducing unwanted noise from the external environment.



A Range of Vacuum Glazing For Every Type of Project

Heritage Vacuum Glass

LandVac™ Heritage is perfectly suited for **heritage projects** and properties in **conservation areas**. It maintains the aesthetic integrity of heritage buildings while providing advance thermal efficiency.

This solution eliminates common issues like double reflections and is compliant with planning permissions concerns.



Enhance Vacuum Glass

LandVac™ Enhance Vacuum Glazing delivers numerous advantages for **listed** and **conservation area projects**.

Its innovative design is engineered **without visible evacuation ports and getters**, offering a cleaner appearance which surpass the constraints of conventional or slim double glazing, offering a superior alternative.

Optimum Vacuum Glass

LandVac™ Optimum is a sophisticated glass unit designed for new construction projects with stringent security needs, meeting PAS24 requirements.

This advanced unit features an integrated vacuum cavity, combining an 8.3mm thick LandVac™ Vacuum Glass on the interior side with a 6.8mm laminated glass on the exterior, all connected by a 10mm warm-edge Swisspacer bar. This design not only enhances security but also provides superior insulation and durability.



Contact Us for a FREE quote, or call us for more information on 01279 456 670



Vacuum Glass Vs Traditional Glass

Previously, the only choices available were ineffective single glazing or non-traditional, unreliable slim double glazing; now, however, those limitations no longer apply.



	Single Glazing	Slim Double Glazing	Double Glazing	Triple Glazing	Landvac Heritage Vacuum Glazing	Landvac Optimum Vacuum Glazing
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Overall Thickness	4mm	12-16mm	24mm	38 - 46mm	8.3mm	25mm
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Energy U-value	5.8	1.3 - 1.9	1.1 - 1.9	0.7 - 1.0	0.4	0.4
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Acoustic Reduction (RW)	25dB	31dB	31dB	35dB	39dB	41dB
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Estimated Lifespan	25 + Years	1 - 10 Years	10 - 25 Years	10 - 25 Years	25 + Years	10 - 25 Years
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Compared to Slim Double Glazing, Vacuum Glazing has:

- ✓ Enhanced energy efficiency
- ✓ Improved noise reduction
- ✓ Increased light transmission
- ✓ More compact profile
- ✓ Extended service life
- ✓ Lighter in Weight

Heat Loss Comparison in U-Values



Perfect for Windows in Listed Buildings & Conservation Areas

Vacuum glazing is especially beneficial in applications where both thermal insulation and weight are critical factors, such as in older buildings where the installation of traditional double glazing might be impractical due to the weight and thickness of the units.

This technology offers a thinner, lighter, and more efficient alternative that can be adapted to various architectural styles without compromising the building's original aesthetics.

The Heritage and Enhance Vacuum Glass series integrates cutting-edge technology into period properties, offering unmatched thermal performance that surpasses conventional slimline glazing solutions.

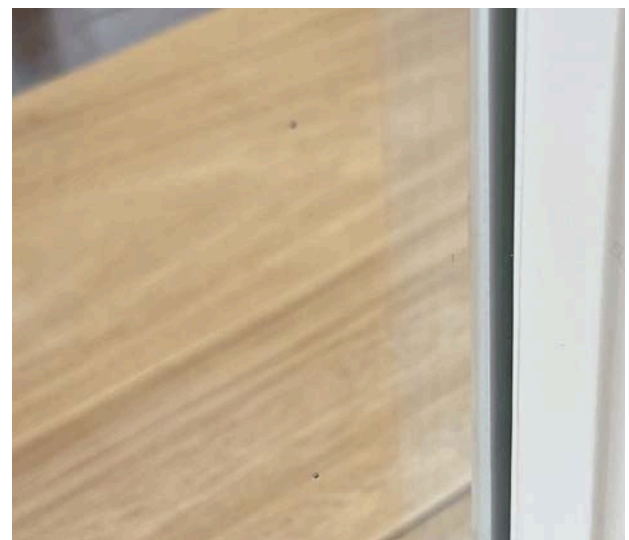
This range is tailor-made for listed and conservation properties, presenting a true answer to the challenge of combining visual harmony with energy efficiency in the replacement of timber windows within protected and historically significant buildings.



Up Close View with Heritage Vacuum Glazings

Take a closer at a sash with a vacuum glazed unit. The vacuum glazing process, which involves carefully sealing a vacuum between two panes, results in a product that appears deceptively simple yet achieves remarkable insulation.

In fact, it looks almost indistinguishable from a single pane of glass! This innovative glazing solution not only enhances thermal efficiency, 0.4 U-Value, but also maintains the aesthetic appeal of a slim, heritage appearance, see for yourself!



Contact Us for a FREE quote, or call us for more information on 01279 456 670

Vacuum Glass Frequently Asked Questions

FAQs on LandVac™ vacuum glazing: key benefits and applications

What is vacuum glazing?

Vacuum glazing uses two glass panes with a vacuum space between them, improving thermal insulation and soundproofing.

How does LandVac™ vacuum glazing differ from traditional double glazing?

Unlike traditional double glazing that uses air or gas-filled spaces between panes, LandVac™ uses a vacuum, which significantly reduces both heat and sound transmission, offering superior insulation and quieter indoor environments.

Why do you use LandVac™ over other vacuum glazing manufactures?

When investigating vacuum glazing, LandVac™ Vacuum Glazing stood out from the rest of the competition for the following reasons:

- **Superior Thermal Insulation:** LandVac™ vacuum glazing boasts an exceptionally low U-value, which measures the rate of heat transfer through the glazing. The lower the U-value, the better the material is at insulating. LandVac™ U-value, 0.4 U-Value, is one of the lowest in the market, making it highly effective at reducing energy costs for heating and cooling.
- **Enhanced Acoustic Insulation:** Due to its vacuum layer, LandVac™ is extremely effective at blocking noise. This makes it ideal for buildings in noisy environments such as urban centers or noisy flightpaths.
- **Increased Durability:** LandVac™ uses a proprietary technology to seal the vacuum between its panes of glass. This seal is robust and designed to last, ensuring that the vacuum remains effective over the long term, which is a challenge some other vacuum glazing products face.

..Cont'd Why do you use LandVac™ over other vacuum glazing manufactures?

- **Safety Features:** The glass used in LandVac™ is toughened or tempered, which not only makes it safer in the event of breakage but also enhances its resistance to thermal stress and impact.
- **Reduced Pillar Visibility:** LandVac™ uses fewer and smaller micro-pillars between its glass panes to maintain structural integrity. These pillars are almost invisible, which improves the clarity and aesthetics of the glass, unlike other vacuum glazing products where the pillars might be more noticeable.
- **Versatility:** LandVac™ offers a range of product specifications including different sizes, shapes, and thicknesses which can be tailored to meet specific needs, making it suitable for a wide variety of applications from historic renovations to high-end new constructions.
- **Environmental Impact:** By significantly reducing the energy consumption of a building, LandVac™ helps lower carbon emissions, supporting sustainability goals and potentially contributing to green building certifications.
- **Innovative Manufacturing:** LandVac™ is produced on a unique, automated production line which ensures high quality and consistency in every unit produced. This manufacturing precision is critical in vacuum glazing, where even minor inconsistencies can affect performance.

These features collectively make LandVac™ a leader in the vacuum glazing market, offering a product that effectively combines durability, performance, and aesthetic appeal, making it a top choice for architects, builders, and homeowners alike.

Can LandVac™ Vacuum Glazing be used in conservation areas and Listed buildings?

Yes, LandVac™ Heritage and LandVac™ Enhance Vacuum Glazing is specifically designed for use in historic buildings. It maintains the aesthetic integrity of the building while providing modern thermal and acoustic insulation. LandVac™ Enhance is ideally designed for properties that require Listed Building Consent, as it does not include getters or evacuation ports. This design feature makes the product more visually appealing to conservation officers.

What are the energy efficiency benefits of installing LandVac™ vacuum glazing?

Yes, LandVac™ glazing uses toughened glass and fewer micro-pillars, which not only provides added strength but also increases durability against environmental stressors.

Is LandVac™ vacuum glazing more durable than other types of glazing?

Yes, LandVac™ glazing uses toughened glass and fewer micro-pillars, which not only provides added strength but also increases durability against environmental stressors.

What sizes and shapes are available in LandVac™ vacuum glazing?

LandVac™ offers a flexible range of sizes and shapes, accommodating maximum sizes up to 1500mm × 2500mm and minimum sizes down to 300mm × 300mm, making it suitable for arched, circular, and other non-standard shapes, ensuring a perfect fit for any architectural requirement.

How does LandVac™ handle sound insulation?

The vacuum layer in LandVac™ glazing effectively blocks a significant amount of external noise, making it an ideal solution for buildings in noisy areas or for any space requiring a quiet environment.

Are there special maintenance requirements for LandVac™ vacuum glazing?

LandVac™ vacuum glazing requires no special maintenance beyond regular cleaning. It is designed to be robust and long-lasting, requiring minimal upkeep.

How does the cost of LandVac™ vacuum glazing compare to traditional glazing and slimline glazing options?

Initially, LandVac™ vacuum Glazing may be more expensive than some traditional options due to its advanced technology and superior benefits. However, the long-term savings in energy costs can offset the initial investment. LandVac™ vacuum Glazing typically carries a higher price tag than traditional double glazing but proves more economically feasible than slimline double glazing.

What warranty does LandVac™ offer on its vacuum glazing products?

LandVac™ Heritage and LandVac™ Enhance come with a 15-year warranty and a 25-year life expectancy.

What is the impact resistance of LandVac™ vacuum glazing?

LandVac™ vacuum glazing uses toughened or tempered glass, which is highly resistant to impacts and thermal stress, making it suitable for areas prone to severe weather conditions or where safety is a priority for compliance with Building Regulations.

Does LandVac™ vacuum glazing offer UV protection?

Yes, LandVac™ vacuum glazing can include UV-blocking coatings that help protect against ultraviolet rays, reducing fading and damage to interior furnishings and materials.

OUR QUALITY & SERVICE ARE VERY
IMPORTANT TO US...

WHAT OUR CUSTOMER SAY

★★★★★

5-Star Client Review

I have no hesitation in recommending Sash Window Shop. The quality of the windows and door is superb and my home is so much warmer and quieter. The neighbours have also commented on how good they look! The customer service was superb from start to finish; a no pressure quote process with Brett followed by professional fitting by Martin, with his expertise and attention to detail to get everything just right. To top it all off, everyone was wonderful to deal with which is often hard to come by.

Richard Gardiner




★★★★★

5-Star Client Review

We were very pleased to have chosen Sash Window Shop who recently made and installed a Victorian front door for us. It was the final stage of renovating our house so it was important that we got a lovely quality door. We checked a lot of companies out and Sash Window Shop stood out in terms of responsiveness, quality and competitiveness. Sash Window Shop proved to be efficient, courteous and professional. We are very happy to recommend them.

Michelle Turner



★★★★★

5-Star Client Review

Our experience of working with Brett from the sash window shop was exceptional. He is not only a lovely man but also utterly professional. We absolutely love our new sash windows which were fitted as part of a wider renovation and extension of our house. The windows are wonderful quality and as good as any original. The fixtures and fittings are also of a superior quality. We happily endorse this company with confidence.

Kerry Peirs




★★★★★

5-Star Client Review

I couldn't be happier with my new bay window sash windows. Thank you to all the team at Sash Window Shop, I felt in very good hands throughout. The room has become so much quieter and warmer now. Best wishes, Fiona.

Fiona Wilson




★★★★★

5-Star Client Review

We recently had windows fitted by the Sash Window Shop, and I can't express how delighted I am with the entire experience. Brett's professionalism and genuine warmth made the process enjoyable, and the quality of our new sash windows exceeded our expectations. The fixtures and fittings are of superior quality, contributing to the overall charm of our home. From the no-pressure quote process to the meticulous fitting by Martin, the entire team demonstrated exceptional customer service. I was very impressed with the tidy up during and after the fitting too. The rooms with the new windows are now not only warmer and quieter but also have had compliments from our neighbours. I wholeheartedly recommend the Sash Window Shop for their outstanding craftsmanship and wonderful team.

Samantha Biagioni




★★★★★

5-Star Client Review

We had a really fantastic experience with Sash Window Shop. Brett and the team could not have been more helpful. Really clear correspondence, always available to chat. Brett came out of his way to show us mock-up windows early in the process which sealed the deal for us. He worked hard to give us a brilliantly competitive quote. Fitting was excellent. Can thoroughly recommend.

Alex





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C O N T A C T U S

01279 456670

hello@sashwindowshop.com



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