

slimlite
double glazing

Self-cleaning Double Glazed Units



New Technology *ultraclear* Self-cleaning Double Glazed Units

Light Transmission (Vision Clarity) 85% Patent Pending



slimlite standard Self-cleaning Double Glazed Units

Light Transmission (Vision Clarity) 75%

Currently nearly all double glazed units are constructed with Low E glass (low emissivity) which has a noticeable tint. Our new **Ultra Clear Low E Units** reduce the visible tint effect and increases the Daylight/ Solar Factor and in appropriate conditions may reduce the heating energy requirement.



slimlite *ultraclear*

Low E/Cavity/Clear Glass
Light Transmission 85%
Solar Factor 79%



slimlite standard

Low E/Cavity/Clear Glass
Light Transmission 75%
Solar Factor 73%

ordinaryclear glass unit

4mm Clear Float/Cavity/4mm Clear
Light Transmission 82%
Solar Factor 78%

**Generally increased Solar Factor
will improve Window Energy Ratings**

slimlite are foil edge taped for extra special protection

CITY OF EDINBURGH - LISTED BUILDINGS

Edinburgh City Council, Historic Scotland and Edinburgh World Heritage have approved the use of slimlite Double Glazed Units for A Listed and B Listed Buildings in Edinburgh which has the largest stock of Listed Buildings of any City in the UK except London.

It is not often that I get completely blown away by a building product, but I find this absolutely extraordinary, looks like a single pane of glass.



Kevin McLoud - Grand Designs TV



slimlite ultraclear
Self-cleaning Double Glazed Units

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slimlite double glazed units
are patent protected products
Patent Pending slimlite®



Self-cleaning Double Glazed Units

slimlite Double Glazing the original patent innovation of the new very slim units with a very small perimeter edge seal of only 5mm for fitting to most existing single glazed windows or new windows to maintain the desired appeal of the slim glazing bar or astragal have now introduced another self-cleaning aspect to slimlite for the external glass.

Self-cleaning refers to the ability of a nano-structure invisible coating applied to the glass a few atoms thick which forms a permanent covalent fused bond to the glass. This has the effect of changing the glass surface from Hydrophilic or 'Water Loving' to Hydrophobic or 'Water Hating'

This changes the water sheeting effect of the rain on the glass to a scattered spherical or globule effect from the rain and the 'Water Hating' glass surface encourages the water globules to run downwards, carrying away any dirt or atmospheric contamination leaving the glass reasonably clean. The scattered globule effect over the surface of the glass has the surprising effect of substantially increasing visibility during the rain.

slimlite Self-cleaning Double Glazed units are guaranteed for a period of 10 years. See detail on glazing and cause of unit breakdown.

Incredible Clear Vision During Rainfall

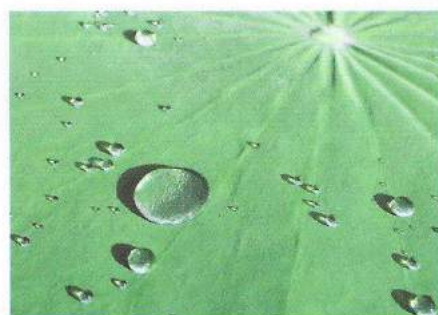


This naturally hydrophobic phenomenon can be seen on the leaf of a Plant and similarly on a Nasturtium leaf where the rain will form glob or spherical shapes which run off the leaf carrying away dust or dirt.

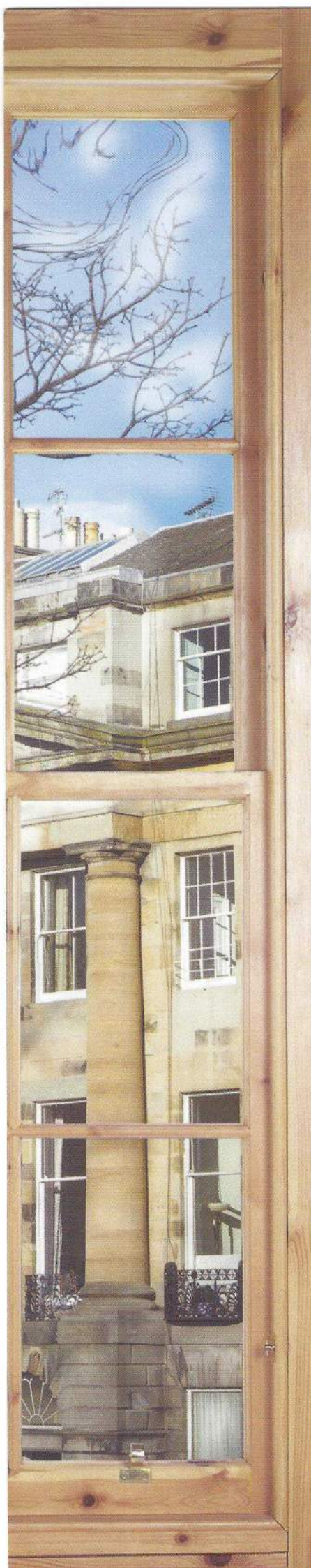
See simulation on our website at:

www.slimliteglass.co.uk/slimlite-self-cleaning-double-glazed-units.html

Lotus Leaf



Hydrophobic Glass



slimlite ultraclear

slimlite Double Glazing Company the Patented Originators of the unique slim type Units which opened up a completely new market making a significant UK contribution to reducing carbon dioxide emissions and energy consumption.

slimlite by adopting technical advances have enhanced the clarity of double Glazed units, which reduces the tinted effect of Low E Glass. The lack of clarity of Low E Units has been raised many times by the Trade, Specifiers and the ultimate Customer.

The advantages of the extra clarity increases the daylight and solar factor from the sun, providing a measure of heat for a time and therefore reducing energy usage for a time. Extra clarity increases the window energy ratings by increased solar factor.



slimlite ultraclear self-cleaning

Light Transmission 85%

Solar Factor 79%



slimlite standard self-cleaning

Light Transmission 75%

Solar Factor 73%



other slimlite products

slimlite Standard Laminate Self-cleaning

Light Transmission 74% • Ultra Violet 2% • Solar Factor 66%

slimlite Laminate Sound Reduction Self-cleaning (33-36 Decibels)

Light Transmission 73% • Ultra Violet 1% • Solar Factor 66%

Where there are special requirements to protect internal furnishings laminated glass in unit construction will reduce Ultra Violet Transmission by around 98%.

Crown Glass

Our Reproduction Crown reflects the visual appeal of the slight distortion effect of the Old Crown preferred by Heritage and Historic Association. See photograph back cover.

Anti Condensation Glass

This is a speciality Pilkington Glass for the external pane of a double glazed unit, which will delay or prevent condensation appearing on the outside face of a double glazed unit. This phenomena can occur in the Autumn or Spring when the external air is warm and drops in temperature and reaches the dew point which can cause condensation to appear on the colder outside pane of the unit.

The anti condensation glass keeps the outside face of glass of the unit warmer which will delay or prevent the condensation appearing.





IT IS A LEGAL REQUIREMENT THAT ALL DOUBLE GLAZED UNITS MUST HAVE **CE** MARK IN ACCORDANCE WITH CONSTRUCTION PRODUCTS REGULATION DECLARATION OF PERFORMANCE
CERTIFICATION CE BSEN1279 APPROVED

To manufacture double glazed units, certification is required for BSEN 1279 Part 2, Production Quality and BSEN 1279 Part 3, which relates to Gas Leakage at less than 1% per annum, and are a Legal requirement.



slimlite certification

Certificate BSEN1279 Part 2 BSI 262/4677672 (Production Quality)

Certificate BSEN1279 Part 3 BSI 371/7758378 (Gas Leakage)

Certificate BSEN1279 Part 6 SDG0703/11870B Annex B Audit Test

Certificate BSEN673 UKAS Certified U-Value (Insulation)

Certificate BSEN150 8990. National Physical Laboratory Thermal Transmittance

Certificate AC-09-140-03/09 ISO 717-1 Sound Reduction



slimlite

safety glass standards

Toughened glass, Class 1 BSEN 12150

Laminated glass, Class 2 BSEN 14449

Safety glass required for all door and sidelights and any glass in a window below 800mm from the floor and can be toughened or laminated glass. Laminated glass has less breaking resistance than toughened glass. Laminated glass will provide protection to internal furnishings as Ultra Violet radiation is reduced by 98/99%.

All slimlite Premier Quality Self Cleaning Double Glazed Units can be constructed as the under-noted example or with any type of glass or thickness. The width of the cavities denote the insulation or U Value, and thickness of glass has little or no effect on U Values.

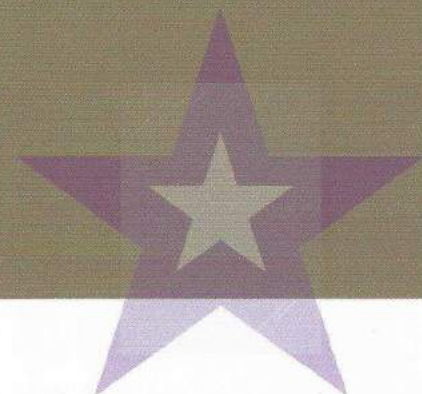
Sample Constructions

Constructed 3 or 4mm Low E/3.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 2.1	9mm, 10mm, 11mm
Constructed 3 or 4mm Low E/4.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 1.9	10mm, 11mm, 12mm
Constructed 3 or 4mm Low E/5.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 1.7	11mm, 12mm, 13mm
Constructed 3 or 4mm Low E/6.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 1.4	12mm, 13mm, 14mm
Constructed 3 or 4mm Low E/8.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 1.3	14mm, 15mm, 16mm
Constructed 3 or 4mm Low E/10.0mm Cavity, gas/3 or 4mm clear float or Reproduction Crown	U Value 1.2	16mm, 17mm, 18mm

Warm Edge Spacer

It is generally considered that warm edge spacer used in slimlite Construction will improve current centre pane stated U Values by 0.1-2%.

Double Glazed Units have a gas leakage rate and are required to have a gas leakage certificate at a rate less than 1% per annum which is BSEN1279 Part 3. The standard gas fill required is 90%, but slimlite has an average gas fill of 96.5% and certified average leakage loss at 0.77% per annum. Therefore slimlite has approximately 7% more gas over a period of 10 years at 89.32% and 20 years at 82.67% compared to a standard unit gas 90% fill with resulting loss at 79.33% at 10 years and 74.33% at 20 years. Loss of inert gas will decrease the insulation of a double glazed unit which is important in today's escalating energy costs.

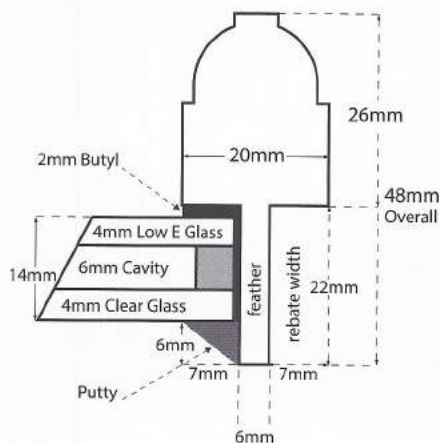
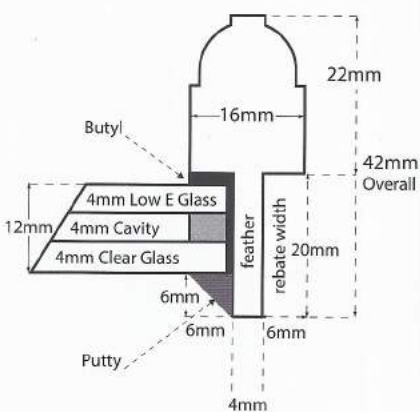
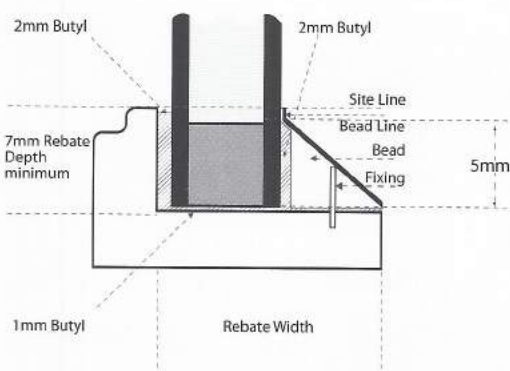
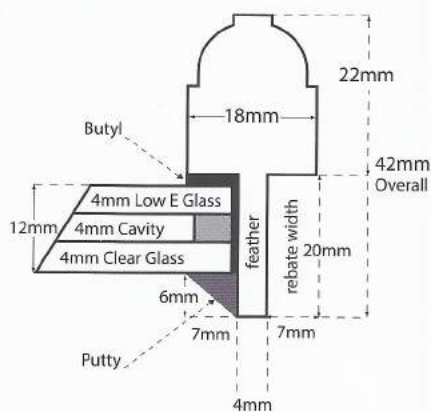
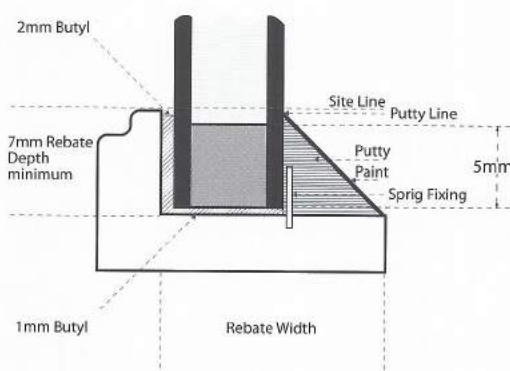
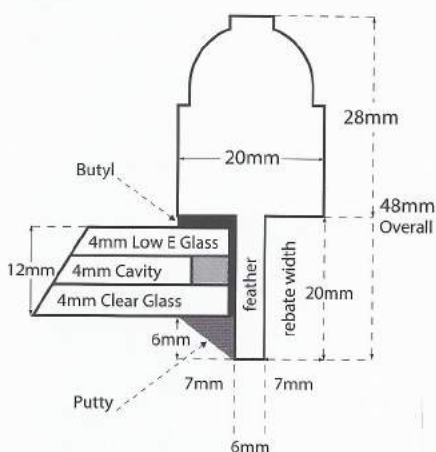


www.slimliteglass.co.uk

Self-cleaning Double Glazed Units

- **Nominal Cavity Widths:**
3.0mm - 4.0mm - 5.0mm - 6.0mm - 8.0mm - 10.0mm
Other cavities and triple cavities on application.
- **Standard overall Perimeter Seal Depth:**
5.0mm (overall tolerances + or - 1mm)
- **Minimum timber rebate depth:** 7.0mm

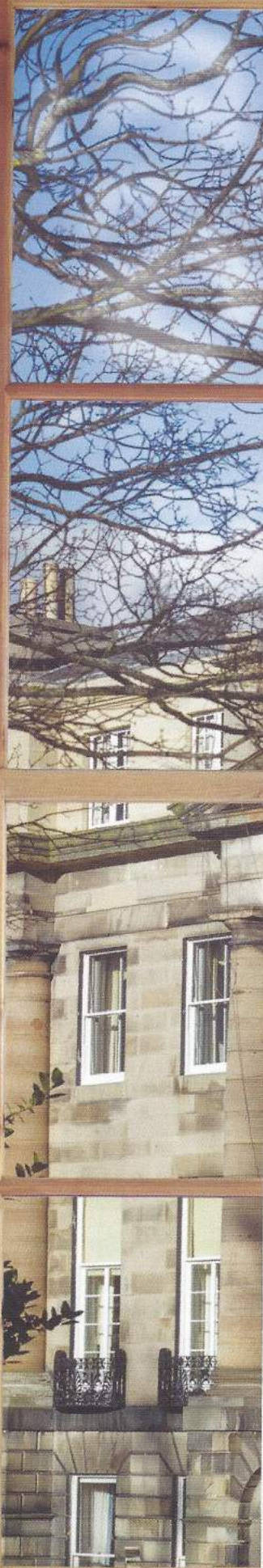
Section Standard astragal or glazing bars with slimlite (not to scale).



Overall window U Value 1.6

Note

Glazing sizes should be less 2 or 3mm from height and 2 or 3mm from width. Allowance should be made where frame sizes are irregular.





Sound Reduction and U-Values

Sound reduction with double glazed units is an increasing concern for clients and specifiers to improve habitations where noise is a problem, generally in heavily populated areas.

slimlite Double Glazed Unit cavities are filled with Krypton inert gas which is much heavier than the standard Argon and therefore provide much better sound reduction than standard units. The widths of cavities has little or no effect on sound reduction. Therefore each cavity will have the same effect.

Sound reduction in standard double glazed units 2 panes of 4mm glass with Air Cavity - 25 Decibels.

slimlite Double Glazed Units - Sound Reduction (Acoustic Insulation)

Constructed:

Example: Normal noise reduction $RW = 31$ Decibels - Traffic $C_{tr} = 27$ Decibels

4mm Low E/4mm Cavity, gas/4mm clear	31 Decibels,	Traffic 27 Decibels,	U-Value 1.9
4mm Low E/5mm Cavity, gas/4mm clear	31 Decibels,	Traffic 27 Decibels,	U-Value 1.7
4mm Low E/6mm Cavity, gas/4mm clear	31 Decibels,	Traffic 27 Decibels,	U-Value 1.4
4mm Low E/8mm Cavity, gas/4mm clear	31 Decibels,	Traffic 27 Decibels,	U-Value 1.3

Other Constructions - Sound Reduction

Constructed:

6mm Low E/4mm Cavity, gas/4mm clear	33 Decibels,	Traffic 30 Decibels,	U-Value 1.9
4mm Low E/4mm Cavity, gas/6.8 Optiphon	35 Decibels,	Traffic 31 Decibels,	U-Value 1.9
4mm Low E/4mm Cavity, gas/10.8 Optiphon	38 Decibels,	Traffic 34 Decibels,	U-Value 1.9

Sound is measured over a range of frequencies and sound reduction is shown in Decibels, and a 3 Decibel reduction in sound will be very noticeable.

The higher decibel figure reflects increased sound reduction.

Sound Insulation ISO 717 (1982)

Issued by University of Salford (Acoustics Test Laboratory) UKAS ACCREDITED TEST LABORATORY NO. 1262

Client: slimlite Double Glazing **Test specimen mounted by:** Client **Description of the specimen:** 4mm/4mm, cavity gas/4mm

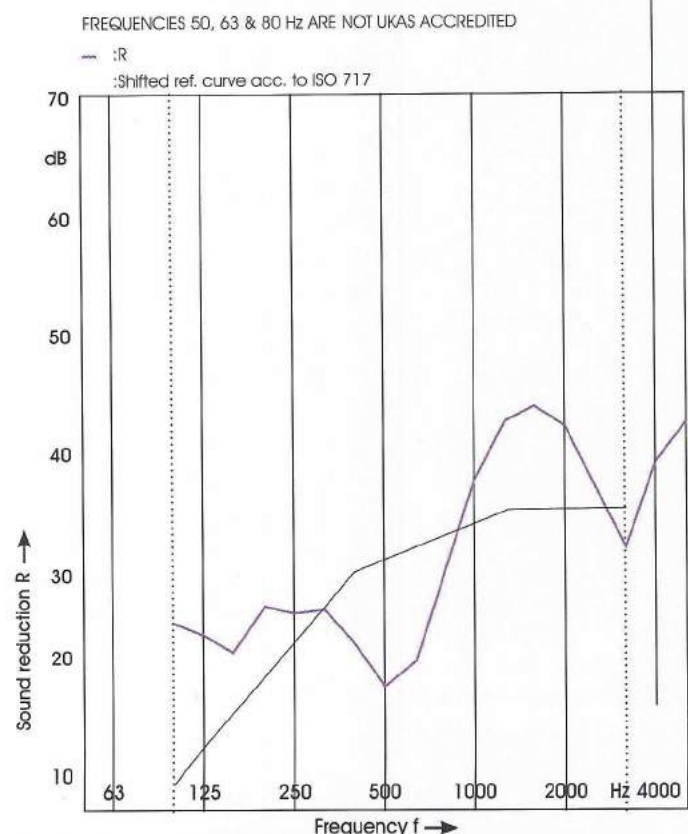
Product identification: Double Glazed Unit **Test room identification:** Small Reverberation Room / Large Reverberation **Date of test:** 08-07-09

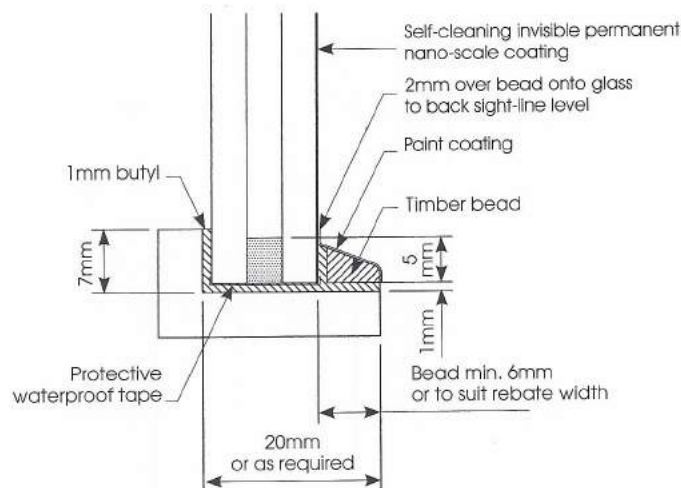
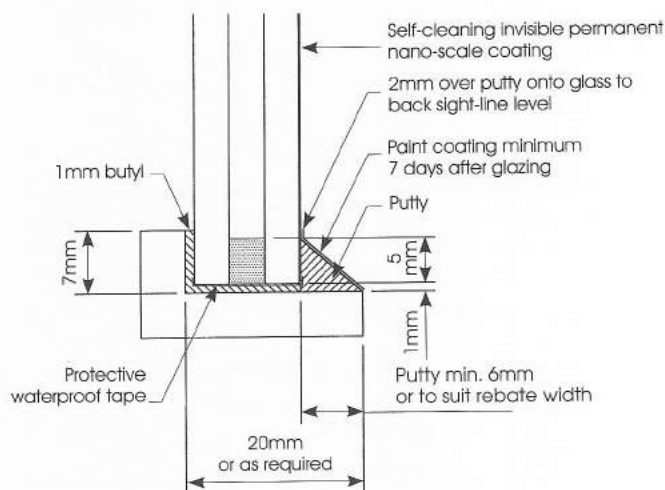
Size: 0.589 m² **Mass per unit:** 18 kg/m²

Temperature [°C]: 21.9 **Humidity [%]:** 50.4

Source room Volume: 136 m³ **Receiving room Volume:** 220m³

Frequency [Hz]	R 1/3 oct. [dB]
50	-
63	-
80	-
100	25.7
125	24.6
160	23.1
200	27.1
250	26.5
315	26.7
400	24.0
500	20.1
630	22.4
800	30.7
1000	37.9
1250	42.3
1600	43.7
2000	41.9
2500	37.3
3150	32.2
4000	39.1
5000	42.2





Double Glazing Breakdown or Misting

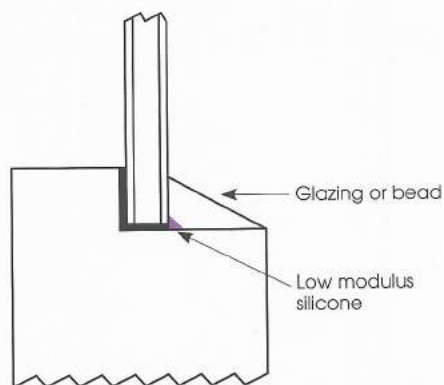
This is caused by failure of the glazing method which must protect the unit seal from the ingress of water or moisture. All double glazing sealants used in the manufacture of double glazing units have a moisture vapour transmission rate when exposed to water or moisture, which will cause misting or breakdown eventually over a period of time. Where units are fore-puttied, the putty must be painted and on to the glass to provide a seal to protect the putty from moisture ingress. Fore-putty should be left for 7 to 10 days before painting and within 28 days.

Similarly when glazed with beads and non hardening compound, paint or protective coating should be applied over the bead and on to the glass. Where timber preservative has been used, Manufacturer's instructions should be followed to prevent reaction with glazing compound. All slimlite Self Cleaning Unit are edge taped with a strong adhesive aluminium foil which helps to avoid damage during handling, but most importantly provides some extra protection should glazing failure occur allowing ingress of water or moisture.

It is recommended that timber windows should be painted every five years Inland areas and three years Coastal areas. However it is recommended that the paint protection of the glazing including the overlap on to the glass face, should be repainted every three years to maintain the required protection particularly with putty fronting as a minimum. However more frequent 'spot painting' may be necessary to maintain the required standard of protection.

BS6262 Section 9.3.2.4.2

BS6262 Section 9.3.3.2



Optional Extra Glazing Protection

Most causes of misting in the cavity of double glazed units are a result of the glazing protection failing and allowing water into mainly the lower horizontal glazing rebate.

All current double glazing perimeter sealants have a water vapour transmission rate when contacted by water or moisture and in time will appear as misting in the cavity. Water or moisture in the glazing rebate unless rectified will eventually cause decay in the timber section.

As an optional added protection a small bead of low modulus silicone which is resistant to water can be applied as a small bead 2 to 3mm around the joint between the outer edge of the unit and rebate which must be perfectly dry to ensure good adhesion between unit and rebate (see sketch). See adjacent painting recommendation.

Construction Materials of slimlite Double Glazed Units

slimlite is probably the most innovative product to arrive in the Double Glazing Industry for many years and was achieved by utilising the very latest technology and best products available.

Glass

There are two types of emissivity glass referred to as (Low E), Soft Coat and Hard Coat. Soft coat is applied to one face of the glass often manufactured by vacuum deposit. The other hard coat is applied to the glass during manufacture and forms part of the glass.

Spacer

Super Spacer is a North American, structural foam spacer with integral drying agent and is referred to as warm edge technology. This ensures there is no significant thermal difference around perimeter edge of unit, with significant advantages over other spacers, and is considered to reduce the calculated U Value by 0.1-0.2.

Sealant - Bostik 5000 Insulating Glass Sealant (Approx.) Typical Performance

Moisture Vapour: $<0.1\text{g/m}^2$ per day for 2mm film

Transmission Rate: at 25°C (77°F), 100% RH.
(ASTM method E96)

Inert Gases

Krypton is the best inert gas on the market, particularly for small cavities. It is also a heavy gas, which is reflected in the superior sound reduction figures for slimlite and additionally provides very good thermal insulation but is more expensive than Argon used in standard units.

Most manufacturers use Argon, a very light inexpensive gas which has little or no effect on sound reduction.

Solar Factor

Everyone knows that when the sun shines through a window, the room heats up from solar factor. This solar factor now forms part of the energy calculations to improve window energy ratings. There is therefore a desire to improve the solar factor through a double glazed unit by using glass with good solar factor, to increase the overall window rating, and free winter heating.



General Information on Heat Loss in Glazed Timber Sash & Case Windows

Single glazed timber sash and case windows are very poor at conserving energy. The heat loss through single glazing which has a U-Value of 5.8 is around 25%.

This is caused by the single pane of glass which will be at approximately the same temperature as it is outside. In colder conditions in a room at around 20 degrees centigrade, the warm air will contact the cold single glazing and drop downwards at a rate exceeding two metres per second, sometimes mistakenly considered as a draught through window construction joints.

This causes a constant convection in a room where the air is being heated and then cooled by the cold single glazing, resulting in an expensive, continual heat loss, through the glass.

Low E Double Glazing such as **slimlife** will reduce heating bills by up to 20% each year, due in part to the Low E glass which reflects the long wave radiation or heat back into the room, combined with the insulating inert gases contained in the cavity of **slimlife**, Krypton, which is the most effective Inert gas insulator.

The insulating effect keeps the inside pane, normally the Low E glass much warmer than the outside temperature, thereby considerably slowing down the convection mentioned above and reducing heat loss.

Recent figures estimate that Low E double glazing such as **slimlife** because of the escalating costs of energy will provide a pay back term of 3 to 5 years, depending on the insulation value.

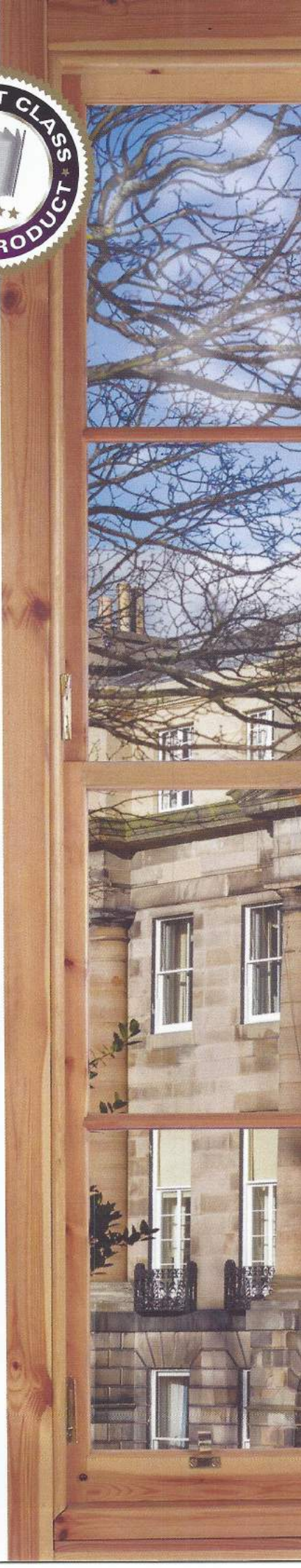
Replacement of one square meter of single glazing by Low E double glazing will provide a saving of approximately 90Kg of carbon dioxide emissions per year.

The very design of sash and case windows permit the ingress of air which does not affect the thermal performance of **slimlife** double Glazing. However a good quality draught proof system should reduce the draughts by around 80%.



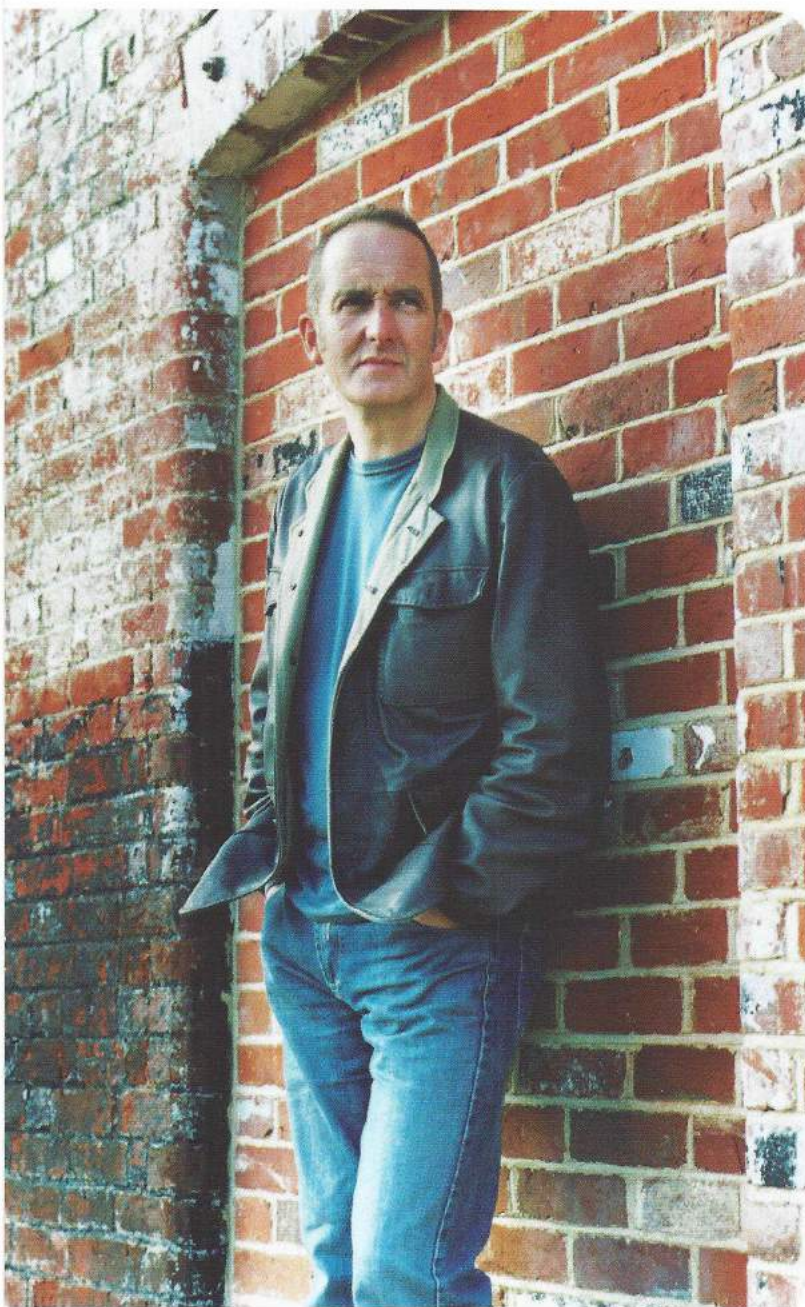
Document L England - Section 6 Scotland

These new insulation requirements for windows are a result of the Kyoto Agreement to reduce carbon emissions and bring to an end the poor insulation of single glazed windows except for Listed Buildings. However Edinburgh have recently made a major policy change allowing replacement double glazing such as **slimlife** to A and B Listed Buildings. Edinburgh has more Listed Buildings than any other City in the UK except London, other City Authorities may well consider their current policies.



Period drama

Continuing his new series on building materials, **Kevin McCloud** looks at ultra-thin double-glazing that's perfect for historic windows



Without glass we would be either extremely cold or stumbling around at home in the dark bumping into each other. Glass is the great revealer of light and shade in our buildings; without it there would be no interior design. Think about it – decorative wallpaper depends on an amorphous solid formed by melting then cooling sand.

The invention, not just of glass, but of framing systems, double glazing, special metal oxide coatings to reflect heat, gas-filled voids and silicone sealant have, in the past fifty years, been responsible for one of the most insidious conditions of the modern age: an addiction to light. Anybody building an office block, hotel or house instructs their architect that their building must be 'flooded' with light. Or 'inundated', or 'pooled'. Glass allows us to wash our architecture clean in the light of the sun and scour our souls. Forget brick, harbinger of gloom.

Unless you live in a listed building, of course. Or in a conservation area. Or in one of the several million Georgian, Victorian and Edwardian homes in Britain with modestly sized windows. Traditional homes are often gloomy in parts, not least because we hang curtains, fit shutters and put up blinds, partly for privacy, but partly in an attempt to keep the heat in the building. My own house has tiny windows set into stone walls half a metre thick. This has resulted in an addiction to gloom.

To make matters worse, the conservation culture that pervades Britain is so violently opposed to fitting energy-efficient double glazing to our listed buildings that we're all forced to hang curtains made from old duvets and candlewick bedspreads.

I do have a lot of sympathy for the conservation viewpoint, however. One of the principles underlying conservation theory in this country is that of minimal intervention: replace only the essential. A properly maintained Victorian terraced house with its original front door, cast-iron rainwater goods and fine sash windows is a handsome thing. A rare breed these days in your average street full of bastardised mutant houses. Moreover, if you've ever stood in a period house that's been fitted with uPVC double glazing, you'll know that the frames often leak and that the plastic is so weak and flimsy the only way the window stays in place is by beefing up all the sections of it so that the bit of glass ends up being half the size of the original. When they say 'replacement double glazing' they mean they're going to replace your glass with some thick white plastic that creaks.

So you would think that conservation officers across the land would rejoice at the news that it is now possible, after decades of research, to replace a cracked single pane of glass with a highly efficient panel of super-micro double glazing. A panel so finely detailed and slim (at 10 or 12mm thick) that it can be puttied into a Victorian sash or a finely carved Georgian lamb's-tongue glazing bar and not be noticed. A panel that can be heat-treated to give a subtle warp to the surface to mimic the hand-blown crown or cylinder glass of yesteryear. A panel so brilliantly made that it turns a cold, inefficient period window into one that is condensation-free and that meets current building regulations – with a U-value of just 1.8.





Trade secrets

Radar

Kevin McCloud

Report

Building blocks

Ask our architect

Green guide

Expert advice

Self-build planner

Insider guide

On the market

Left Ian and Sophie Cooper used Slimlite double-glazing units to restore the windows of their former mill storehouse in Somerset

A wall's average U-value is 0.3; single pane glazing has a miserable value of between 5 and 6. This new double-glazing system, invented by a man called Jim in Edinburgh and sold by his company, Slimlite, matches the performance of standard double glazing thanks to its metal coated surface and a mixture of krypton and xenon gases in the tiny gap. In larger spaces these gases start to form convection currents, breaking down their insulating usefulness, but in a small void they're highly efficient.

But such carbon-conscious information has no appeal for conservation officers and the likes of English Heritage inspectors. There is currently a wall of rejection of this new technology in this country as the conservationists hide behind the duvet curtains. I agree that wherever possible the original fabric of a building needs to be conserved and retained. But globally we face climatic changes in the next hundred years that will affect both how and whether we value our historic environment, and threaten the structural integrity of many of our old buildings. Better to intervene now and make them more energy efficient by draughtproofing, insulating and double glazing them with this system, than allow them to contribute to global meltdown. Edinburgh has taken a lead in allowing the retrofitting of Slimlite to historic buildings; Bath Council has approved it for Ian and Sophie Cooper's historic industrial building (featured on *Grand Designs*, see page 66), but that's not enough.

Two per cent of our housing stock is listed. Piffing, you might say. But every time a conservation officer works with a homeowner to make a historic home more energy

Slimlite double glazing

Advantages

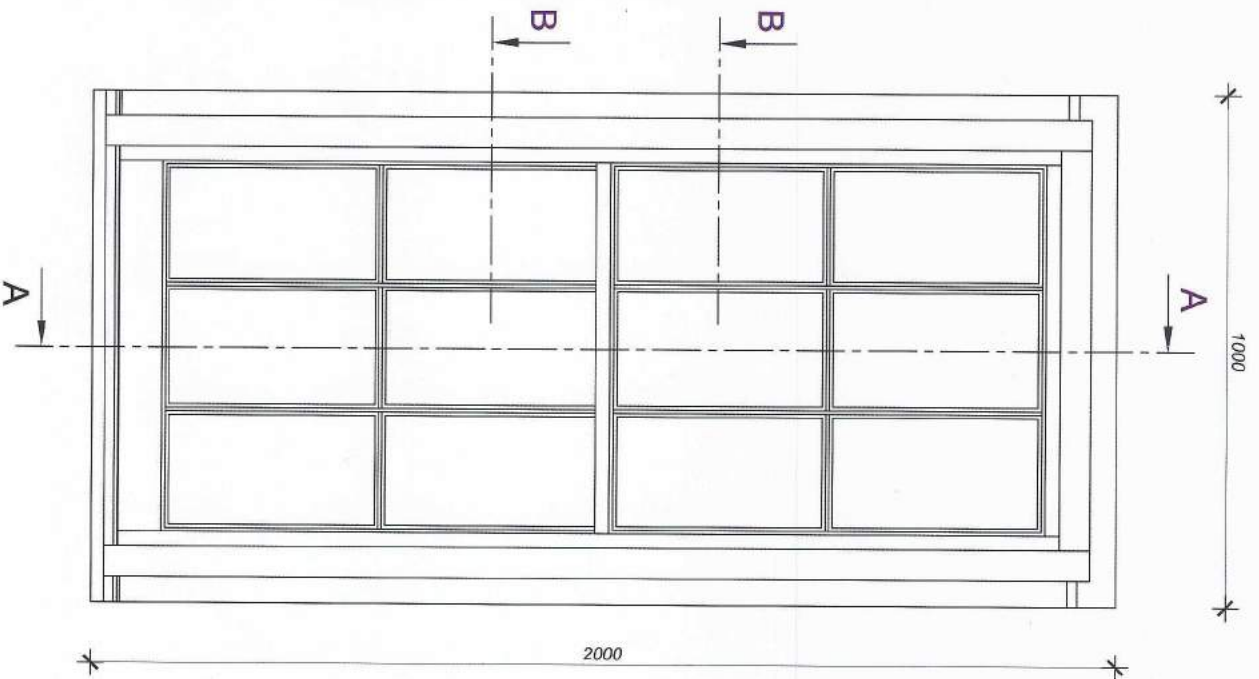
- ◆ Slimlite's double-glazed units are just 10-12mm thick, which allows them to be fitted to most existing single-glazing openings
- ◆ The units offer excellent insulation due to the thermally efficient inert gas (xenon or krypton) sandwiched between the two panes of glass
- ◆ Low-emissivity glass used for the inner pane reflects heat back into the room
- ◆ Replacing one square metre of single glazing with low-E double

glazing will give you a saving of approximately 90kg of carbon dioxide emissions per year by cutting down on heat loss, which will, of course, save you money on energy bills

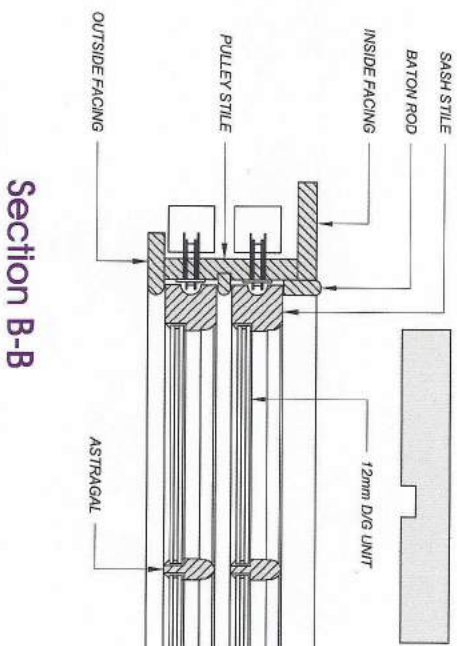
Disadvantages

- ◆ They are not yet widely accepted by conservation officers for use in period buildings
- ◆ The cost may put you off - Slimlite double glazing costs around 60-70 per cent more than standard units. Prices start at £34 for a small (0.3sqm) window

efficient it informs local practice. In fact nearly 20 per cent of all our homes were built before 1918; 38 per cent were built before 1944. And when you realise that the vast bulk of the homes we'll be living in in 2050 are already built, you'll understand why we need to think creatively about adapting our homes to low carbon use. Which is why *Grand Designs Magazine* is launching the Great British Refurb campaign, working with the UK Green Building Council, the Energy Savings Trust and WWF. Watch this space.★

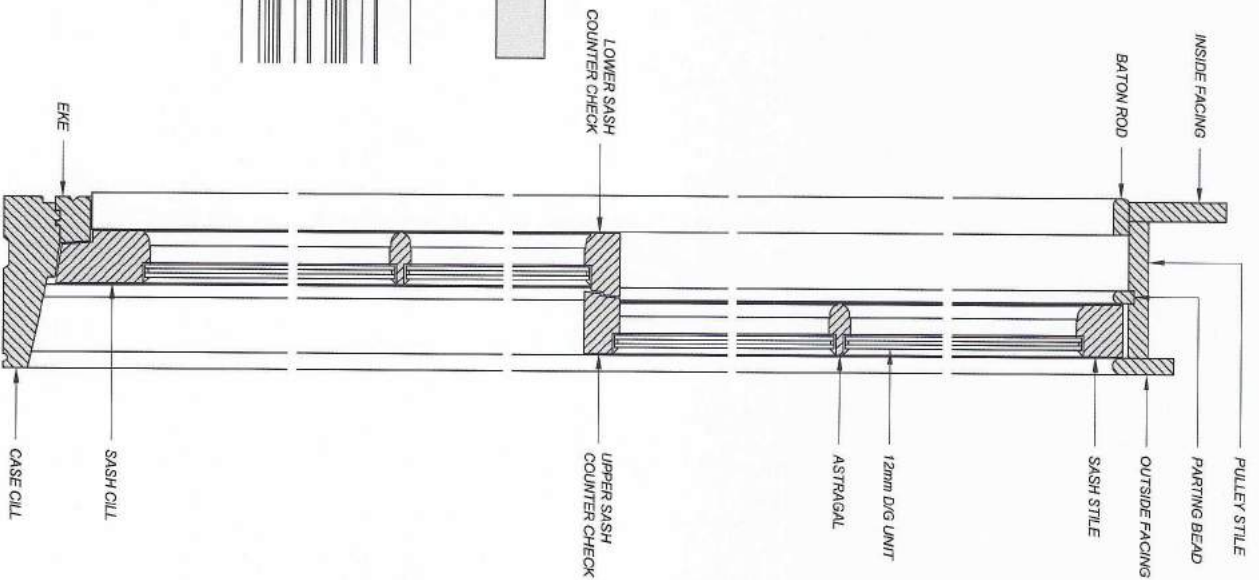


Elevation



Section B-B

Suitable for new or replacement windows.

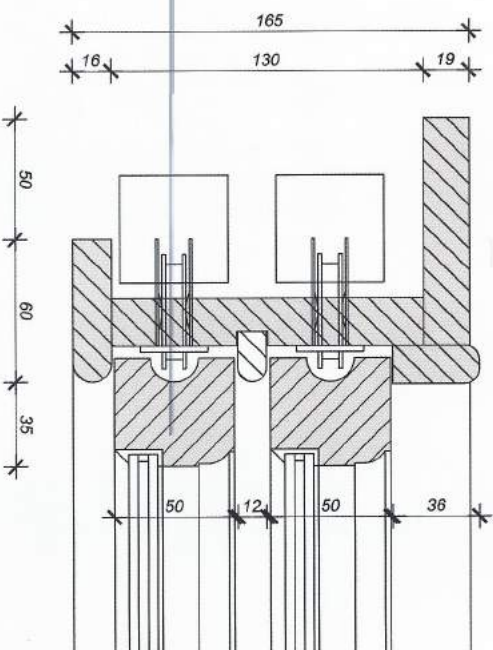


Section A-A

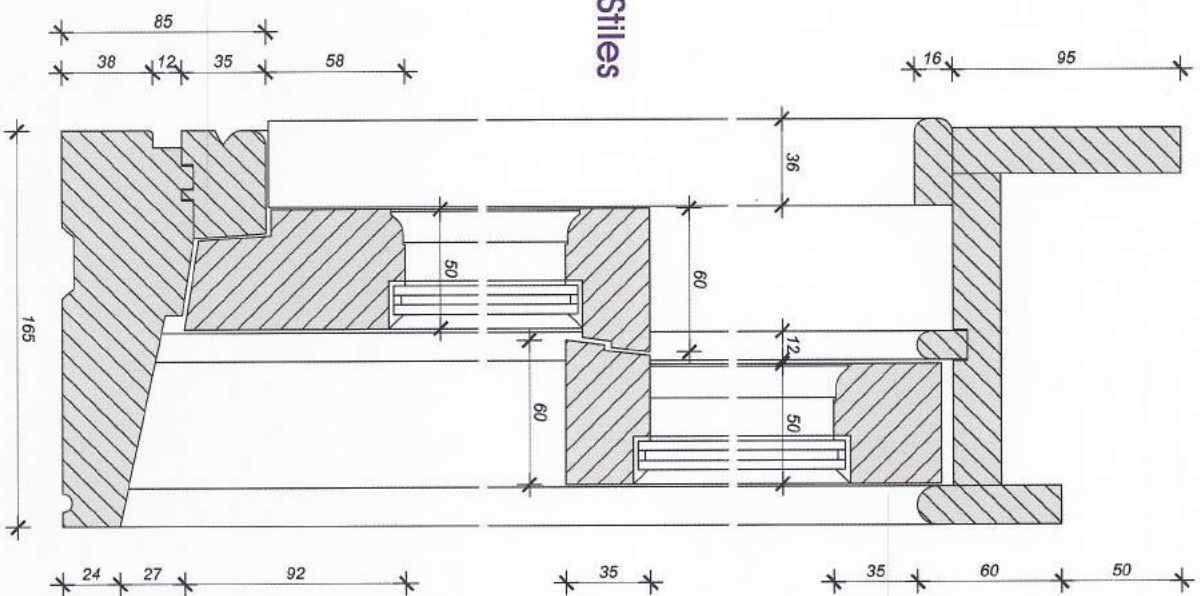
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slimlite

double glazing and any unauthorized distribution to a third party is strictly forbidden. Not to scale.



Meeting Stiles



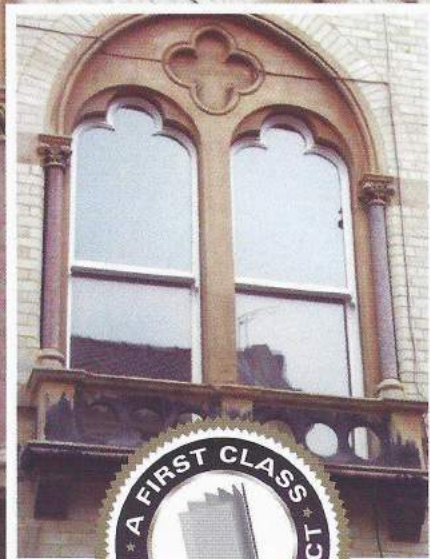
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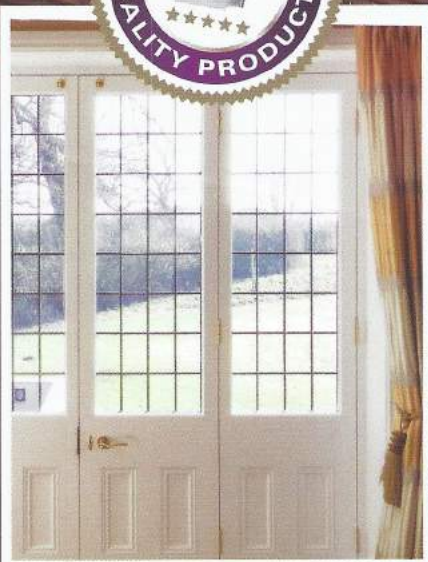
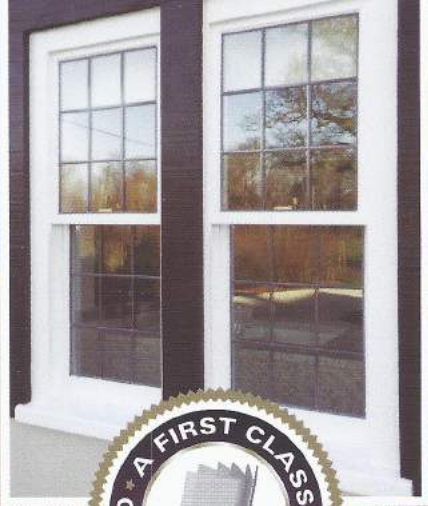


**ANDY WHITESIDE
CARPENTRY**

Window refurbishment to grade 2
listed building on Micklegate York.
Carried out by Andy Whiteside
Carpentry (Richmond North Yorks).



Unusual shaped and curved glass
Slimlite Double Glazed Unit.
CRAFTSMANSHIP AT ITS BEST



Our customer is delighted with the Slimlite Self Cleaning Leaded Double Glazed Units, dramatically improving the visual aspect of his imposing house.

Advantages of slimlite Double Glazed Units

- Will Comply with Building Regulations Section 6 Scotland and Document L England for improved thermal insulation.
- 5mm perimeter seal of slimlite Double Glazed Units enables them to be glazed into 7mm deep glazing rebates.
- The smaller cavities between the glass reduces the required glazing width rebates and enables slimmer sections to be used.
- The only double glazed unit that can be glazed into most standard astragals or glazing bars.
- Can be glazed into most existing single glazing glass rebates.

Carbon Dioxide

In the 2004 Kyoto Protocol the EU pledged to reduce carbon dioxide emissions by 8% period 2008-2012, compared with the 1990 level. Estimated total residential emissions in the UK in 2005 was approximately 85 million tonnes. It is estimated that 27% of total carbon emissions are from property in the UK. Nearly all double glazing is now manufactured incorporating one pane of Low Emissivity (Low E) glass, which reflects the long wave radiation or heat back into the room.


The replacement of one **square metre** of single glazing with slimlite Low E double glazing creates a saving of approximately **90Kg of carbon dioxide emissions per year**.

The average small house with **15 square metres** of single glazing replaced by Low E double glazing would **reduce carbon dioxide emissions by around 1350Kg per year**.

Crown Glass

Our Reproduction Crown reflects the desired slight distortion effect of the old Crown glass but also ensures the perimeter edges are flat to ensure the necessary correct construction of a double glazed unit.

Reproduction Crown provides the visual appeal preferred by Heritage and Historic Associations.

A photograph showing a hand holding a rectangular piece of crown glass in front of a brick wall. The glass is slightly tilted, and the brickwork behind it is visible through it, illustrating the 'pleasing, gentle variation effect' mentioned in the text. The brick wall is made of reddish-brown bricks with dark mortar. The hand is visible on the right side, holding the glass by its edges.

The above example of Reproduction Crown illustrates the pleasing, gentle variation effect from the glass on the background brickwork.