

Exterior visual 1: Existing

View from the front yard looking North



Exterior visual 1: Proposed

View from the front yard looking North



Exterior visual 2: Existing

View from the South West looking North East



Exterior visual 2: Proposed

View from the South West looking North East



Exterior visual 3: Existing

View from the West looking East



Exterior visual 3: Proposed

View from the West looking East



Exterior visual 4: Existing

View from the North East looking South West



Exterior visual 4: Proposed

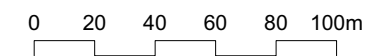
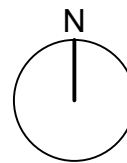
View from the North East looking South West





Aerial view of site, looking south west

Appendix A: Site location map



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OS 100035409

Site Boundary

PLANNING		
Application No.	Date	Notes

project orange
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Proj No. **P001**

Project **OLD APPLECROFT FARM GREAT HENNY, SUDBURY**

Map No. **EXISTING**

Job No.	Drawn	Date	Scale
2101	BC	25.06.21	1:2500 @ A3 1:1250 @ A1

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NOTES
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ALL LEVELS MUST BE CHECKED ON SITE
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Appendix B: CN Glass Heritage Slim
Double Glazed Unit: Additional information



ACTUAL WIDTH FROM 11MM

CN Heritage Range of Slim Double glazed Units manufactured by us using the latest glass and glazing technology available

- CN Heritage Slim Units are specifically produced for period/ historic windows and doors
- CN Heritage Slim Units are produced using Super Spacer Warm Edge Technology and will reduce heat lost through your windows
- CN Heritage Slim Units have low sightlines for glazing into narrow glazing bars
- CN Heritage Slim Units will reduce the intrusion of unwanted noise and condensation. Acoustic glass available
- Delivery nationwide for supply only
- 5 Year Guarantee

FOR MORE INFORMATION CALL:

01295 263364

EMAIL: info@cnglass.co.uk

← Sight line
(Actual width 5.5mm)



CN Glass is a single source Glazing Contractor offering a Complete Service for all Glass and Glazing products from initial design consultation through processing, manufacture and installation. We provide a trusted, dependable, professional and experienced service to homeowners, architects and contractors.

With over 40 years experience in the glass industry, CN Glass have become the leading glass and glazing service in Oxfordshire and the Cotswolds area. Glass Toughening, Double Glazed Unit Manufacture and Glass Processing is all carried out in our workshop.

We are Members of The Glass and Glazing Federation and a FENSA Registered Company.

Terms and conditions apply.

Glass is a good insulator but it would need to be very thick as a single pane in a window to have much effect.

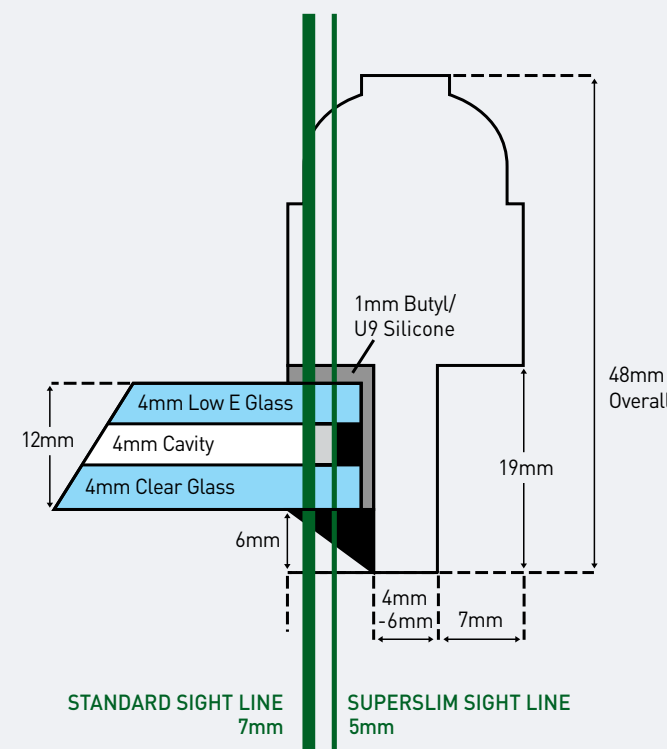
So rather than have thick glass in your windows it is better to have two panes of glass with an inert gas between them.

Repair is the first option to consider when seeking to maintain the character of a building, Sections of the frame that are no longer sound can be cut out and replaced. Where necessary the rebates can be routed out slightly to provide enough depth for the Heritage units to be installed. Sashes can be freed, cords replaced and draught-proofing materials added discreetly.

When looking to improve the thermal performance of a building the windows are a building component where there are many factors to consider. This is particularly the case for single-glazed windows in older and historic buildings. The outright replacement of the windows in Listed buildings is often considered inappropriate, for conservation reasons.

Most traditional timber windows incorporate low line glazing beads. This creates problems with standard aluminium or warm edge spacer bar protruding into the sightline of the window, Super Spacer has a lower sightline equivalent to only 5.5mm from the edge of the glass, eradicating this problem

CN Heritage Slim Standard & Superslim Configurations - drawing not to scale



CALL 01295 263364

EMAIL: info@cnglass.co.uk

Workshop & Showroom:
Norton House, Beaumont Road, Banbury, OX16 1SD

- CN Heritage Slim Units fit into most single glazing rebates with minimal sightlines of 5.5mm
- CN Heritage Slim Units use Super Spacer Warm edge energy saving technology, Low E Glass and specialist insulating inert gases
- CN Heritage Slim Units Standard manufacturing lead times of 5-7 working days
- CN Heritage Slim Units can be manufactured using Low E clear and obscure glass which can also be toughened. Restoration glass will provide an authentic period reflection (cannot be toughened however a safety film can be applied).
- CN Heritage Slim Units manufactured to a minimum of 11mm overall depth using 4mm Low E x 4mm Gas x 3mm Float (cannot be toughened)
- CN Heritage Slim Units are available with a U-Value as low as 1.0 W/m²K when using Xenon gas
- CN Heritage Slim Units shaped glass from templates supplied and large units are available
- CN Heritage Slim Units comply with Building Regulations Document L England
- CN Heritage Slim Units are Guaranteed for 5 years when glazed to BS6262.



Making and Glazing CN-Slim Heritage Double Glazed Units

Glass

A CN Heritage Slim Unit that will fit into a minimum 17mm rebate the outside glass will be 3mm thick and the inside glass 4mm thick, this will produce an overall unit of 11mm depth. The glass can be simply clear or patterned annealed/float glass, for safety it can be toughened, for an improved thermal performance it can be Low E Energy Saving glass. (3mm glass cannot be toughened, safety filming can be used)

For new replica timber windows the rebate will be slightly deeper allowing for both internal and external glass to be 4mm therefore the overall depth of the unit will be 12mm.

Restoration Glass

The only traditional method of flat glass making left is the cylinder process (known as hand drawn or restoration glass). This is now used in restoration projects that would originally have utilised crown glass.

Glass is gathered on the end of a pipe and placed on a block of hollowed-out wood. The glass is blown and then re-heated. The blower swings the glass "pipe" in a vertical plane until it is elongated into a cylinder. The cylinder is then split down lengthways.

The split glass is then re-heated and flattened on a smooth stone and then annealed. This process allows the colour range to be limitless; the glass is used ecclesiastically, commercially, domestically and for restoration purposes. It is also easier to make in comparison to any of the other processes.

This type of glass has no impact on the U-value of the unit, it is just the same as ordinary annealed/ float glass.

Glazing

We bed the units on Hodgson U9 Low Modulus silicone, centralising the unit within the frame using glazing spacers, filling the void between frame and glass with the low modulus silicone, this allows both movement and a waterproof seal. Allow the silicone to cure and then face putty using Hodgsons oil free Multi-Purpose or Butyl putty or use timber glazing beads and stainless steel nails and capping off with the Hodgson U9 Low Modulus silicone to finish. Putty is then brushed with a soft brush and painted 5-10 days later in outdoor conditions.

Edgetec Super Spacer

To produce our CN-Slim Heritage Double Glazed Units we use Edgetec Super Spacer bar. Edgetec Super Spacer bar introduces no-metal, pre-desiccated, structural foam spacer system that is a warm edge technology to suit all sealed glass unit applications helping to deliver windows of the highest standards.

Super Spacer® bar is specifically produced down to a minimum of 4mm therefore our CN- Slim Heritage units may be produced with a minimum overall depth of 11mm this means it will fit a 17mm rebate.

Traditional timber windows are manufactured with low sightlines of usually about 7mm. This creates problems for standard aluminium and warm edge spacer bars of 12mm sightlines which would protrude into the sightline of the window. Super Spacer has a lower sightline (equivalent to only 5.5mm from the edge of the glass) which eradicates the problem.

Its award winning, patented Thermal Set Spacer (TSS) technology gives the ultimate in high performance spacer systems. Super Spacer® has 100% memory and allows for expansion and contraction, a major cause of fractures in conventional sealed units. (Subject to correct glazing methods detailed above)

With Super Spacer® thermal bridging is all but eliminated, resulting in a massive 70% reduction in condensation. Most of the heat loss through a window occurs at the edge of the unit, Super Spacer® blocks this escape route.

Inert Gases

Krypton and Xenon are heavy inert gasses and have a much lower thermal conductive performance and an improved acoustic performance than air and this means that they are far more efficient insulators making them excellent at reducing the U-value when injected into the cavity of our C N-Slim Heritage Double Glazed Units. Krypton gas is the usual choice for heritage Slim Units and all units have a 93% gas fill.

Technical Glass

With the use of technical glass and by filling the cavity with an inert gas the U-value of CN-Slim Heritage Units can be as low as 1.0.

The reduction of heat loss through the glass is up to 77 per cent as when compared against single glazing.

It is possible for traditional reproduction replacement windows installed with CN-Slim Heritage Double Glazed Units to achieve the new Part L building regulations for thermal efficiency. (Subject to the size of the glazed sections of the window)

CN Heritage Slim Units are also approved by many County, Borough and District Council Planning Departments.

U-Values (the term used to measure thermal efficiency)

A U value is a measure of heat loss in a building element therefore it is the measurement of the whole window and not just the glass. It can also be referred to as an 'overall heat transfer co-efficient' and measures how well parts of a building transfer heat. This means that the higher the U value the less efficient the thermal performance of the building element. A low U value usually indicates higher levels of insulation.

CN-Slim Heritage double glazed units have the appearance of single glazing therefore retaining the character, charm and heritage of the building. Only a very close inspection will reveal the glass to be a double glazed unit especially if restoration glass is used. When glazed traditionally into sash/casement window frames the units are virtually undetectable because slim units do not have the double reflection or the distorted reflection that is seen when you sometimes look at standard double glazing, making them perfectly suitable for conservation or listed buildings. (subject to local planning).

By also using the technical glasses available today and by filling the space between the two panes of glass with an inert gas a home owner may gain all the thermal and sound benefits of normal double glazing without compromising the appearance or the value of their property.

The thermal efficiency benefits of CN Slim heritage Double Glazed Units over single glass can be seen below: Single Glass – U-Valueis approx. 5.6 W/m2K

Glass 1 (External)	Cavity	Glass 2 (Internal)	Centre Pane U-Value
4mm Float/Toughened *	4mm Krypton Filled	4mm Planitherm Total Plus Low E	1.9W/m2K
4mm Float/Toughened *	6mm Krypton Filled	4mm Planitherm Total Plus Low E	1.5W/m2K
4mm Float/Toughened *	4mm Eco Gas Filled	4mm Planitherm Total Plus Low E	1.7W/m2K
4mm Float/Toughened *	6mm Eco Gas Filled	4mm Planitherm Total Plus Low E	1.3W/m2K
4mm Float/Toughened *	4mm Xenon Filled	4mm Planitherm Total Plus Low E	1.4W/m2K
4mm Float/Toughened *	6mm Xenon Filled	4mm Planitherm Total Plus Low E	1.0W/m2K

*Or 3mm Restoration glass

- Available from 11mm depth
- Sightlines of 5.5mm
- Use Soft Coat Low E Glass for a warmer house in winter and cooler in summer
- Use restoration Glass
- Use Toughened Glass
- Fill the cavity with an inert Gas
- Improved acoustic performance
- Low U-Values
- Compliant with Document L
- Self cleaning glass available, applied as a coating to the glass

FOR MORE INFORMATION :
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EMAIL: info@cnglass.co.uk

Appendix C: Listed Heritage Magazine
Article May 2014: A Glaziers point of view

A Glaziers Point of View



A skilled workforce in traditional glass and glazing techniques with over 40 years experience in the glass industry, C N Glass have become the leading glass and glazing service in Oxfordshire and the Cotswolds area. They are Members of The Glass and Glazing Federation Offering a Full Service for all Glass and Glazing products and Services from initial design consultation through processing, manufacture and installation.

WINDOWS

Windows are one of the most important design features of a building and listed properties must adhere to strict requirements in terms of keeping with the original feel of the building.

Even small changes have a significant effect on the appearance. The position of the window in the opening, the proportions of the sashes, the arrangement of the opening lights, the thickness and profile of the glazing bars and the frame material, and indeed the glass and glazing technique itself, all have an effect on the appearance of the window and its appropriateness to the building.

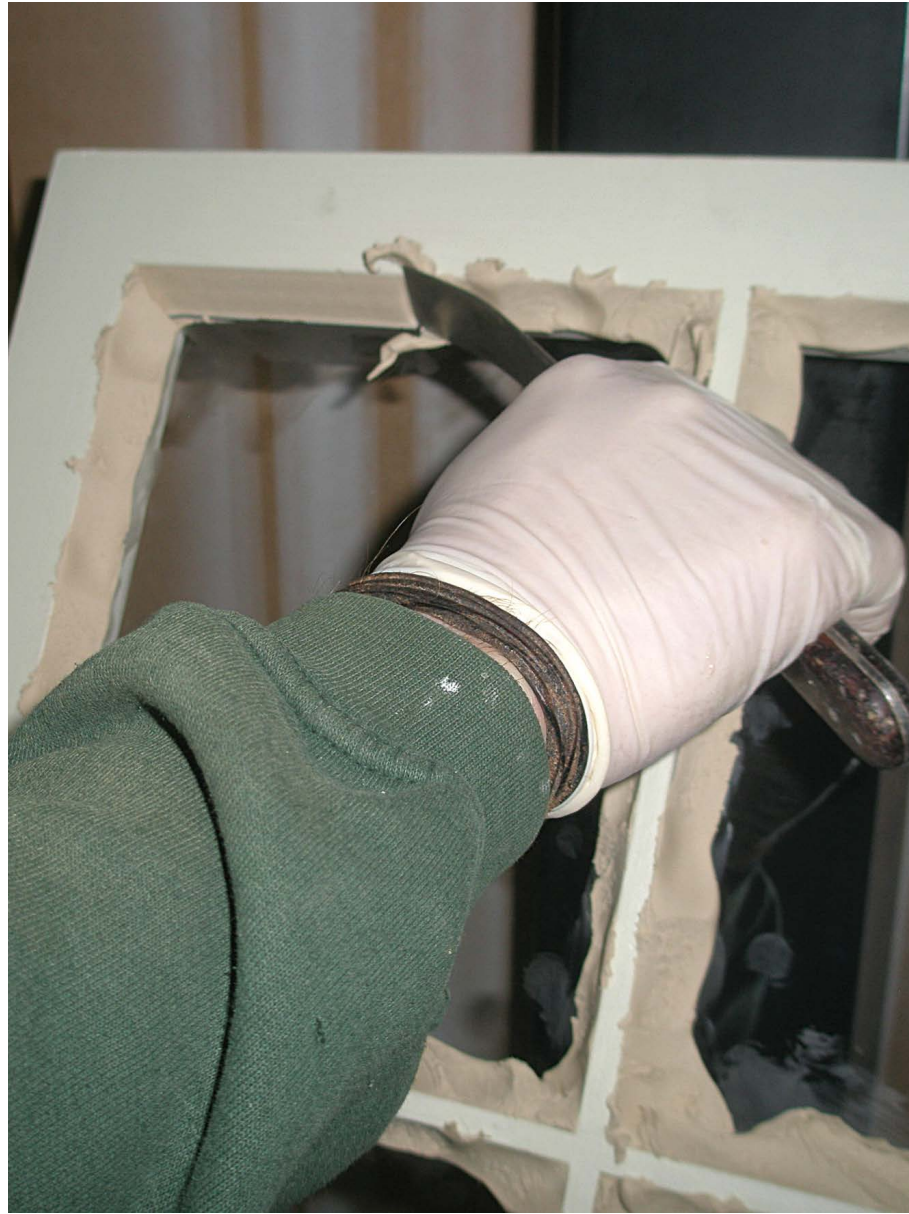
When original windows are in need of attention because of energy-efficiency, draughts, poor decorative condition, inoperative sashes, or general disrepair it may often be better to retain the old timber or metal framed windows within a building rather than replace them. In many cases, architectural or historic features may have to be retained and replacement windows may simply not be appropriate.

SECONDARY DOUBLE GLAZING

The fitting of Secondary double glazing behind the original windows as an alternative to replacement double-glazing will provide excellent draught-proofing resulting in a significant improvement to the energy performance of old windows. Secondary Double Glazing is installed with a choice of float, toughened or laminated glass and will eliminate drafts, increase security and reduce noise from outside.

Secondary double glazing does affect the appearance of the inside of the window and care must be taken to ensure that the glazing bars exactly match the windows' bars and rails and it should be installed close to the existing window frame. This is essential because the whole idea is that it should not be seen when looking in from the outside.

Continued >>



Glazing the traditional way using a multi-purpose putty. A sharp professional finish requires a steady hand.



Cleaning the glass in both frames is sometimes difficult but Secondary Double Glazing usually slides horizontally or vertically depending on the window style and the glass panels may also be lifted out for ventilation and cleaning purposes.

Secondary double glazing comprises of an aluminium outer frame joined to a seasoned hardwood surround, which allows for a neat, unobtrusive installation even in the most difficult situations. A range of hardwood sub-frames and scribing trims can be used to assist face fixing, reveal fixing and the coupling of units. It is suitable for all types of premises including grade 1 and grade 2 listed buildings, schools, colleges, hospitals, universities, hotels and commercial buildings.

REPAIR – UPGRADE – REPLACE

Repair is the first option to consider when looking to maintain the character of a building, particularly as the original glass can often be retained by hacking out the rebate and installing the glass again by the traditional face putty method.

Upgrading wood windows can be more cost-effective than replacement. Making improvements to seals, ironmongery and other mechanisms will lead to improved weather performance.

Manufacture of replica replacement windows involves real craftsmanship, it is of utmost importance to keep to the original construction methods. Individual glazed panes create a varied light reflection across the whole window and exact replica handles stays and hinges to mimic the originals in order to maintain the original character of any period property façade.

SLIM HERITAGE DOUBLE GLAZED UNITS

The original or replacement windows may be further improved by replacing the original single-glazing with Slim Heritage Double Glazed Units, this is a form of double-glazing with a cavity between the two glass panes that is thinner than that in conventional double-glazing units. Slim-profile double-glazing generally has a less efficient thermal



Secondary Double Glazing installed into a listed property. Look closely because it is not easy to see it, that's the beauty of this product, it will not spoil the original look of the windows.

performance than conventional double-glazing, but performs thermally significantly better than single-glazing. The thermal performance of slim profile double glazing can however be improved further by using technical glass and by injecting an inert (Krypton/ Eco/ Xenon) gas to fill the cavity.

The slim heritage double glazed units can be glazed traditionally into most existing single glazing glass rebates of 17mm. By also using the technical glasses available today and by filling the space between the two panes of glass with an inert gas a building may gain all the thermal and acoustic benefits of normal

Continued >>

double glazing without compromising the appearance or the value of the property.

Only a very close inspection will reveal the glass to be a double glazed unit especially if Crown reproduction glass is used. When glazed traditionally into sash/casement window frames the units are virtually undetectable because slim units do not have the double reflection or the distorted reflection that is seen when you sometimes look at standard double glazing, making them perfectly suitable for conservation or listed buildings. (subject to local planning).

For a unit that will fit into a minimum 17mm rebate the outside glass will be 3mm thick and the inside glass 4mm thick, the spacer bar is produced down to a minimum of 4mm so this will produce an overall unit of 11mm depth. The glass can be simply clear or patterned annealed/float glass, for security it can be toughened, for an improved thermal performance it can be Low E Energy Saving glass.

For new replica timber windows the rebate will be slightly deeper allowing for both internal and external glass to be 4mm therefore the overall depth of the unit will be 12mm.

To produce the Slim Heritage Double Glazed Units at CN Glass we use Edgetech Super Spacer® bar, introducing a no-metal, pre-dried, structural foam spacer system that is a warm edge technology to suit all sealed glass unit applications helping to deliver windows of the highest standards. Its award winning, patented Thermal Set Spacer (TSS) technology gives the ultimate in high performance spacer systems. Super Spacer has 100% memory and allows for expansion and contraction. With Super Spacer® thermal bridging is all but eliminated, resulting in a massive 70% reduction in condensation. Most of the heat loss through a window occurs at the edge of the unit, Super Spacer® blocks this escape route.

Traditional timber windows have much slimmer profiles than the modern choice of today's window styles and are glazed with low sightlines. This creates problems for standard aluminium or warm edge spacer bars because they protrude into the sightline of the window. Super Spacer has a lower sightline which eradicates the problem. 🌿

For further information

CN Glass

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sales@cnglass.co.uk



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Replacement timber casement and sash windows glazed with C N Heritage double glazed units using Low E Energy Saving Glass



Edgetech Super Spacer®, used to manufacture C N Slim Heritage Double Glazed Units



View from site looking north



**project
orange**

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