



Windows and Roof Lights



**17-27 Queen Victoria Street
Reading
RG1 1SY**

Presented By:

VOLUTE London Ltd
69 King William Street
London, EC4N 7HR

Date: 23 August 2019



01 East Elevation
Scale: 1:50

Note:

Please refer to the Oxley Conservation Condition Survey Report Jun 2017 for all items requiring remediation, repair and refixing.

Scenario Architecture

10a Branch Place
London N1 5PH
p: 0207 686 3445
e: info@scenarioarchitecture.com
w: www.scenarioarchitecture.com

Project Name:
Queen Victoria Street

Client:

Site Location:
17-27 Queen Victoria Street, Reading
RG1 1SY London UK

Drawing not to be used other than the purpose for which it was prepared, it's supplied without liability for errors or omissions, do not scale from the drawing, all dimensions are to be checked on site, this drawing is to be read in conjunction with all other drawings, notes on this drawing will apply to all other drawings where a similar position exists.

Scale @ A1 Project No.

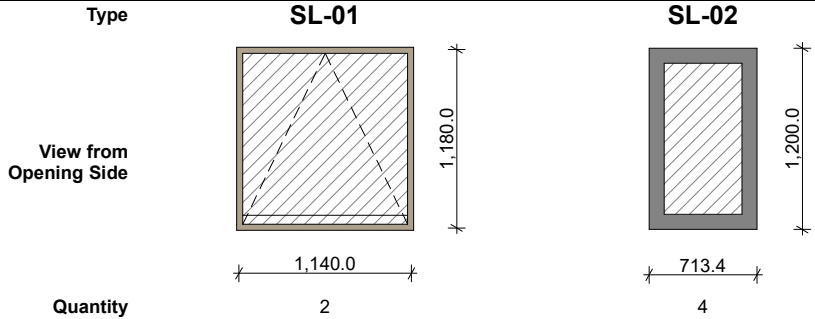
Drawing Name
Elevations

Drawing Number	Rev
0801	B

Window Schedule					
ID	Type	Width x Height (mm)	Glazing	U Value	Acoustic Reduction Rate
First Floor					
W-01-01	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-02	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-03	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-04	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-05	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-06	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-07	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-08	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-09	Existing	1,100.0×2,270.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-10	Existing	1,100.0×2,270.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-11	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-12	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-13	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-14	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-15	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-16	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-17	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-18	Existing	600.0×2,306.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-19	Existing	1,100.0×2,270.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-20	Existing	1,100.0×2,270.0	Secondary Glazing; Single Glazed	2.4	46dB
W-01-21	Type 07	1,240.0×1,500.0	Double Glazed	1.6	29dB
W-01-22	Type 08	920.0×1,640.0	Frosted; Double Glazed	1.6	29dB
W-01-23	Type 08	920.0×1,640.0	Frosted; Double Glazed	1.6	29dB
W-01-24	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-25	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-26	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-27	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-28	Type 11	1,060.0×1,630.0	Frosted; Double Glazed	1.6	29dB
W-01-29	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-30	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-31	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-32	Type 11	1,060.0×1,630.0	Double Glazed	1.6	29dB
W-01-33	Type 08	920.0×1,640.0	Double Glazed	1.6	29dB
W-01-34	Type 10	920.0×1,640.0	Double Glazed	1.6	29dB
W-01-35	Type 10	920.0×1,640.0	Double Glazed	1.6	29dB
W-01-36	Type 10	920.0×1,640.0	Double Glazed	1.6	29dB
W-01-37	Type 10	920.0×1,640.0	Frosted; Double Glazed	1.6	29dB
W-01-38	Type 10	840.0×1,600.0	Frosted; Double Glazed	1.6	29dB
W-01-39	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-40	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-41	Type 10	840.0×1,600.0	Frosted; Double Glazed	1.6	29dB
W-01-42	Type 08	920.0×1,470.0	Frosted; Double Glazed	1.6	29dB
W-01-43	Type 07	1,240.0×1,500.0	Double Glazed	1.6	29dB
W-01-44	Type 07	1,240.0×1,500.0	Double Glazed	1.6	29dB
W-01-45	Type 11	920.0×1,640.0	Frosted; Double Glazed	1.6	29dB
W-01-46	Type 10	840.0×1,600.0	Frosted; Double Glazed	1.6	29dB
W-01-47	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-48	Type 09	770.0×2,100.0	Double Glazed	1.6	29dB
W-01-49	Type 08	930.0×1,640.0	Double Glazed	1.6	29dB
W-01-50	Type 08	930.0×1,640.0	Frosted; Double Glazed	1.6	29dB
W-01-51	Type 07	1,240.0×1,500.0	Double Glazed	1.6	29dB
Second Floor					
W-02-01	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-02	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-03	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-04	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-05	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-06	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-07	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-08	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-09	Existing	1,100.0×2,201.6	Secondary Glazing; Single Glazed	2.4	46dB
W-02-10	Existing	1,100.0×2,201.6	Secondary Glazing; Single Glazed	2.4	46dB
W-02-11	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-12	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-13	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-14	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-15	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-16	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-17	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-18	Existing	600.0×2,087.3	Secondary Glazing; Single Glazed	2.4	46dB
W-02-19	Existing	1,100.0×2,201.6	Secondary Glazing; Single Glazed	2.4	46dB
W-02-20	Existing	1,100.0×2,201.6	Secondary Glazing; Single Glazed	2.4	46dB
W-02-21	Type 01	930.0×1,500.0	Double Glazed	1.6	29dB
W-02-22	Type 06	1,079.7×1,500.0	Double Glazed	1.6	29dB
W-02-23	Type 02	1,000.0×1,500.0	Double Glazed	1.6	29dB
W-02-24	Type 03	1,220.0×1,500.0	Double Glazed	1.6	29dB
W-02-25	Type 03	1,220.0×1,500.0	Double Glazed	1.6	29dB
W-02-26	Type 02	1,000.0×1,500.0	Double Glazed	1.6	29dB
W-02-27	Type 06	1,079.7×1,500.0	Double Glazed	1.6	29dB
W-02-28	Type 04	850.0×1,500.0	Double Glazed	1.6	29dB
W-02-29	Type 06	1,079.7×1,500.0	Double Glazed	1.6	29dB
W-02-30	Type 06	1,079.7×1,500.0	Double Glazed	1.6	29dB
W-02-31	Type 04	850.0×1,500.0	Double Glazed	1.6	29dB
Third Floor					
W-03-01	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-02	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-03	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-04	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-05	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-06	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-07	Existing	600.0×1,968.0	Secondary Glazing; Single Glazed	2.4	46dB
W-03-08	Existing	600.0×1,968.0	Secondary Glazing; Single Glazed	2.4	46dB
W-03-09	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-10	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-11	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB

Window Schedule					
ID	Type	Width x Height (mm)	Glazing	U Value	Acoustic Reduction Rate
W-03-12	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-13	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-14	Existing	540.0×1,799.7	Secondary Glazing; Single Glazed	2.4	46dB
W-03-15	Existing	600.0×1,968.0	Secondary Glazing; Single Glazed	2.4	46dB
W-03-16	Existing	600.0×1,968.0	Secondary Glazing; Single Glazed	2.4	46dB
W-03-17	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB
W-03-18	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB
W-03-19	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB
W-03-20	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB
W-03-21	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB
W-03-22	Type 05	1,080.0×1,915.3	Double Glazed	1.6	29dB

Skylight Schedule							
ID	Type	W x H x T Size (mm)	Frame Finish	Glass Finish	Manufacturer	Reference Code	Note
SK-RF-01	SL-01	1,140.0×1,180.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GGU SD0L140	Full package: electrically operated; 4 x smoke sensor; 4 x break glass point; 4 x wall control; suitable flashings
SK-RF-02	SL-01	1,140.0×1,180.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GGU SD0L140	Full package: electrically operated; 4 x smoke sensor; 4 x break glass point; 4 x wall control; suitable flashings
SK-RF-03	SL-02	860.0×1,200.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GPL MK06 2070	Recessed flashing
SK-RF-04	SL-02	713.4×1,200.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GPL MK06 2070	Recessed flashing
SK-RF-05	SL-02	697.3×1,200.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GPL MK06 2070	Recessed flashing
SK-RF-06	SL-02	692.3×1,200.0×100.0	Wood - Pine Grained Horizontal	Glass - Clear	Velux	GPL MK06 2070	Recessed flashing



Note:

For the purposes of comprehension, all discussions to date have culminated in the following rules of thumb for the proposed window replacement & repair scope of work:

- All windows to the front façade (Queen Victoria Street) are to be retained as part of the Planning Process. These windows will need to be removed, assessed, repaired and replaced where required and reinstated in full.
- All windows to the rear of the building are not subject to planning conditions, however they need to have listed building consent's approval and are to be fully replaced as detailed by this schedule. Roof windows are subject to a separate planning approval and are required to be new. This must be noted. Where window types 01-11 (and skylights SL-01 and SL-02) are shown in the window schedule, these are the new windows.

Please refer to the SelectaGlaze Quote (Feb 2016) detailing the required secondary glazing work being retrofitted to the front windows. This Window Schedule must be read in conjunction with the following drawing sets to complete the window package: 0301-0306 Proposed General Arrangement Plans, 0101-0113 Demolition Plans, Sections and Elevations

Dimensions indicate approximate existing structural openings. Please confirm on site prior to manufacture and ordering.

Please ensure that Glazing meets the requirements for Part K: Protection from falling, collision and impact. (BS 6399 and BS 6180)

The following is a summary, not limited to these points:

- Any glazed area within a window below 800mm from floor level
- Any glazed area within a window that is 300mm or less from a door and up to 1500mm from floor level
- Within any glazed door up to 1500mm from floor level.

Rev	Ch	Details	Date
A			01/09/2017
B			12/06/2018
C			06/11/2018
D - WIP	Ch-65	First Floor Window sizes updated to site dimensions provided	Work in Progress

Scenario Architecture

10a Branch Place
London N1 5PH
p: 0207 686 3445
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Project Name:
Queen Victoria Street

Client:
Pepa Holdings

Site Location:
17-27 Queen Victoria Street, Reading RG1 1SY London UK

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Scale @ A2
1:1

Project No.
054

Drawing Name
Window & Skylight Schedule

Drawing Number
Rev

1003

D - WIP

Window number:	0. New cords, new pulleys, new ironmongery, old paint-stripping (applicable for all windows)	1. Beading	2. Glass replacing	3. Putty repairing	4. Rotten timber repair	5. Damaged Wood filling
W-01-01						
W-01-02						
W-01-03						
W-01-04						
W-01-05						
W-01-06						
W-01-07						
W-01-08						
W-01-09						
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W-03-10						
W-03-11						
W-03-12						
W-03-13						
W-03-14						
W-03-15						
W-03-16						

Windows to be refurbished by timber windows restoration specialist.



SK-RF-01	Roof lights to be replaced from new heritage to new openings. Velux rooflights or equal and approved.
SK-RF-02	
SK-RF-03	
SK-RF-04	
SK-RF-05	
SK-RF-06	

4. Rotten timber to be repaired with Resin Wood Repair Kit

	YES
	NO

Points examples:

1.



2.



3.



4.



5.



Repair Care Dry Flex 4

Elastic repair compound for fast timber repairs and splicing (paintable after 4 hours*).
Ideal for the permanent repair of decayed and damaged wood. Can be sanded and painted on the same day.

Features:

- Quick and easy to apply with excellent modeling qualities and slump resistance.
- Permanent, elastic repairs. The cured product accommodates natural movement in the timber.
 - Short curing time: can be sanded and painted after 4 hours*.
- Once cured, the product can be treated like wood (planed, sawn, nailed, screwed, painted and stained).
 - Can be used all year round.

Suitable for:

- The permanent repair of decayed and rotten wood, including windows, doors, fascias/soffits, stairs and furniture.
- The quick emergency repair of damaged wood.
- The filling of cracks, gaps and construction joints.
- External and internal applications.

* Typical curing time for a repair 1cm thick applied at 20°C. Temperature and humidity may affect curing times.



Reading Queen Victoria Street



Methodology of the repairing existing Windows.

- Carefully remove existing single glazed openable timber casement and fixed light windows and note location;
- Remove existing ironmongery, cords, and pulleys.
- Check beads for damage, replace if broken or rotten.
- Strip off old paint;
- Repair defective/rotten timber using Resin Wood Repair kit;
- Fill up existing holes from the running cables using wood filler.
- Sand and adjust existing frame and sash windows.
- Glass to be reused where possible or replaced where broken to match existing and re-puttied, as Architect's Specification L40/155 & 655;
- Renew draught stripping; take off and fix only replacement ironmongery; as per Architect's Specification L10/341;
- Including silicone sealant pointing externally as L10/810 (Front elevations of existing, first, second and third floors);
- Apply wood treatment.
- Apply undercoat and prepare for painting.
- Prepare and apply window film to existing front windows; Architect's Specification L40/610
- 4 Final coats to be applied after internal works are done. Colour and paint type as per Architect's Specification L40/610.



Reading Queen Victoria Street



Secondary glazing.

Secondary glazing; Architect's Specification L10/581;

Selectaglaze Series 20 vertical sliding, polyester powder coated aluminium;

Toughened safety glass;

Including handles and locks, trickle ventilators and acoustic reveal linings;

Fixed into existing window reveals,

Sizes:

2.6.37	540 x 1800mm overall	12	no
2.6.38	600 x 1968mm overall	4	no
2.6.39	600 x 2087mm overall	16	no
2.6.40	600 x 2306mm overall	16	no
2.6.41	1100 x 2202mm overall	4	no
2.6.42	1100 x 2270mm overall	4	no

Company Manufacturer – Selectglaze LTD

selectaglaze

8/8/2017

Scenario Architecture - Queen Victoria Street - 17-27

Selectaglaze

[illegible]



A slim section vertical sliding unit suitable for treating traditional sash windows. Spring balances fully support the sliding sashes in all positions.



FEATURES

- Recessed finger pull on lower sash allows contra-sliding to assist with cleaning
- 23mm interlock stile with projecting finger pull
- Twin brush seals ensure high sealing efficiency
- Fixings concealed within the frame - trims not required
- Frames may be linked with a colour matched aluminium transom/mullion section

DIMENSIONS

Recommended maximum frame

Format	Height (mm)	Width (mm)
2 PANES	3000	1400

Maximum sash (h)1500mm x (w)1400mm, minimum sash (h)300mm x (w)350mm

Overall dimensions are subject to a maximum sash weight of 20kg

Sash height to width ratio should not normally exceed 1:3

A minimum frame to frame gap of 75mm is recommended for access to the outer window



FRAME COLOUR

Stock finish is white HIPCA 9910 semi-gloss

Any standard powder paint, wood grain finish or anodised finish to order

OPTIONS

Glazing	4mm to 6.8mm
Frames	Heavy duty box interlock stile Curved heads - minimum radius 450mm
Ironmongery (see page 44/45)	H3 Recessed finger pull to upper sash H17 Cranked 'D' handle to upper sash L2 Lockable fitch catch L4 Plunge lock L13 Sliding latch

Thermal performance

An independent, correctly installed and sealed secondary window frame will minimise air leakage; it also ‘traps’ an insulating layer of air that can reduce heat loss by up to 50% using standard glass and 65% with low-E glass.

Furthermore, sealed unit glazing, available with selected systems, creates triple glazing and even higher levels of insulation. The result is a more comfortable living or working environment with reduced energy demand.

Why improve?

The 2008 Climate Change Act committed the UK to reduce greenhouse gas emissions by 80% against 1990 levels by 2050. Since buildings account for 40% of emissions and 80% of existing stock will still be standing in 2050, retrofit solutions will be essential if the targets are to be met.

Building Regulations Approved Document L: Parts L1B and L2B cover the energy efficiency in buildings undergoing renovation or upgrade. Controlled fittings such as windows must meet strict performance standards, but the regulations acknowledge the sensitivity of working on Listed buildings. Hence, single-glazed windows that are part of the historic fabric of the building can be retained and secondary windows incorporating low-emissivity glass fitted, subject to Listed Building Consent.

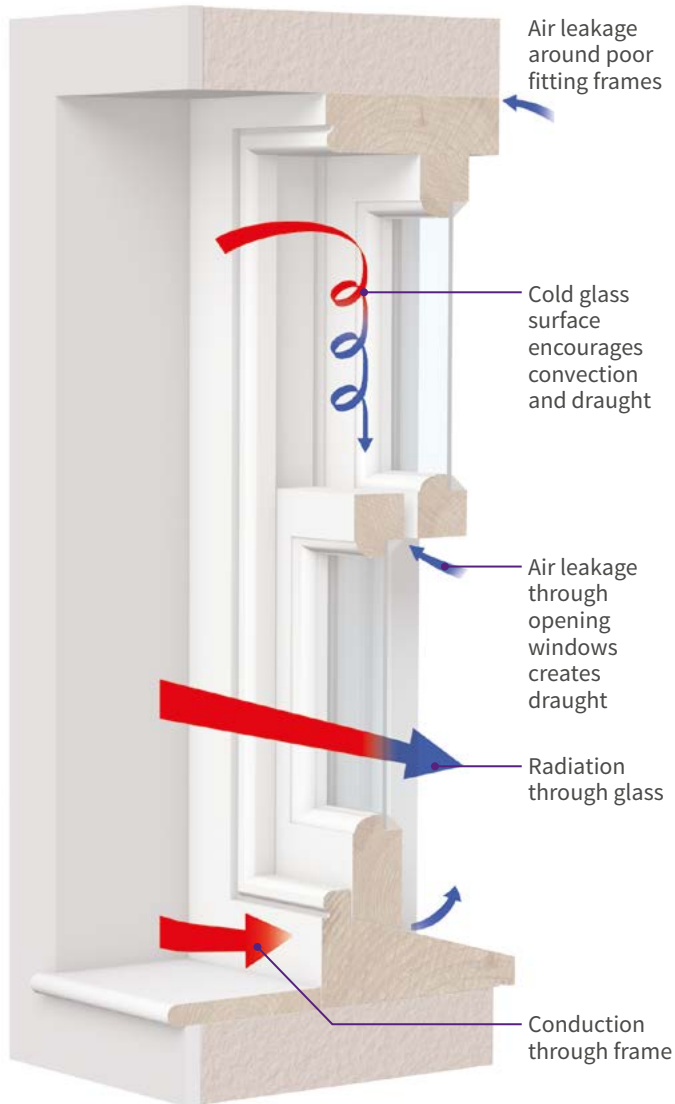
Energy Performance Certificates (EPC) are required when a building is constructed, sold or rented to identify its energy performance rating. Low rated buildings may prove more difficult to sell or lease and after April 2018 it will be unlawful to let those with the lowest ratings, F or G. Retrofitted secondary glazing can be an important factor in maintaining the building's use.

BREEAM is the UK's leading assessment method for sustainability in buildings and addresses many issues including energy, health and wellbeing. Secondary glazing can effectively contribute towards a higher rating.

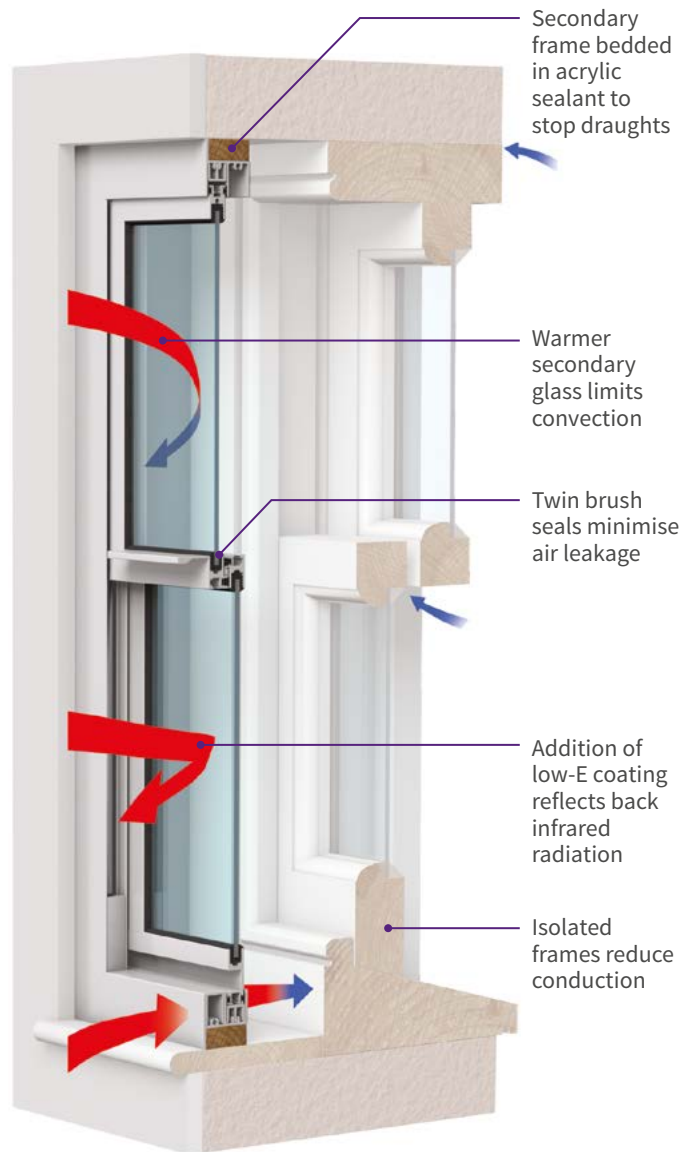


How secondary glazing improves thermal performance

Original window...



...with secondary glazing

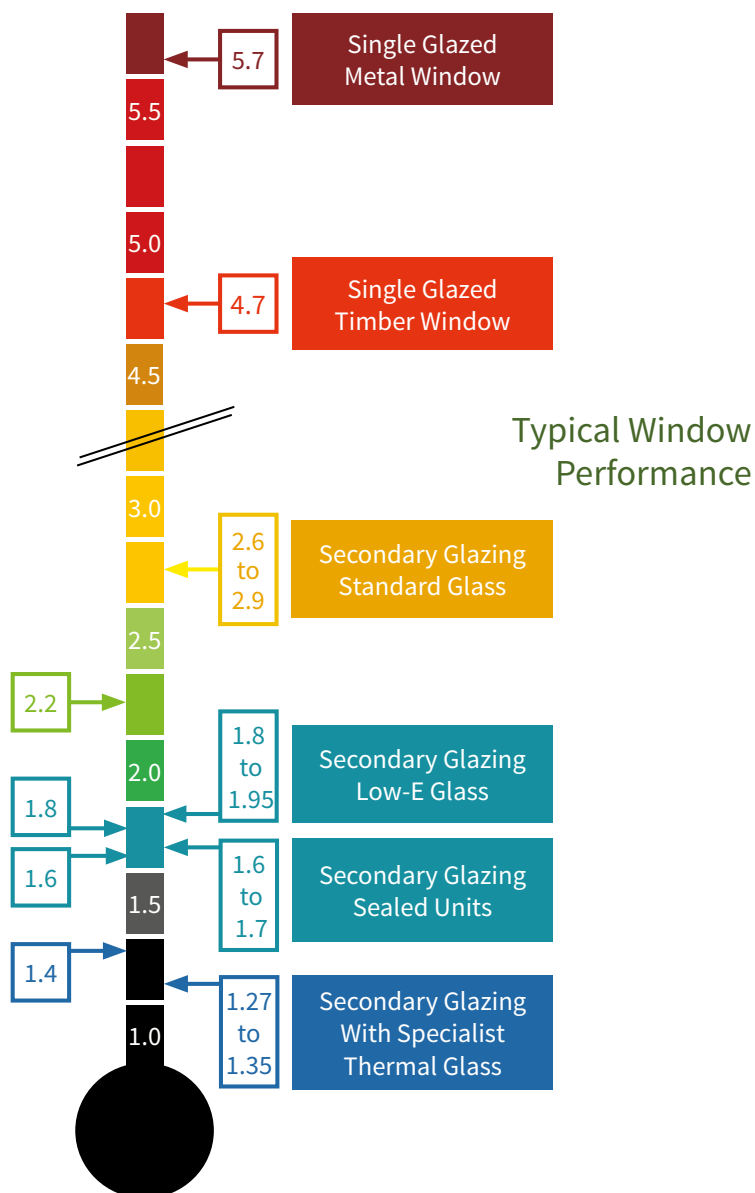


The secondary window traps an insulating mass of air between the inner and outer glass and the resulting warmer surface of the inner glass limits convection currents. Isolated frames are also less conductive and draughts are significantly reduced by efficient seals applied both to the frame and opening panels. If a low-E coating is applied to the inner glass, it will reflect back infrared radiation and so retain energy in the room.

Zero in on U-values

Building Regulations:
Approved Document L
Requirements

L2A	Non-dwellings – new
L2B	Non-dwellings – existing
L1B	Dwellings – existing
L1A	Dwellings – new



Notes

U-value is a measure of heat loss expressed in W/m^2K and shows the rate of heat loss per m^2 of material when the temperature difference between inside and outside is one degree. The lower the rating the better the insulation. As secondary glazing is used in combination with primary windows, U-values are normally calculated using modelling software.

Low-E glass has a hard metallic coating on the surface facing the cavity, which significantly helps with heat containment. There is a small reduction in light transmittance and a slight roughness on the coated surface, which can lead to light scatter and may be visible as a haze when the sun is strong and low. This is not a defect in the glass. The coated surface should be cleaned occasionally with a lint free cloth and clean soapy water. Abrasive materials must not be used.

Solar gain is the warming effect of the sun which can be a benefit in the winter but a problem in the summer months. The g-value measures the amount of solar energy transmitted through a material with 0 representing no transmittance and 1 the maximum. A standard glass achieves 0.8 but when lower levels are needed, for example on a south facing façade, a specialist window film can be applied to the primary window.

Testing and certification

The thermal performance of the product range has been assessed against both timber and metal primary windows by the Centre for Windows and Cladding Technology (CWCT).

Please visit our website for performance figures. Summary tables are on page 49.

Case study: John Street, London

An historic Listed Georgian townhouse in London's Bloomsbury has been transformed into a comfortable, peaceful and energy efficient home that approaches Passivhaus EnerPHit standards.

This was achieved using modern insulation techniques including an advanced secondary glazing system from Selectaglaze that markedly improved the performance of the traditional, single glazed sash windows.

The client wished for a home that used as little energy as possible and offered the most comfortable environment. Prewett Bizley architects took on the challenge of convincing conservation officers that a Grade II Listed building could be successfully fitted with a host of energy saving measures whilst respecting all the historic features.

The large single glazed sash windows were a challenge as they represented a significant proportion of wall area and could not be replaced. The answer was secondary glazing; but the extremely high levels of insulation required, the aesthetics and the need for working shutters in some rooms demanded a bespoke solution.

Selectaglaze originally proposed a totally new design but coincidentally was both developing a new sash window design and trialling Pilkington's Spacia thin vacuum units which have a centre pane U-value of 1.0. The resulting Series 25 window proved perfect

for the project as it offered high sealing efficiency, a very low U-value and a discreet frame with a specially developed slide catch that allowed shutters to fully close. The house now has airtightness close to 1 air change/hour at test pressure which demonstrates that the secondary glazing is performing very well.

The complexity of the project and the time needed to obtain consents meant that part of the building had to be occupied before the secondary glazing was fitted. As a result, the owner experienced the change in comfort levels offered by the original window and with the secondary glazing in place. The difference was remarkable and what was also evident was the almost complete removal of road noise. This had not originally been regarded as a significant problem but the absence of noise certainly added to the comfort.



Acoustic performance

A well-sealed secondary window, with a cavity of at least 100mm can provide noise reduction in excess of 45dB. Combined with double glazed windows, up to 56dB is achievable. The result is a more peaceful living or working environment.

Why improve?

Most traditional single glazed windows with poorly sealed frames offer little defence against unwelcome noise and even modern double glazed windows fare little better against high sound levels.

Noise is unwanted sound and a form of pollution that can be detrimental to health.

A significant reduction in noise level will:

- create a quieter less stressful environment
- reduce sleep disturbance
- help improve concentration and productivity
- protect hearing

World Health Organisation 'Guidelines for Community Noise' and **BS 8233** set out guidelines for acceptable sound levels in a range of environments. An acceptable sound pressure level (SPL) is 30 to 35dBA for a bedroom, 35 to 50dBA for a classroom or meeting room and 45 to 50dBA for a typical open office. Traffic noise close to the façade of a building on fairly busy roads will be 70 to 80dBA and hence sound reductions in the range 30 to 50dBA are required.

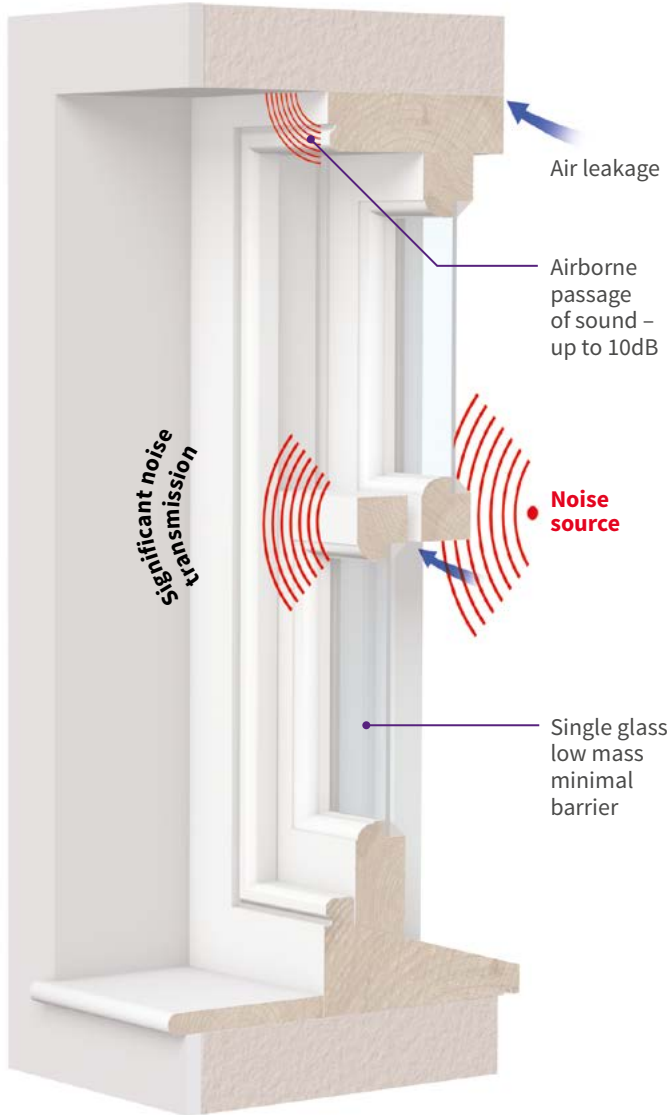
National Planning Policy Framework: 2012 assesses the impact of noise in new developments. Brownfield sites will often be located in areas with very challenging noise levels and window designs involving an additional secondary window to produce acoustic triple glazing can be pivotal in meeting acoustic requirements.

Building Bulletin 93, Acoustic Design of Schools Feb 2015 sets out minimum standards for ambient noise levels in school rooms.

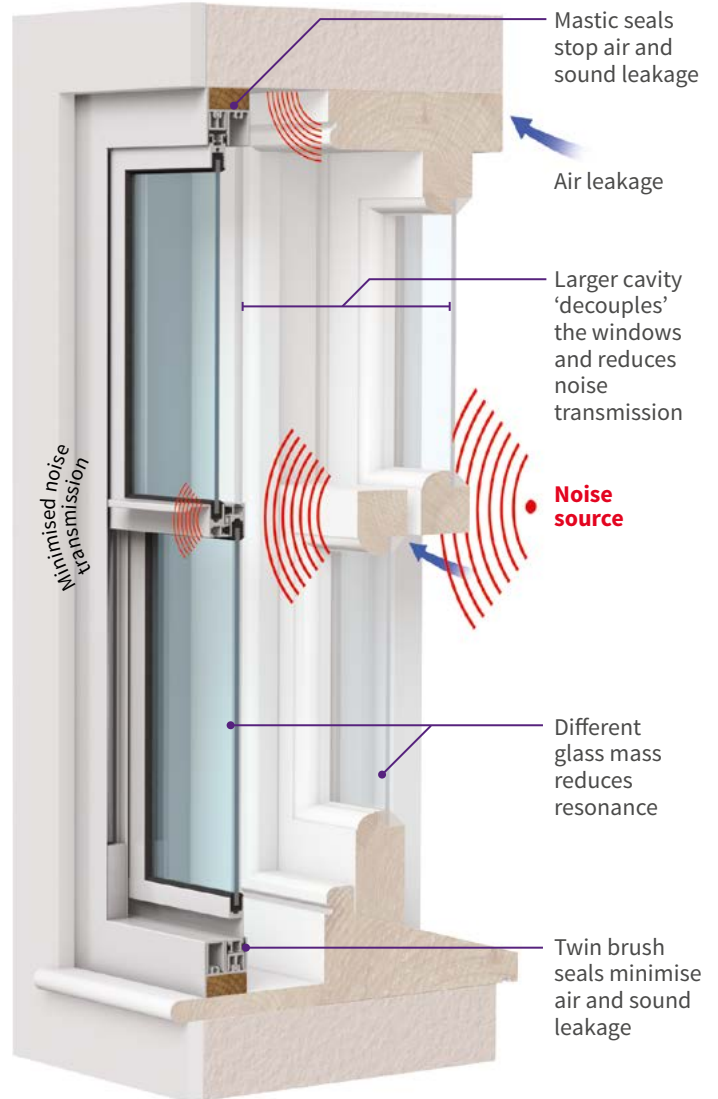


How secondary glazing improves acoustic performance

Original window...



...with secondary glazing

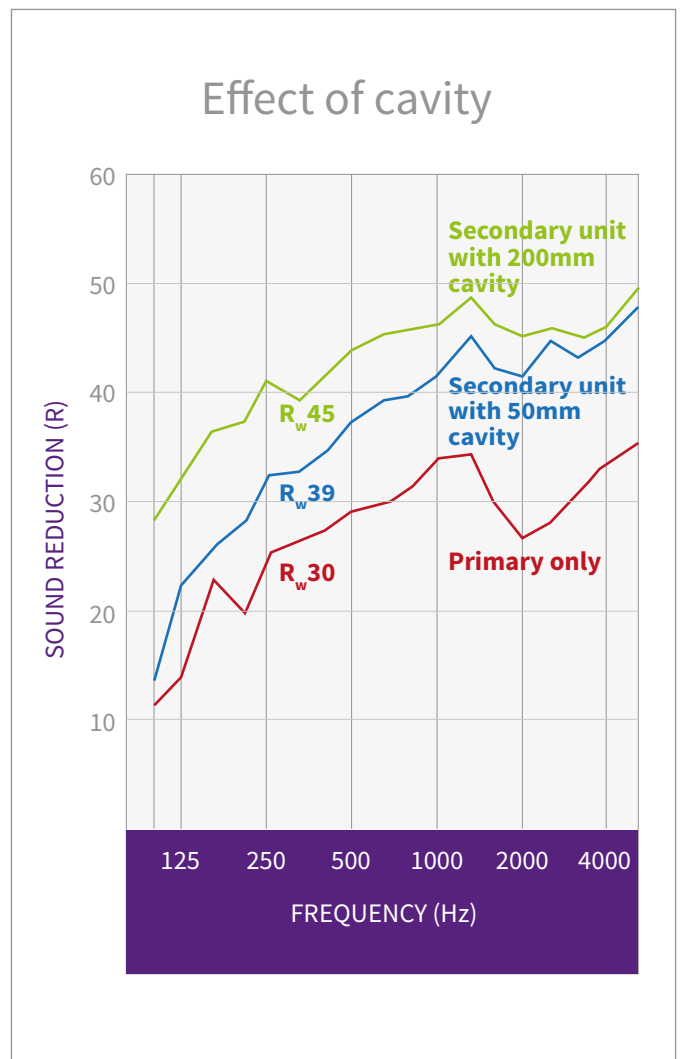
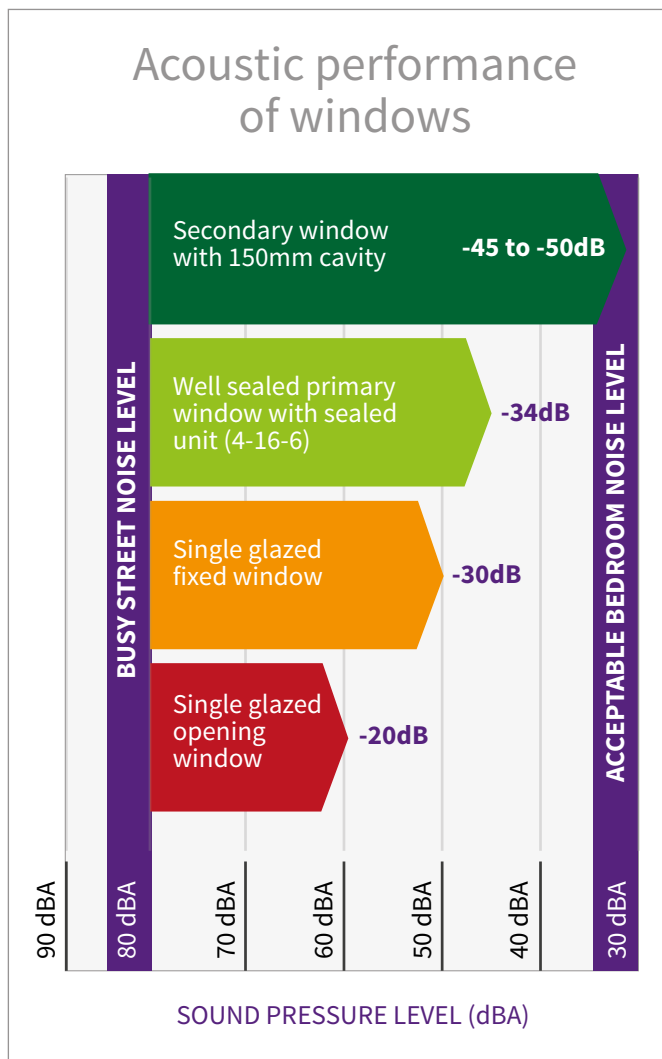


Sound is transmitted through a window by direct vibration of the glass. The larger air space created by secondary glazing decouples the movement of the inner and outer glass, which means they act as separate barriers, thereby reducing resonance.

By contrast, a typical sealed glass unit, where the two panes of glass are rigidly connected and have a minimal cavity, performs little better than a single pane.

Airborne sound is also a major problem with ill-fitting windows – a 1% gap in the total window area can reduce sound insulation by as much as 10dB. A purpose-made secondary window seals the whole of the external window with frames bedded on an acrylic sealant and opening panels fitted with high performance seals.

Optimising performance



Notes

Sound is measured as a pressure and expressed in dB (decibels) which is a logarithmic scale. 0dB represents the threshold of hearing and 120 dB the onset of pain. To the human ear a change of 3dB is just about noticeable whereas an increase of 10dB approximates to a doubling of loudness.

Cavity is the space between the existing primary windows and the secondary glazing. Performance improves as the cavity increases with an optimum of about 200mm.

Glass type and thickness have a direct impact on performance. Thicker glass has greater mass, so will provide better acoustic results. Ideally the secondary glass should be of different thickness to the primary window glass to avoid sympathetic resonance which will increase noise transmission. Acoustic laminate glass helps improve performance at higher frequencies.

Reveal linings are acoustic absorbent lining materials which can be fitted to the reveals, normally at the head and jambs. These raise insulation levels by 1 to 2dB and are used when external sound levels are very high.

Testing and certification

The product range has been tested against single glazed primary windows with 50mm, 100mm, 150mm and 200mm cavities. Testing was carried out by Taylor Woodrow Technology in accordance with Standard BS EN ISO 140-3: 1995 'Laboratory measurement of air-borne sound insulation of building elements'. Results were reviewed and interpolated by Hann Tucker Associates.

Please visit our website for performance figures. Summary tables are on page 50.

Case study: Ham Yard Hotel, London

Located in one of the most vibrant and bustling districts in Central London, lies the stunning Ham Yard Hotel.

Built on a plot that has been vacant for a number of years, the site has a creative past. During the 1920s Ham Yard was home to the Hambone Club for writers and musicians. During the 1940s it became a regular paid jazz club for London musicians called Club Eleven. During WWII the site saw serious damage through bombings and the area was never redeveloped.

Many plans were put forward over the years to develop the site, but all were rejected until, finally permission was granted for Firmdale Hotels to redevelop the area. They created 91 individually designed hotel bedrooms and 24 apartments, along with a 1950's style bowling alley, theatre and restaurant. However, building a hotel in the centre of an area with such vibrant night life does come with its drawbacks.

Although new double glazed windows were installed throughout, the hotel still suffered from high external noise levels. Firmdale Hotels approached Selectaglaze to help deliver a solution with their bespoke secondary glazing systems.

Three different unit styles were used, one of which was the Series 80 horizontal slider, typically used for larger windows as it can hold up to 12mm thick glass. Acoustic laminated glass was used, which absorbed sound from outside, to



assist in creating a more peaceful and relaxing environment – as well as a good night's sleep.

A total of 37 openings were treated with the secondary glazing being finished in a dark grey colour to match the existing primary windows, making them as inconspicuous as possible.

As testament to the detailed planning throughout the design and build phases, the hotel also gained a BREEAM 'Excellent' rating.



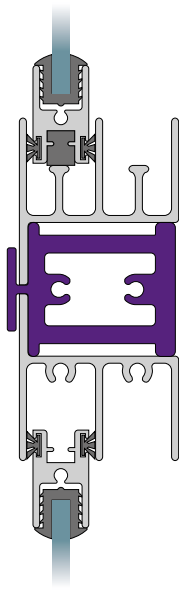
Coupling details

A range of versatile sections allows Series to be coupled together, either as a Transom (illustrated) when windows are stacked vertically or as a Mullion when they are coupled horizontally.

The 'H' feature on the face of the section holds the frame flange firmly in place ensuring a good seal and also acts to mask the effect of any shims needed during fixing.

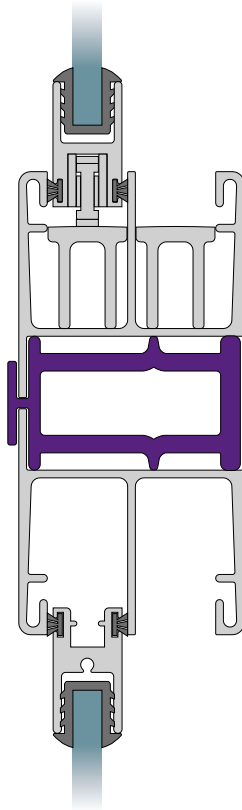
SLIMLINE

(Series 10 shown)



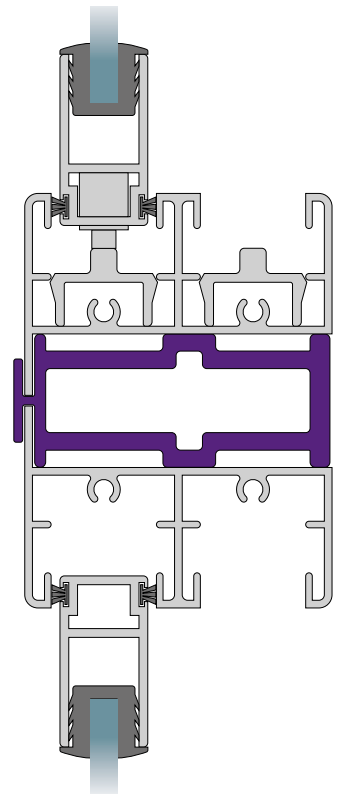
MID-RANGE

(Series 15 shown)



HEAVY DUTY

(Series 80 shown)



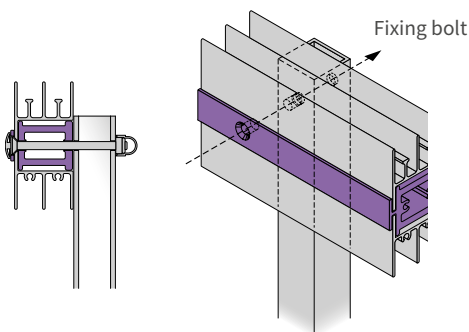
TRANSOM SUPPORT

Guidance

- Transom spans above 1.4m may require separate support
- Factors will include the upper window
 - style
 - size
 - glazing

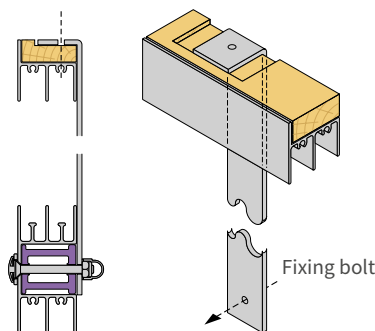
Standard method

- 25mm box section set behind interlock stile and bolted to transom.



Alternative method

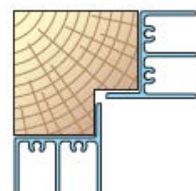
- 25mm flat bar hanger bolted to transom. This method is weight dependent.



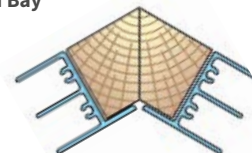
SHAPED COUPLING

- Patterned timber sections finished to complement frames
- Suitable for:
 - bay windows

Square Bay



Angled Bay



Fixing details

Selectaglaze secondary windows are designed to present a clean appearance on the room side. All units are purpose made to suit a particular window opening and so ensure the highest performance. The odd leg frame system allows tolerances to be accommodated without applying face cover fillets.

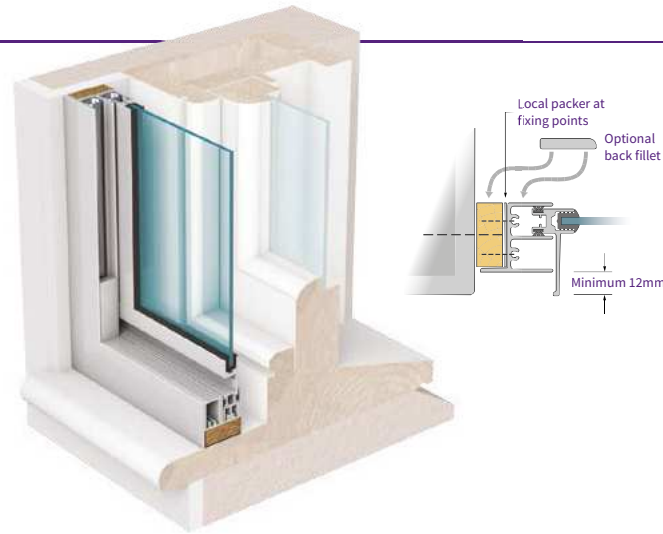
In almost all circumstances fixings are concealed within the framework. When larger section timber frames or cill extensions are required these are finish decorated on exposed room side surfaces. Typical fixing details are illustrated.

STANDARD SQUARE REVEAL FIX

- 33mm x 15mm twice primed softwood ground bedded on acrylic mastic and fixed to structure
- Odd leg frame with applied mastic lips ground and is fixed to it
- Local concealed packers take up opening tolerance
- Optional caulking point between frame and wall allows finished decoration

Guidance

- Set back minimum 12mm from wall face to avoid blowing plasterwork
- Any hinge fixings must penetrate into structure
- Enlarged timber grounds required when:
 - dealing with very irregular openings
 - providing access to remote blind controls
- Optional back fillet available to conceal packing

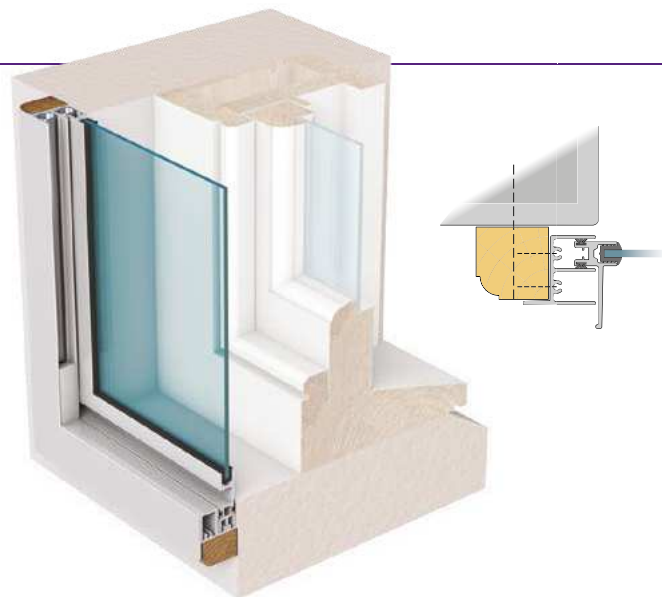


REVEAL FACE FIX

- Softwood frame with minimum 38mm x 32mm section bedded on acrylic mastic and fixed back to structure
- Optional ovolo moulding
- Aluminium frame fixing continues as S1

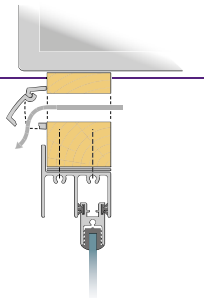
Guidance

- Suitable detail where:
 - no reveal exists
 - clearance is needed for inward opening windows
- Remote blind controls and ventilators cannot normally be accommodated



VENTILATORS

- Accommodated through enlarged timber section generally at head of window

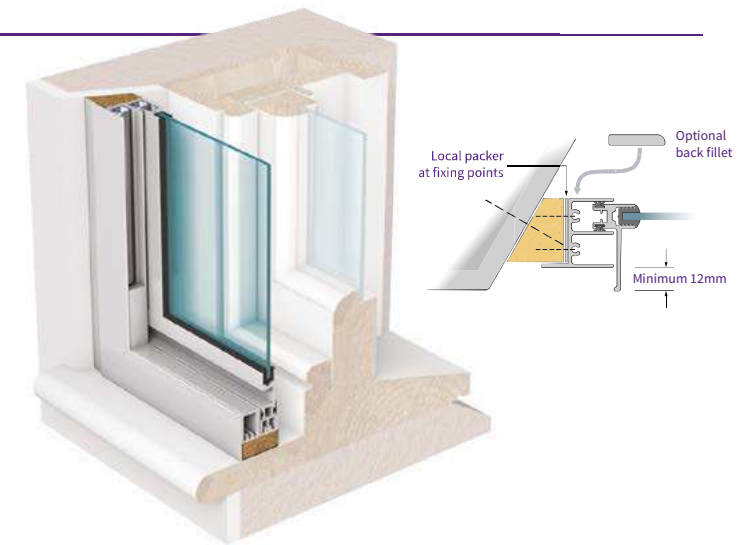


SPLAYED REVEAL FIX

- Shaped softwood ground is machined to match the splay
- Aluminium frame fixing continues as S1

Guidance

- When attaching to shutters, ensure that these are securely fixed back and sealed
- Timber section can be sized to accommodate remote blind controls
- 12mm minimum setback as S1

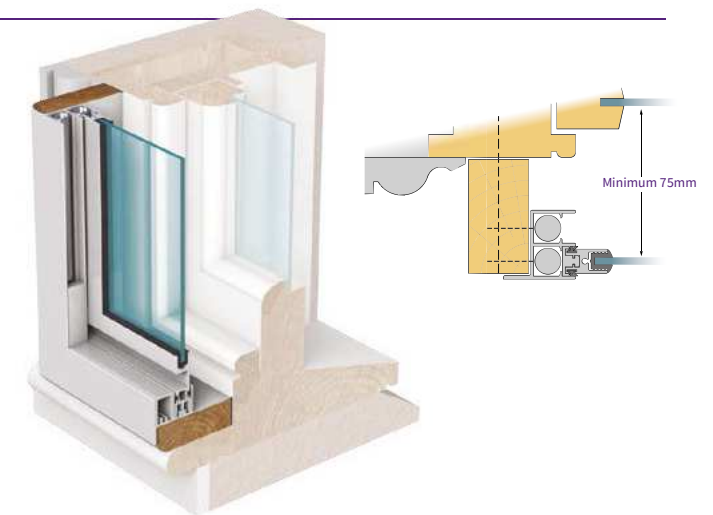


FLUSH BOX SASH FIX

- Timber sized to provide a minimum 75mm glass to glass cavity and fixed back to box sash
- Optional ovolo moulding
- Aluminium frame fixing continues as S1

Guidance

- Minimum 75mm cavity applies to use of matching sash window, normally Series 20
- Existing architraves will sometimes need to be resited both for practical and visual reasons





Reading Queen Victoria Street



Roof Lights

Removal and alteration methodology:

- Remove existing Velux rooflights to rear slopes of main roof, as shown on Architect's drawing 0106;
- Clear away, make good;
- Following removal of existing roof coverings, adapt existing rooflight openings to suit new rooflight sizes, as indicated on Architect's drawing 0706, with grade C24 200 x 50mm softwood trimmer joists;

Roof lights type:

Roof lights set into existing pitched roof Architect's drawings 1003 & 1104 and Specification reference L10/480 & 491. The Rooflight Company, Velux Rooflights or equal and approved. Grained pine horizontal type electrically operated. Velux insulation frame, transverse drainage gutter, flashing kit, linings, vapour barrier, and EDN front edge, as shown on Architect's drawing 1104, or similar, including all associated accessories. Code 5 lead apron flashings with patination oil finish manually operated plain blinds.

Rooflight (ventilator) type SL-01 as L10/491, Reference GGU SD0L 140; 1140 x 1180mm overall. Full package including electrical operation and interface with 4 x smoke sensors, 4 x break glass points and 4 x wall control.

Rooflights type SL-02 as L10/480, Reference GPL MK06 2070, recessed flashing.

Existing roof lights to be replaced with VELUX conservation roof windows:

For traditional buildings



When planning dictates that a window of traditional external appearance is required, conservation roof windows should be considered. All of our conservation roof windows have the same technical features of a VELUX roof window but in a traditional black conservation style.

- Available in either centre-pivot or top-hung.
- Black external profiles and glazing bar. In RAL colour 9005.
- Recessed installation for slate and tiled roofs.
- Top-hung roof windows listed below are suitable for emergency escape.
- Other sizes and glazing options available – contact us for further information.



What does a conservation package include?

- Roof window with pre-fitted glazing bar with laminated glazing as standard for safety.
- Recessed flashings available for a more streamlined external appearance.
- Insulation collar and underfelt collar provided for a weathertight and energy efficient installation.

Optional glazing bars for standard VELUX roof windows



Depending on where you live, conservation officers will have different requirements. The black finish featured in our conservation roof window packages may not be required in your area.

By adding a glazing bar to a standard VELUX roof window with a grey exterior, you can create a traditional appearance, allowing you to take advantage of all roof window styles and sizes available (except triple glazed roof windows).

Grey glazing bars are also available for standard VELUX roof windows

Recessed flashing



In addition to a glazing bar, you may be asked to install your roof window deeper into the roof than can be achieved with standard installation. To do this you should select a recessed flashing kit, streamlining the roof window so less protrudes above the roofline.

Recessed flashings are also available with insulation and underfelt collars and are recommended for optimum energy efficiency. Our full range of recessed flashings are available as part of our conservation roof window packages.

To create your grey conservation package

- 1 Select your preferred VELUX roof window. This includes white painted, white polyurethane, pine and all operating methods. **P18-25**
- 2 Choose a flashing kit right for your roof pitch and roofing material – we recommend a recessed flashing kit. **P58-59**
- 3 Use VELUX installation products for optimum energy efficiency. **P56-57**
- 4 Add one or more conservation glazing bars of the right size to your roof windows. Remember, to match grey exteriors you should consider adding a grey glazing bar (nearest RAL 7043).

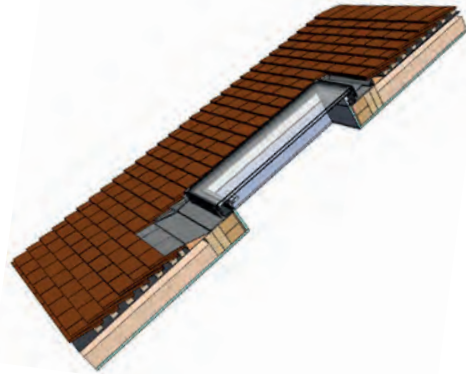
												
	55 x 78	55 x 98	78 x 98	134 x 98	55 x 118	66 x 118	78 x 118	114 x 118	78 x 140	94 x 140	134 x 140	94 x 160
Optional glazing bars for standard windows	CK02	CK04	MK04	UK04	CK06	FK06	MK06	SK06	MK08	PK08	UK08	PK10
▶ 2 glazing bars recommended for UK04, SK06 & UK08	ZGA WK02 0024	ZGA WK04 0024			ZGA WK06 0024				ZGA WK08 0024			ZGA WK10 0024

- ▶ Glazing bars are not available for –66 and –62 triple glazing variants.
- ▶ Prices above are for 1 glazing bar only.
- ▶ All glazing bars have a delivery time of 2 days.
- ▶ Delivery time is in working days from receipt of orders placed before 4pm (UK) and 11.30am (NI).

How to Specify the Conservation Rooflight®

Our standard '**On the Rafter**' installation usually results in a Rooflight that sits flush to the roofline.

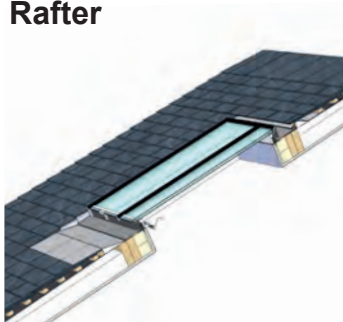
**On the Rafter
Clay Tile**



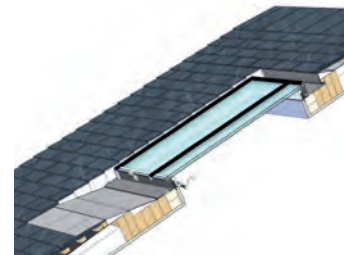
However for some shallow roof build-ups an '**On the Rafter**' installation may result in a Rooflight that sits slightly proud if the roofline as illustrated (below left).

Some installers prefer to adjust their installation detail to ensure that the casement sits flush to the rooflines as they find this more aesthetically pleasing. To achieve this we offer an additional installation detail – what we term '**Between the Rafter**' installation (below right). Here a larger structural aperture size is formed, to allow bearers to be fixed to the rafters at a lower position, and adjusted to the height of the Rooflight according to the roof build-up.

**On the Rafter
Slate**



**Between the Rafter
Slate**





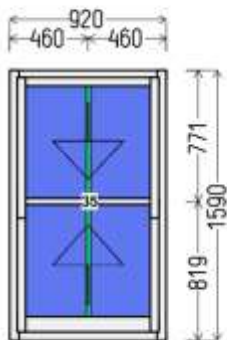
Reading Queen Victoria Street



Windows to the rear elevation.

Windows to be carefully taken out from the existing openings; as shown on Architect's drawings 0103 - 010; Clear away, make good and prepare openings to receive new.

Type of windows to the rear elevation:



View from the outside

1. Type: Sliding Sash 50 Balance Springs, 80mm horns R-1 op top sash
2. Wood: Finger jointed pine
3. Finish: White paint "Teknos" RAL9016
4. Glass: 4 gr -12- 4 GNP gr (Low-E double glazing with both toughened panes, $U_g=1.1$) (warm edge TGI white RAL 9016)
5. Fittings: Spring balances, Sash Lift Satin chrome (2 pcs), Fitch Fastener Locking Satin Chrome (1 pcs), Vent Lock Satin Chrome (2 pcs)
6. Decorative transoms: 25mm Ovolo wooden bars glued on glass with duplex
7. Top extension +50mm. All window height- 1640mm..
8. Weight 47 kg.
9. $U_w \leq 1.57$.

920x1590mm 1.46m²



03 West Elevation
Scale: 1:50

Note:
Please refer to the Oxley Conservation Condition Survey Report Jun 2017 for all items requiring remediation, repair and refitting.

Sash Spring Window_190724-02Sig_W-1

