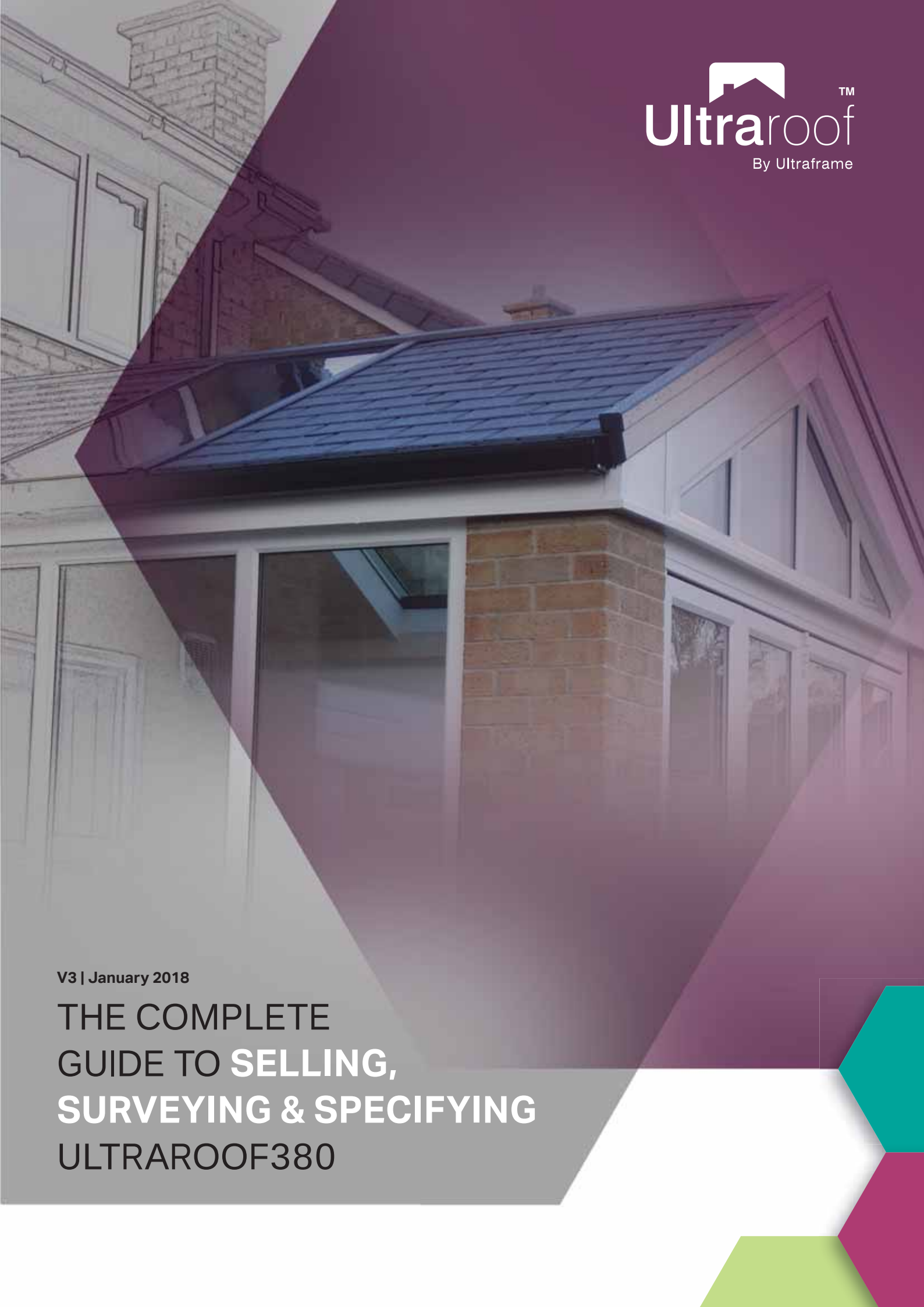


Ultraroof™
By Ultraframe

V3 | January 2018

THE COMPLETE GUIDE TO **SELLING, SURVEYING & SPECIFYING** ULTRAROOF380

DEAR TRADE PARTNER OR CONSERVATORY BUYER,

The Ultraroof380 is pre-manufactured by Ultraframe to ensure consistent quality and a speedy installation with less waste.

BRIGHTEST

Fully integrated glazing solution

- Full height glazing for **maximum natural light** where needed
- **Competitively priced** glazing vs other brands
- Compatible with any specification of glass

LIGHTEST

The lightest tiled roof on the market

- Weighs only 38kg/m² **lighter than any other solid tiled roof**
- Designed by **conservatory specialists,** Ultraframe to replace existing conservatory roofs
- Lightweight panels are cut to size and **easy to manoeuvre**

WARMEST

Unrivalled thermal performance

- U-Value **as low as 0.16**
- Option to reduce to 0.13 if required
- **Complete warm roof system**, with no cold bridging
- **Fully insulated** 380mm structural beam

FIRE TESTED

Independently and fully fire tested

- The complete, assembled Ultraroof structure was **fire tested in 2017** by Warringtonfire
- Ultraroof is **fire rated as B-roof** according to EN 13501-5: 2016
- Ultraroof is **fire rated as AC** according to BS476-3:2004

FASTEST

Faster to fit than any other solid roof

- Supplied in panels of 12 tiles, pre-cut to size. **No cutting required on site**
- Integrated **full height glass panels** for faster glazing
- Key components labelled in sequence for an **easy fit**
- **3 simple structural components**: beam, SIPs, ridge

STRONGEST

No tie bar ever

- Superior strength for larger designs
- 4M spans for **bi-folds without extra support**
- NASA satalite data used to **precision engineer every roof** for Wind AND snow loads

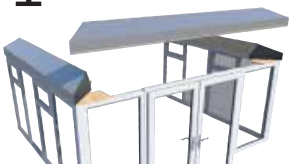
CONTENTS

ULTRAROOF380 OVERVIEW

Product definition

Ultraroof380 is a solid roof, perfect for the speedy replacement of tired conservatory roofs. It is a packaged solution, off site manufactured for rapid assembly and compliant with relevant Building Regulations. Ultraroof380 is classed as a 'warm roof' and gives a vaulted/loft type ceiling. There are three major elements to Ultraroof380;

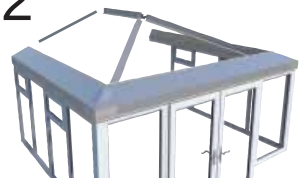
#1



INSULATED BEAMS

A patented box eaves beam, filled with mineral wool cavity insulation - that forms the soffit structure - approx 380mm front to back depth.

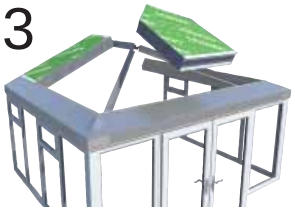
#2



ALUMINIUM FRAMEWORK

A hidden structural aluminium framework for hips, ridge and starter bars.

#3



STRUCTURAL ROOF PANELS

Mechanically fixed Kingspan Unidek Aero Structural Insulated Roof Panels are attached to the box eaves and structural framework.

The roof comes with the counter battens already fixed. Tongue and grooved 12mm OSB is then fixed before a high performance water proofing breathable membrane layer is laid. Ultratile engineered copolymer interlocking tiles sheet (12 slates per sheet) are then laid across the roof slope.

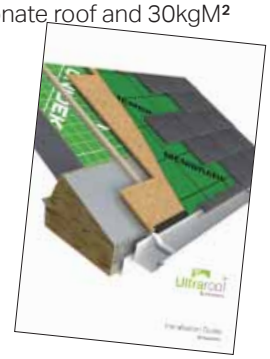
Overall dimensions : 135.3 cm x 57.15 cm x 1.9 cm
8 panels per box : approximately 4,65 m² / 0,58 m² per panel

Key performance criteria/simplified rules

- The product can be designed with window frames to all elevations - no support posts.
- If bi-folding doors are to be used they MUST be bottom supported NOT top hung.
- The standard soffit projects approx 40mm beyond the external face of the window frame - box eaves beam is approx 380mm front to back depth.
- Pitch range - minimum is 12.5° on lean to and 15° on duo pitch and hipped lean-to's - maximum pitch is 40°.
- Maximum 3° pitch variation (front to side) - on 3/5 bay Victorians facet sizes must be equal size / angle.
- System 'U' values - with the 190mm Unidek Aero panels is 0.16W/m2°C (0.13W/m2°C when 25mm internal insulation board added).
- Rectangular glass panels can be integrated to maintain light into any adjacent room. Alternatively, add one of 4 Velux roof windows/sizes.
- Everything is pre-fabricated in our highly efficient factory to ensure rapid one day fit on site.
- On a 4m x 4m Georgian, the system weight is 38kg/M² including plasterboard (12kg/m2 polycarbonate roof and 30kgM²

U-Design

U-Design is a piece of design and configuration software that exclusively specifies Ultraroof380. As well as visualising and pricing, upon entry of the customer's postcode it checks the wind and snow loads at the exact location to ensure Ultraroof380 complies with Building Regulations.



IT IS STRONGLY RECOMMENDED THAT THE ULTRAROOF380 INSTALLATION GUIDE IS READ AT THE SAME TIME AS THIS DOCUMENT.

HANDY CHECKLIST FOR:
SELLING AND DESIGNING THE PERFECT ULTRAROOF380

- [ ] 1. Choose the preferred roof shape (Georgian, Lean To, Victorian, Gable or P-shape). Although the shape of most Victotrian Conservatories can be replicated like for like, if the facets are uneven the Tudor Roof must be used. See pages 11 and 82.

- [ ] 2. Ask the customer precisely where they would prefer the glass in the roof. UltraRoofs full height rectangular glass panels are the most cost effective way to add glass, but are only available when adjacent to the ridge. Velux also can be used and located in most places on the roof. Refer to pages 8, 31 - 44.

- [ ] 3. Some box gutters may need internal beam support (See pages 36-37). If the customer wishes to change the box gutter type to avoid internal support this may restrict the placement of the glass. On some roofs there may be a trade off between internal support and glass placement. Read pages 49 - 58 and discuss this with the customer.

- [ ] 4. When a box beam is next to a host wall and a tapered gutter is used, the box beam will always be supported by a 90° angled wall bracket (see page 51). All 265 box gutters require supporting under the beam. Roof glazing choice must be considered when choosing box gutter type. See pages 36 - 37 and 49 - 58.

- [ ] 5. The box beam has a maximum length of 7m but beams can be jointed. Where the joints are located, supports are required see pages 6 and 75 - 80.

- [ ] 6. The beam cannot run unsupported over 4M. Avoid building bi-fold doors over 4M spans into the design to avoid the need for extra structural support. See pages 49 - 58.

- [ ] 7. Building Regulation compliance is required for SOLID roof conversions and new build extensions. See page 20.

- [ ] 8. Use the guide to explain how the soffit will look to the customer. See pages 28 and 64.
Soffits over the window frames are available in 40mm and 151.5mm. Refer to page 65 and 66 to identify the right soffit on masonry. Please note, the 151.5mm soffit is the only option compatible with Loggia Super Insulated Columns.

- [ ] 10. Obtain the POSTCODE so that wind and snow loads can be checked. If you suspect these loads may be high refer to pages 45 - 48 to understand maximum potential roof sizes available.

- [ ] 11. There are many choices of finish to the Ultraroof380, much more than tiles. Ensure you have decisions from the homeowner on everything in the design. See pages 12 - 17.

- [ ] 12. Agree the roof pitch with the customer. Every roof must be pitched in full degrees (e.g. not 25.5°), duo pitches range from 15°- 40° and Lean To's start at 13° - 40°. The only exception to this rule is the lowest Lean To possible which is 12.5°

- [ ] 13. Design the lighting layout with the customer. LED spotlights can be placed within the internal pelmet or added using a board at the ridge. Pendant lights can look particularly striking from the ridge of the new roof.
See page 16 for lighting positions on the box beam.

- [ ] 14. Curved Cornice - perfect for a more traditional build. The curved Cornice provides the ideal finishing touch to the roofline that both hides gutter and creates a beautiful silouette. See page 17.

Always consult Ultraframe if there is something you are uncertain about, please call Ultraframe's technical helpline on 01200 452 918 or email techsupport@ultraframe.co.uk

4 STAGE SALES AND DESIGN PROCESS

STEP 1 - LAYOUT - THINGS TO CONSIDER

Any rectangular floor plan can be built, standard 3 & 5 bay victorians, and now P-shapes or T-shapes can be replaced. Stretch Victorian replacement roofs can be accommodated (see page 11).

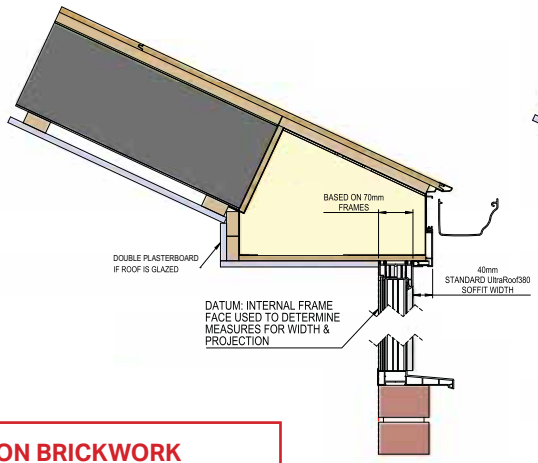
The maximum length of Ultraroof380 beams are 7m but two can be joined together, however you will need a post or column where the beams join. Ensure the joint positioning is aligned with door or window frames Refer to page 75-76 for detailed information.

BOX BEAM JOIN

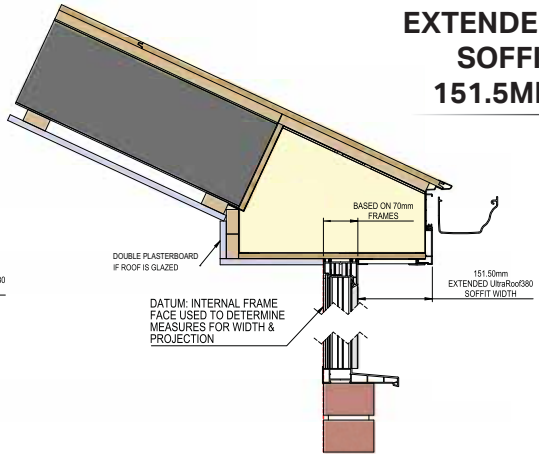
BOX BEAM JOIN

Ultraroof380 has 2 soffit depths 40mm and 151.5mm, see soffits shown on frames below (enlarged on p64). Discuss with the homeowner re depth of soffit required on brick work and frames. See page 65 and 66.

STANDARD SOFFIT 40MM

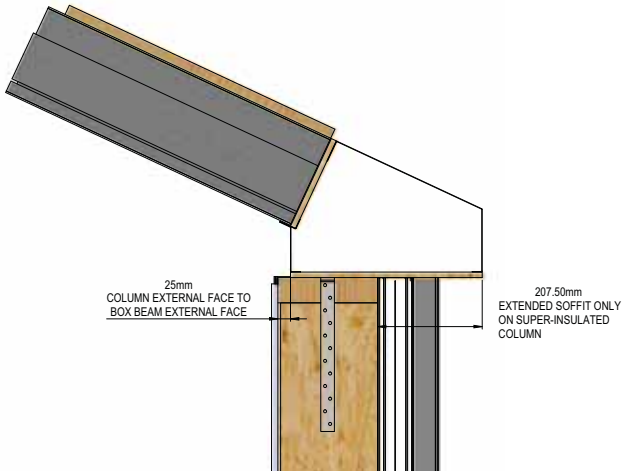


EXTENDED SOFFIT 151.5MM



IF BOX BEAM SAT ON BRICKWORK SEE PAGES 65 AND 66.

Super-insulated columns can easily be integrated with Ultraroof380. An extended soffit must be used with Super-insulated columns. See page 81.



STEP 1 - LAYOUT PLAN

Show positioning of all walls (their heights), door openings, windows and expected soffit depths. Ensure the correct soffit is specified taking account whether the facets have frames, masonary or a combination of both.

EXAMPLE BELOW:
Form to fill in

ORDER FORM

Ultraroof™ By Ultraframe

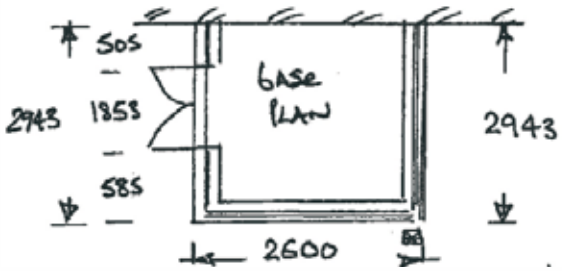
☐ **ORDER** e: roofsales@ultraframe.co.uk
☐ **QUOTE** e: quotes@ultraframe.co.uk
☐ New Build ☐ Replacement Project

PLEASE SKETCH YOUR PREFERRED DESIGN HERE
- mark window, door & wall positions/types.
INDICATE ON DRAWINGS IF ANY PART OF THE PROJECT IS EXISTING
DIMENSIONS ☐ Internal frame to internal frame ☐ External fascia to external fascia

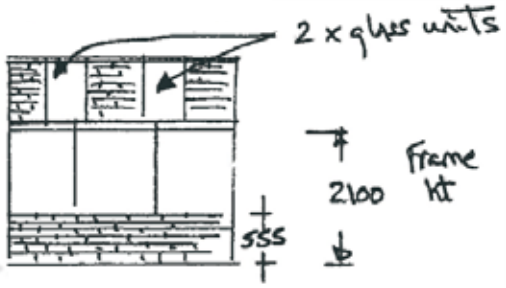
ACCOUNT No. ZTRA999
Company Name Home Improve
Order Number 129969
JOB REFERENCE Whittaker/Watson
Company Contact Mick Sunter
Telephone No. .....
Email .....
Delivery Address .....
.....
.....
POSTCODE .....
Delivery Date Req .....
Quotation Ref 199081

CRITICAL INFORMATION
***Required for structural snow / wind loading**
Site Postcode BB10 2BU
Roof Pitch 12.5°

PLAN VIEW



FRONT ELEVATION



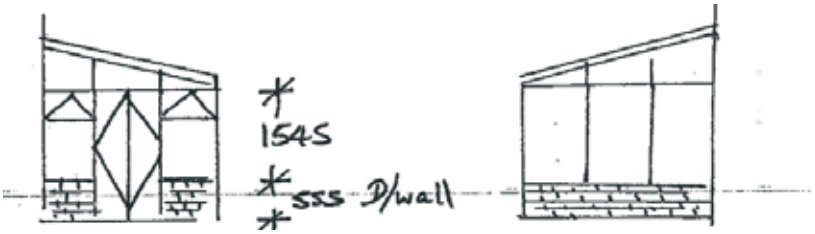
CUSTOMER NOTE: Please carefully read the Ultraroof380 System Overview before filling in order details

HOW TO PLACE AN ORDER FOR ULTRAROOF380:

1. Sketch plan & elevations.
   (If necessary, attach photos of existing property. Indicate on drawings if any part of project is existing).
2. Mark and caption the positions of all walls, brick piers, windows/doors, cut outs / intrusions.
3. Mark the preferred positions of any
   a) roof windows
   or b) rectangular glazed panels.
4. Upon placement of your Ultraroof380 order, an order confirmation is generated which must be signed and emailed back.

NOTES:
Please see p2 of Ultraroof380 system overview guide for list of what IS / IS NOT included

LEFT ELEVATION **RIGHT ELEVATION**



DECIDE ON EAVES SET OUT Tick box (a) or (b)

☑ (a) 40mm Soffit

☐ (b) 151.5mm Soffit

N.B. If not sat solely on frames, choose one of the options described on page 67 of Ultraroof380

4 STAGE SALES AND DESIGN PROCESS

STEP 2 - ROOF GLAZING

Select from INTEGRATED ROOF PANELS or VELUX ROOF WINDOWS

NOTE: If the roof design incorporates a box gutter, the box gutter type chosen will dictate your glazing option. Refer to pages 36 - 37.

Full glass

No glass

Velux

STEP 2 - ROOF GLAZING

There are two box gutters available. Standard and tapered.

Some box gutters may need internal beam support (see pages 36-37). If the customer wishes to change the box gutter types to avoid internal support this may restrict the placement of the glass. On some roofs there may be a trade off between internal support and glass placement. Integrated glass panels from ridge down to 265 box gutters. Velux roof windows only down to tapered box gutters.

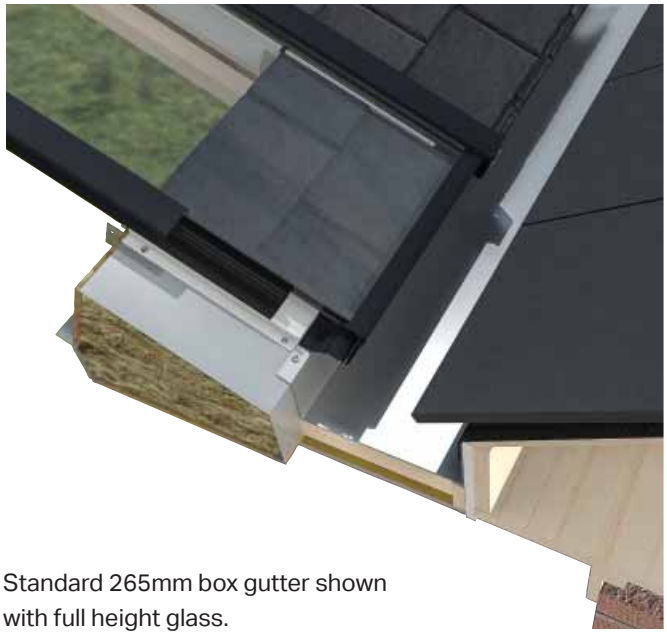
Limitations imposed by box gutter.

STANDARD BOX GUTTER

1. 265mm wide fabricated box gutter.
2. Must be used off fascia boards.
3. Can be used against vertical walls.

* See pages 59 - 63 for intrusions and pages 9 - 58 for structural support options.

NOTE: BOX BEAM MUST ALWAYS BE SUPPORTED WHEN USING A 265MM BOXGUTTER



Standard 265mm box gutter shown with full height glass.

TAPERED BOX GUTTER

1. Used when box beam abuts host wall.
2. Used when roof SIP panes strike host wall.

No supplementary support required.
Up to 7m in length.
Jointed beams would require support.

Tapered box gutter

4 STAGE SALES AND DESIGN PROCESS

STEP 3 - ROOF STYLE - SHAPE

Decide the roof shape best suited to the floor plan.

Lean-to

Georgian

Hip Back Georgian

Gable

3 bay Victorian

5 bay Victorian

P-Shape

STEP 3 - ROOF STYLE - SHAPE

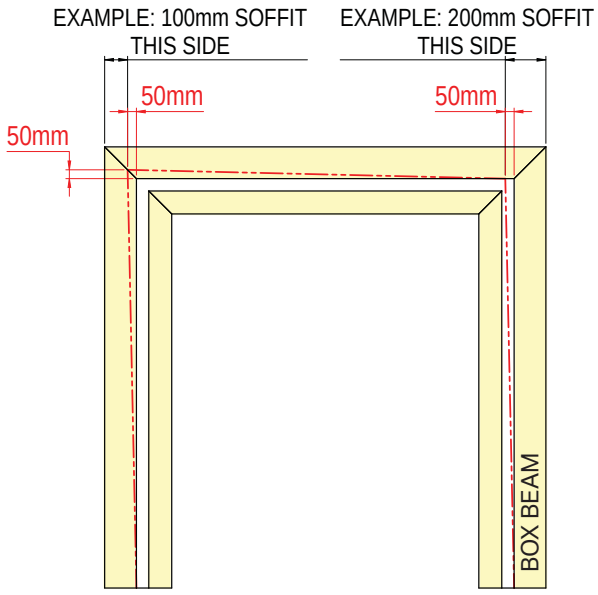
Tudor. See page 82 for details.

Existing Victorian shaped roofs can be replaced with a Georgian shape with a cantilever overhang which could include a lighting feature. This is particularly useful if the facets are unequal as Ultraroof380 can currently only accommodate equal facets.

Out of square.

Ultraroof380 can accommodate out of square existing buildings due to the wide nature of the beam. The soffit line will taper on both the inside and outside but the roof will remain square. The 151.5mm extended soffit MUST be used in this situation.

In extreme cases it might be better to recommend a re-build to make it square. See example below.



The deviation that is possible on standard 40mm soffit without on site modifications to parts is 10mm.

4 STAGE SALES AND DESIGN PROCESS

STEP 3 - ROOF STYLE - RIDGE & HIP BAR

Ridge and hip tiles are available for Ultraroof380 but not recommended in certain situations due to the additional trimming and fitting required on site.

ULTRAROOF380 OPTIONS	RECOMMENDED aluminium hip and ridge capping	OPTIONAL Tiled Hips, aluminium Ridge capping	OPTIONAL hips and ridge tiles	Tile finishing details
Georgian solid or with Velux roof window	YES	YES	YES →	Fitted to timber batons and trimmed at intersection point on site. (Trimming approx 30 min)
Georgian with integrated rectangular glass	YES	YES	NO →	No solution available
Victorian 3/5 bay solid or with Velux roof window	YES	NO	NOT RECOMMENDED →	Fitting/trimming of tiles at intersection point takes 2/4 hours on site. Aluminium capping option gives a neater solution.
Victorian 3/5 bay with integrated rectangular glass	YES	NO	NO →	No solution available

The most popular choice by far is aluminium top caps

- ✓ Increases profit
- ✓ Fast to fit
- ✓ Lower cost

STEP 4 - FINISHING TOUCHES - COLOUR

The Ultratile polymer roofing system not only replicates the natural look of slate tiles but is easier to install and less expensive without incurring the extra structural cost needed to accomodate conventional slate roofing. The Ultratile polymer roofing system is also designed to outperform and be more cost-effective than any other synthetic slate tile replica system on the market.

- 12 tiles per panel – fastest and easiest tile system to install!
- Most authentic looking tile on the market
- Much lower cost than fitting traditional slate tiles
- Lightweight co-polymer material - easy to install and transport
- Spacing and fixing guides making the tiles extremely quick to fit
- Fire resistance to National Class AC (as refered to in Building Regulations)
- Resistance to discolouration (U.V. rays)
- Perfect for replacement or new build projects
- Made from 100% recyclable material
- Virtually maintenance free
- Tiles laser cut in house for speedy installation

Available in 3 authentic colours to match 90% of UK housing stock

Carbon Grey

Harvest Brown

Terra Brick

The pictures of tiles are used for illustration purposes only.

Refer to sample for accurate tile colour.

4 STAGE SALES AND DESIGN PROCESS

STEP 4 - FINISHING TOUCHES - COLOUR

Customers can choose the colour of guttering, fascia/barge board, downpipes, gables support cladding. See page 15 for the colour choices available.

4 STAGE SALES AND DESIGN PROCESS

STEP 4 - FINISHING TOUCHES - COLOUR

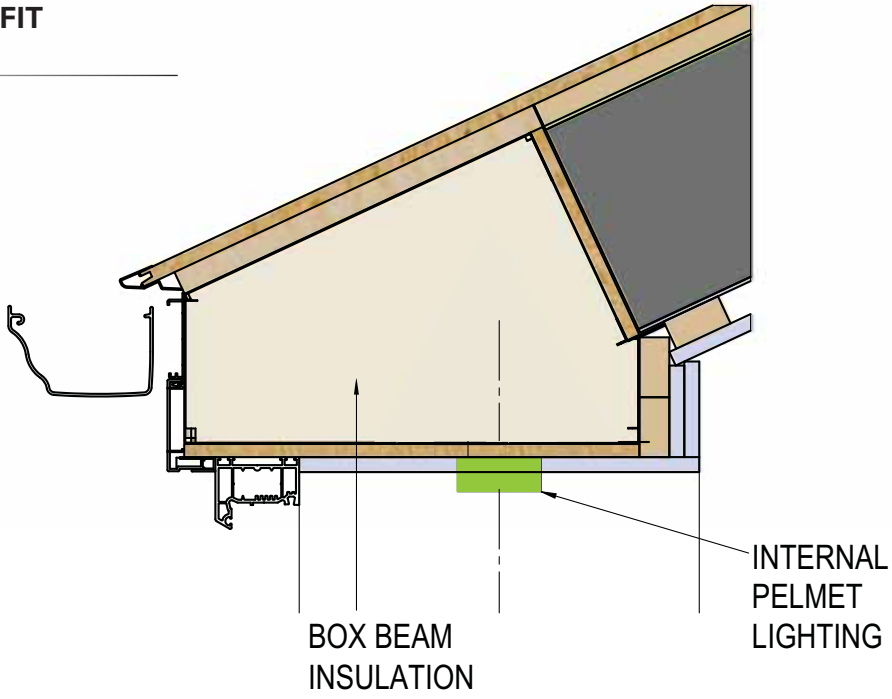
ULTRAROOF380 FOILED AND PAINTED PARTS											
PARTS	CODES	STOCK COLOURS						TILE SPECIFIC COLOURS			NOTE
		White	Light Oak	Mahogany	Rosewood	Black	Grey RAL7016	Carbon Grey	Harverst Brown RAl8025	Terra Brick Bespoke colour	
Fascia	NREB/3	y	y	y	y	y	y	n/a	n/a	n/a	
Downpipe		y	Caramac	Brown	Brown	y	y	n/a	n/a	n/a	
Gutter		y	Caramac	Brown	Brown	y	y	n/a	n/a	n/a	
Frame stiffener	SSPC	y	y	y	y	n	y	n/a	n/a	n/a	
H Section	NRSE/1	y	y	map to Rosewood	y	y	y	n/a	n/a	n/a	
Barge board	NRBB/1	y	y	map to Rosewood	y	y	y	n/a	n/a	n/a	
Soffit board	NRSE/2	y	y	map to Rosewood	y	y	y	n/a	n/a	n/a	
Eaves soffit	NREB/4	y	y	y	y	y	y	n/a	n/a	n/a	
PVCu corners	NRFCS, NRFCD	y	y	map to Rosewood	y	y	y	n/a	n/a	n/a	
Gable infill wedge		y	y	map to Rosewood	y	y	y	n/a	n/a	n/a	
Roof tile	NRPA001	n/a	n/a	n/a	n/a	n/a	n/a	y	y	y	
Ridge/Hip tile	NRRH001	n/a	n/a	n/a	n/a	n/a	n/a	y	y	y	
Starter tile	NRPA002	n/a	n/a	n/a	n/a	n/a	n/a	y	y	y	
Modesty panel	NRPA001	n/a	n/a	n/a	n/a	n/a	n/a	y	n	n	
Gable cladding & end cap	NRGCA600MGR/1 NRDV001R/MGR NRDV001L/MGR	n	n	n	n	n	y	n	Wet paint	Bespoke wet paint	Inherits tile colour
Hip bar top cap & end caps	LMHC600MGR/1 LMEC004MGR NRHB002MGR	n	n	n	n	n	y	n	Wet paint	Bespoke wet paint	User defined, doesn't inherit tile colour
Ridge cap and radius ends	NRRI600MGR/1 NRGE001MGR NRVE003MGR	n	n	n	n	n	y	n	Wet paint	Bespoke wet paint	Same as hips
Glazing bar top & end caps around glass units	NRRA600MGR/1 NREC001MGR	n	n	n	n	n	y	n	Wet paint	Bespoke wet paint	Inherits tile colour
Glass support. end profile and tile starter support	NREB600MGR/5 UZLPEB600FMGR/5 NREB600MGR/1	n	n	n	n	n	y	n	n	n	n
Roof vent	EXT grey INT white only										

4 STAGE SALES AND DESIGN PROCESS

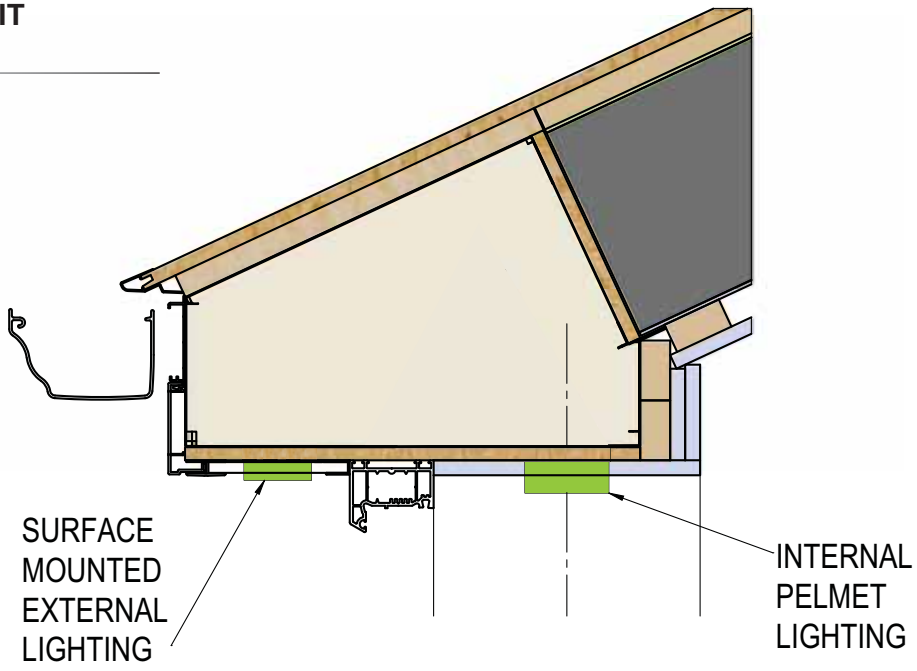
STEP 4 - FINISHING TOUCHES - PELMET LIGHTING

Internal lighting can be installed with a standard or extended soffit. Surface mounted lighting can be used externally on the extended soffit. Internal light fittings must be fire rated. External lights must be waterproof, low voltage and suitable for external use.

STANDARD SOFFIT

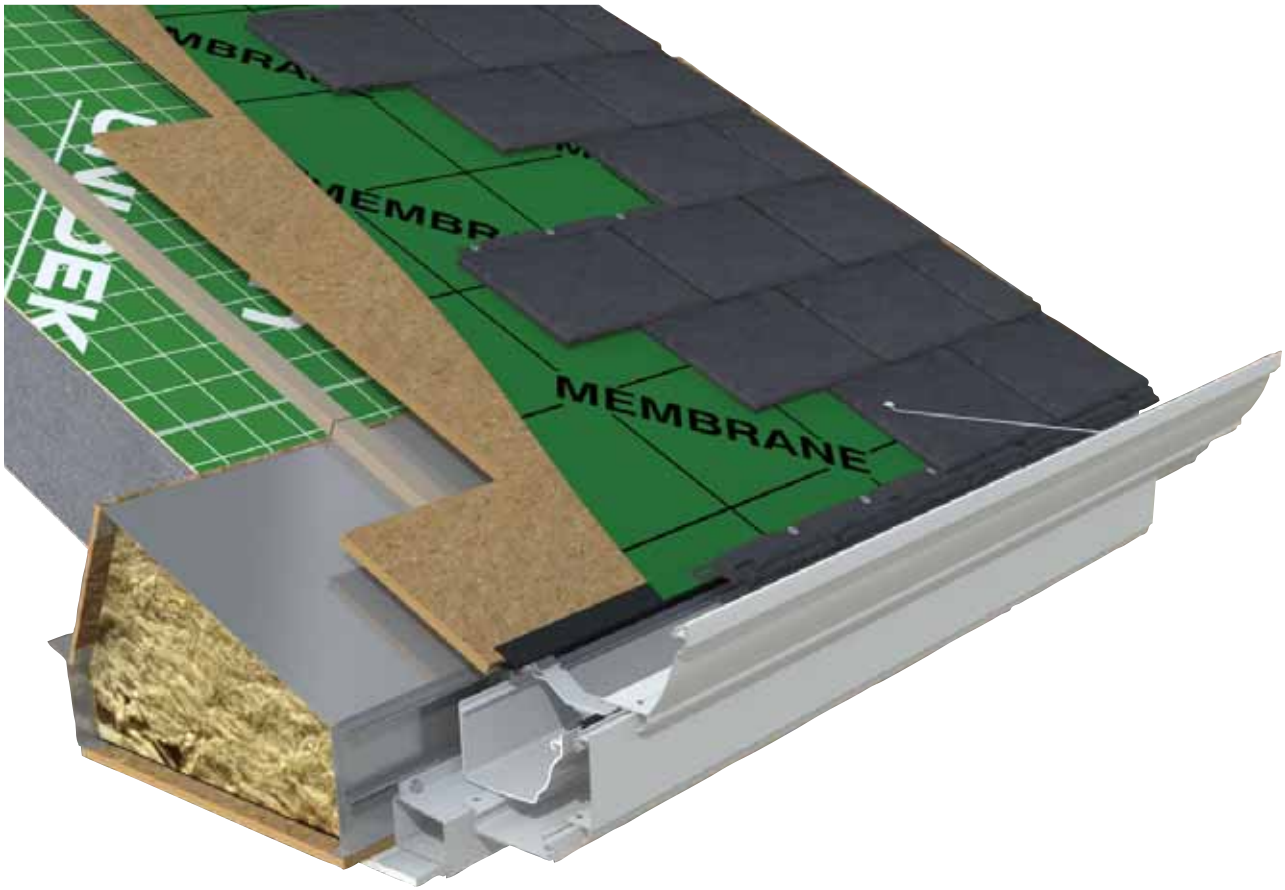


EXTENDED SOFFIT



STEP 4 - FINISHING TOUCHES - CURVED CORNICE

Two tier curved style cornice only. In white or grey only. Super-insulated column compatible. Super-insulated column concealed downpipe is not possible.
90° and 135° external corner cover angles only.



90° cornice return on gable fronts

HANDY CHECKLIST FOR: SURVEYING ULTRAROOF380

GENERAL

- [ ] 1. Is planning permission or building regulation approval needed?
  If yes, who will apply?
- [ ] 2. Is there sufficient access to the proposed building?
  Including height and width restrictions for delivery of material, concrete, frames, glass & welded cills etc?
- [ ] 3. Will construction involve crossing any public or neighbours path, garden, wall or hedge?
- [ ] 4. Will you need a skip on site?
- [ ] 5. Are there plants, bushes, trees, sheds, fish-ponds in the way?
- [ ] 6. Are there any other visible obstructions on the ground?
- [ ] 7. Is the house wall sufficiently out of plumb to require any allowance in the design of the roof? See page 25.
- [ ] 8. Are there any signs of settlement or hairline cracks in the house wall - have these been pointed out to the customer?
- [ ] 9. Is there a soil vent pipe, RWP, extractor fan or gas flue in the way of the proposed roof?
- [ ] 10. Are there any existing window or door openings to be moved, altered or bricked up?
- [ ] 11. New openings to existing property will require new lintels which will require building regulation approval. See page 20 - building regulations.
  Fitting Ultraroof380 does not guarantee the removal of seperating doors.
- [ ] 12. Are there any existing window or door openings to be included within the newly proposed extension?
- [ ] 13. Is there a height restriction above the proposed roof ie. a bedroom window?
- [ ] 14. Ensure there is enough room above the ridge to lead flash?
- [ ] 15. If installing to a bungalow fascia, lift the front row of tiles, check that the roofing felt over the projecting eaves is in good condition or it will need to be replaced.
- [ ] 16. Will the new extension roof fit below the bungalow soffit board?
- [ ] 17. Will the new extension roof fit to the bungalow fascia board?
- [ ] 18. Ensure the fascia is deep enough and in good enough condition?
- [ ] 19. When installing a roof to the fascia is there enough room to re-fit the existing gutter?
- [ ] 20. Will the Ultraroof380 overhang a boundary wall? With a standard soffit Ultraroof380 is 90mm wider than a standard conservatory roof on both sides and 202mm wider when the extended soffit is used.
- [ ] 21. Has the right box gutter been specified? Refer to page 9
- [ ] 22. Will the box beam need any structural support? Any unsupported box beam over 4m needs structural support (Gallows, Brick piers, timber stud work). Refer to pages 49-58.
- [ ] 23. Will an extended soffit be needed? (e.g. with Super-insulated or brickwork Columns)
- [ ] 24. Is there enough space on the house wall to allow for the box beam. It should not cut across openings on the host wall.

Always consult Ultraframe if there is something you are uncertain about, please call Ultraframe's technical helpline on 01200 452 918.

HANDY CHECKLIST FOR: SURVEYING ULTRAROOF 380

REPLACEMENT

- [ ] 1. Are there any “hairline cracks” within the existing base and walls to establish whether the existing structure is sound.
- [ ] 2. Are the existing window frames in good condition or is there for example evidence of cracking welds within the frames.
- [ ] 3. What are the internal and external frame sizes and relevant apertures?
  These must all be measured to ensure the desired overhang is achieved.
- [ ] 4. Will existing cavity trays and flashing need to be moved? Ultraroof380 sits higher on the slope. (27.5mm higher with a standard soffit and 79.5mm higher with an extended soffit.*) Compared to Ultraframe Classic Roof 4000mm internal width at 25 °pitch

NEW BUILD

- [ ] 1. Are there any existing structures to demolish?
- [ ] 2. Is there an existing patio or path to be removed?
- [ ] 3. Is there an existing retaining wall - will this need re-constructing?
- [ ] 4. Are there any projecting bell casts, soldier courses, key stones in the way?
- [ ] 5. Are there any TV, satellite or telephone cables in the way?
- [ ] 6. Are there air bricks or head ventilators in the existing extension?
- [ ] 7. What is the existing external wall finish - Facing brick, stone, render or pebbledash to match to?
- [ ] 8. If facing brick, is a cavity tray required?
- [ ] 9. Will you need to install a vertical damp proof course where the side frames abut the house/bungalow wall?
- [ ] 10. Are there any existing underground drainage pipes to be moved or built over?

NEW BUILD

- [ ] 11. Is there an existing manhole to be moved or raised to the new extension floor level then sealed with an airtight cover?
- [ ] 12. Are there any pipes or cables to be catered for in the proposed build?
- [ ] 13. Will the difference in house floor level and the proposed new extension floor level require steps?
- [ ] 14. Will the difference between the proposed new extension floor level and the outside ground floor level need a landing, steps and handrail?
- [ ] 15. Is a dwarf wall required - what height?
- [ ] 16. Are there squint bricks or stone quoins required or will you cut and bond bricks?
- [ ] 17. Are there any new openings required in the proposed basework for doors?
- [ ] 18. Is the site sloping away requiring extra height to the basework?
- [ ] 19. Is the site sloping towards the basework requiring excavation?
- [ ] 20. Will a retaining wall be needed?
- [ ] 21. Is a new path or patio area required?
- [ ] 22. Check coursing and spacing of brickwork against existing - ie Imperial or Metric
- [ ] 23. Is the new extension rainwater to discharge into an existing gulley or is a new gulley required?
- [ ] 24. Is there a sufficient number of rainwater outlets for the size of roof?
- [ ] 25. Is there an existing gulley to move?
- [ ] 26. Has all the detail been discussed and agreed with the customer

BUILDING REGULATIONS

Building regulations for replacement conservatory roofs are ambiguous, however we and LABC recommend that retailers apply for building regulation approval because the lack of a completion certificate can become a costly issue when the property is sold.

Ultraroof380 meets building regulation requirements. To ensure the design is fit for purpose, please provide the postcode so that wind and snow are applied correctly to the design. In addition to the quotation Ultraframe can provide a thermal report to enable SAP calculations to support the building regulation application.

ENGLAND & WALES - REPLACEMENT ROOFS

Building regulations for replacement roof projects can be applied for EITHER through the Local Authority Building Control Department OR through a private sector Approved Building Control Inspector i.e. JHAI.

The design details for Ultraroof380 has been registered with JHAI, an Approved Building Control Inspector who have audited the Ultraroof380 manufacturing process. JHAI's inspectors provide a consistent and informed service when applications are made to them, typically with only one inspection visit arranged directly with the householder. For more details visit www.UR380info.com

ENGLAND & WALES - NEW BUILDS

Building regulations for new build projects can be applied for EITHER through the Local Authority Building Control Department OR through a private sector Approved Building Control Inspector.

JHAI offer building control service for new build projects, with up to six visits to site if required depending on the complexity of the project. Please visit www.UR380info.com to download details of JHAI's costs and service.

SCOTLAND

A building warrant is required for all roof replacement and extensions in Scotland. An SER (Structural Engineers Report) is typically required as part of the warrant application. Please consult Ultraframe if you need advice on structural engineers who have experience with Ultraroof380.

MAKE AN ENQUIRY
- Email enquiry/quote form to **quotes@ultraframe.co.uk**
- Always include site postcode

RECEIVE A QUOTE
- Structural Design Report
- Thermal Report
- Quote

OBTAIN SER REPORT
- Retailer commissions a Structural Engineer to provide SER for complete structure
- Send Ultraframe Structural Design Report to Structural Engineer

SAP CALCULATION
- Retailer commissions Engineer to provide SAP calculations
- Send Ultraframe Thermal Report to SAP Engineer

WARRANT APPLICATION
- Apply to local Authority Building Control for approval
- Send Warrant Application with SER and SAP Calculation

Planning permission and Building Regulations can be a tricky subject when building home extensions, so it's important to refer to the most relevant and up-to-date information. The Planning Portal (https://www.planningportal.co.uk/) is the best source of information for Planning and Building Regulation information for conservatories and extensions. Also, please download the GGF's 'A Guide to Good Practice' for a detailed overview of the specification and installation of conservatories within the United Kingdom.

ASSESSING THE EXISTING CONSERVATORY

Changing the roof on a previously exempt conservatory from glazing to solid panels means that you have changed the status of the structure.

The new roof is seen as an improvement and MUST comply with parts of the Building Regulations (this assumes the doors separating the house and conservatory are retained). There is a caveat – the replacement roof should not make the condition of the existing structure worse – this relates to the ability of the existing side frames and foundations to carry the additional loads imposed by the solid roof. It is necessary to undertake some structural checks that MAY lead to additional site works.

Adequate support from the existing structure is required in three main areas by:
1. Window frames.
2. Mullions/corner posts.
3. Foundations.

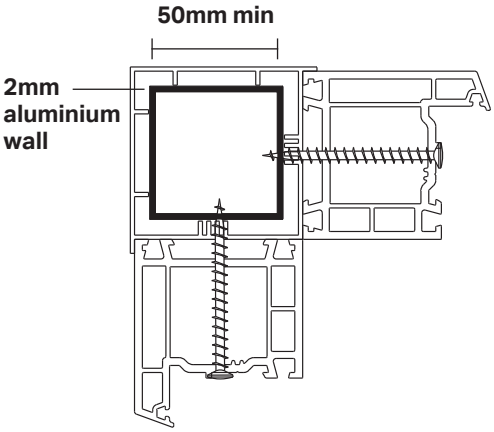
PVCu WINDOW FRAMES

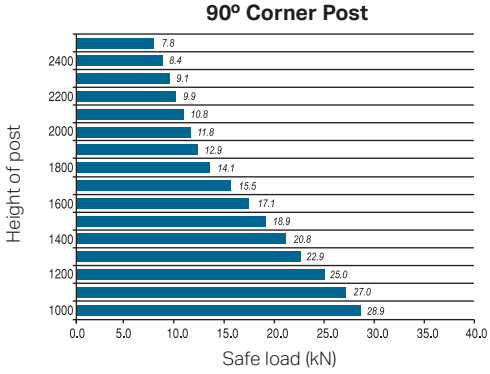
The primary fixing method of the roof is at the house wall and through the head of the window frames and into the beam. At the corners fixing is made through the existing frames into the OSB corner sheves (which are supplied) and into the beam. When fitting Ultraroof380 onto the existing frames, then the side frames may need de-glazing to allow fixing of box eaves beam. Use bay pole fixings or similar at 450 centres and no more than 200mm from each eaves end/corner (not provided).

CORNER POSTS

Unreinforced PVCu Frames. If at survey stage there is no reinforcement within the PVCu frames it may be necessary to replace the corner posts. The dead load of Ultraroof380 is 38Kg/m^2 plus the snow load which as a minimum is typically 60kg/m^2. On a 5m x 5m Georgian roof for example, the load is 2803Kg which translates to a maximum loading at each corner of 7kN.

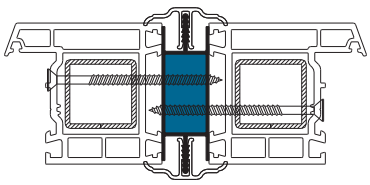
Using the table to the right it can be seen that an aluminium corner post of 50mm square hollow section with a 2mm wall will be adequate - generally corner posts will be larger than this. At survey stage it may be difficult to confirm the presence of the aluminium inside the PVCu sleeve until the roof is removed. Assuming new frames are not being installed, it may be advisable to send with the fitters some spare corner posts to swap with the existing.





ASSESSING THE EXISTING CONSERVATORY - GUIDELINES

MULLIONS



An aluminium mullion performs a number of functions, namely;

- acting as a wind post to prevent deflection of the frames by wind pressure
- to support the roof's eaves beam
- to assist with the connection of the side frames.

Mullion as a wind post:- the size of the mullion depends on the height of the frame. With full height frames (2100mm) the mullion needs to be the full front to back depth of the window frame and at least 20mm wide.

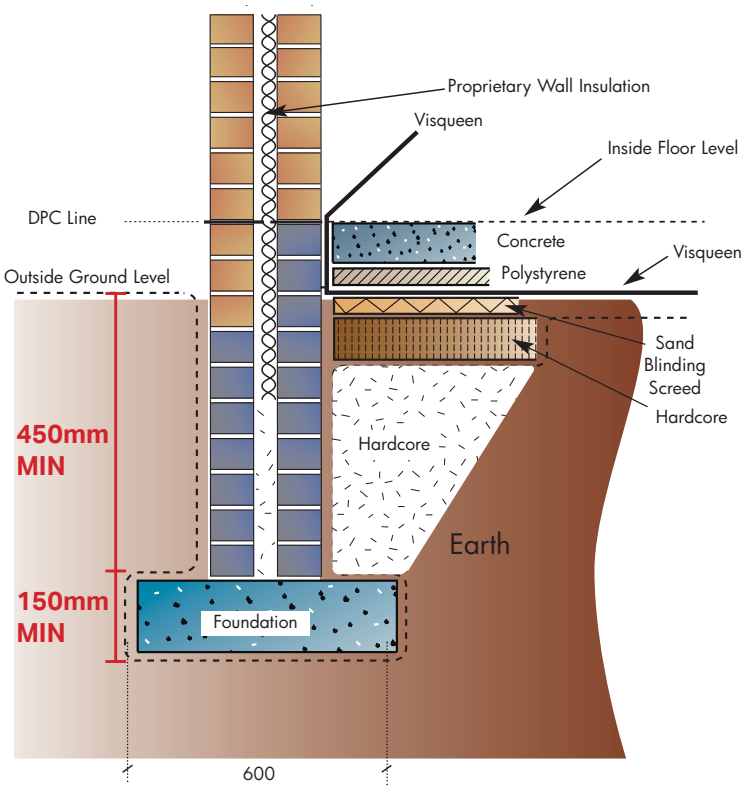
Adding mullions to existing frames is not really viable – this option should be considered if the consumer has requested new frames/doors. Should the PVCu frames be replaced, the insertion of suitable mullions can obviate the need for reinforcement in the frames (as far as structural reasons are concerned) – when using mullions, always place a 20mm washer behind the head of the screw to spread fixing loads.

FOUNDATIONS

As everyone knows and appreciates, foundation design greatly depends on local ground conditions and advice should be sought from local LABC or an Approved Inspector like Ultraframe's partner Jhai. However there are some rules which are absolute and therefore if the proposed conservatory falls outside this it may be necessary to underpin the existing or remove the existing base and start again. Take up the old foundations if;

- There is an inadequate depth of foundation. The strip foundation MUST be a minimum of 450mm and the concrete strip a minimum of 150mm thick.

- There is visible movement between the house wall and the conservatory dwarf wall or cracks in the dwarf wall - this is a clear indication the foundations are not adequate and also require remedial work.



Remediation work (mini piling etc.) can be undertaken cost effectively – Ultraframe recommends **QUICKBASE 0845 644 0000** if you wish to pursue this option.

IF IN DOUBT ABOUT STRUCTURAL COMPLIANCE, PLEASE CONSULT LABC, JHAI OR A STRUCTURAL ENGINEER.

ULTRAROOF380 SURVEYING GUIDELINES

Ultraroof380, light weight solid roofing differs from Ultraframe Classic conservatory roofing in that, it offers a traditional overhanging soffit area beyond the external frame face. Initial site survey is no different in that great care must be taken in examining the existing host wall for being flat (ie: bulges or bowing from left to right) and vertically plumb (ie: leaning forwards or backwards). If any of the above issues are detected then this must be allowed for in your final sizes.

ULTRAROOF380 IS WORKED FROM INTERNAL FRAME SIZES.

If replacing a conservatory roof on **60mm frames** with **Standard soffit**, the soffit overhang **increases to 50mm**. If installing on **100mm frames**, the Standard soffit overhang would **reduce to 10mm**.

INTERNAL FRAMES	OVERHANG IS SET	WHEN BOX EAVES BEAM SAT ON
STANDARD SOFFIT	40mm	70mm frames
EXTENDED SOFFIT	151.5mm	70mm frames

ULTRAROOF380 INFORMATION

1 Ultraroof380 must be made square, with EQUAL angles (i.e: 90, 135 or 150 degree angles), EQUAL facet sizes and maximum 3° pitch variation (front to side) - Out of square can be accommodated or Tudor used. See pages 11 and 82.

2 Lean-To's with hipped end(s) may have up to 3° pitch variation front to side(s). Minimum pitch 15°.

3 Every roof must be pitched in full degrees (e.g. not 25.5°), duo pitches range from 15°- 40° and Lean-To's start at 12.5°, otherwise 13-40 in one degree increments available in full degree increments.

4 On replacement roof only jobs existing internal frame angles may vary. This will result in varying internal/external soffit width variations being visible. If extreme, replacing the frames would be recommended. If existing basework/ brickwork angles are out, the fitting of a deeper external cill may hide discrepancies.

5 Externally, Ultraroof380 with "Standard soffit" is 180mm (90mm each side) wider than Classic roof. Greater care is needed when working close to the boundary line. Ultraroof380, coincidentally, is the same width as Classic roof with Cornice .i.e: 242mm from internal frame to outer edge of gutter.

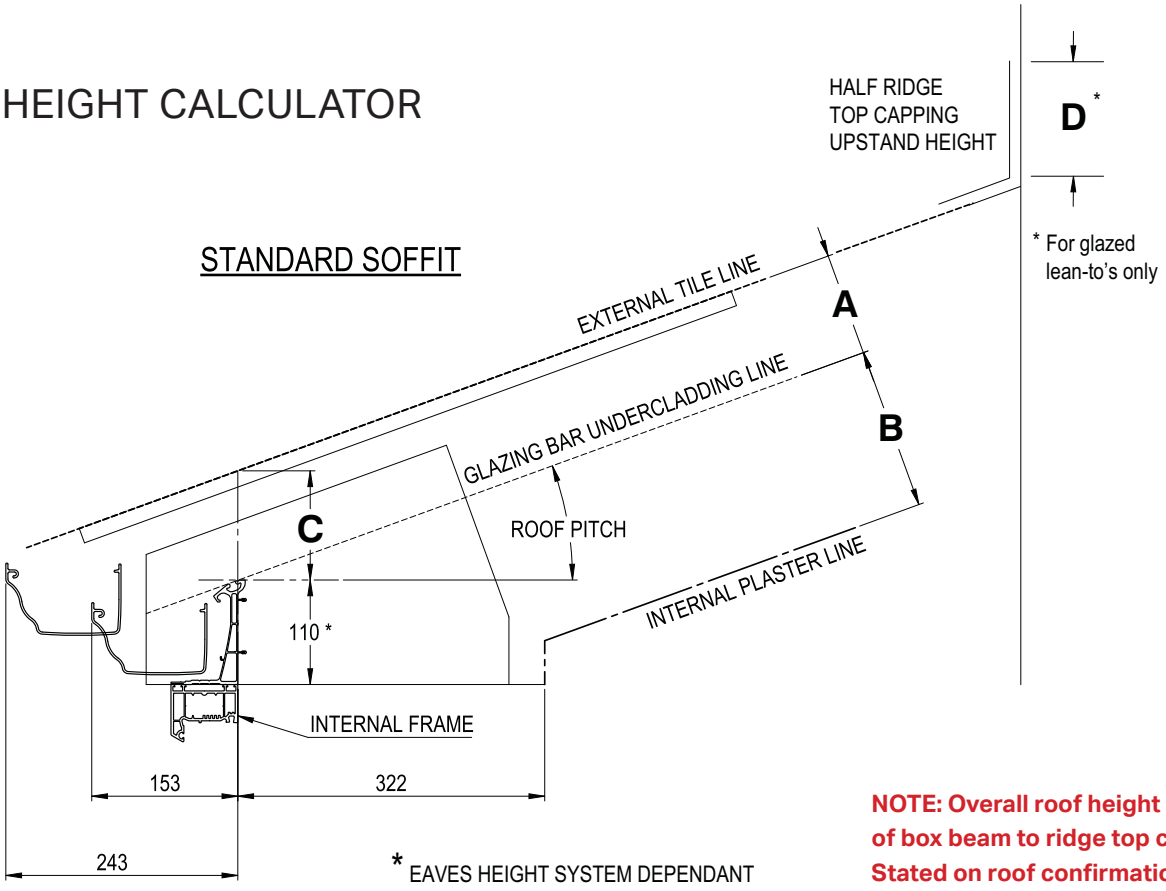
6 Externally, Ultraroof380 with "Standard soffit" sits 27.5mm higher on slope/pitch than Classic roof at 25° pitch. This should not affect an existing lead flashing line if going to be re-used.

7 Externally, Ultraroof380 overall roof height (stated on roof confirmation) is measured from underside of box eaves beam (head of frame, unless packed off) to top of external ridge top capping. Allow for standard ridge flashing detail above this.

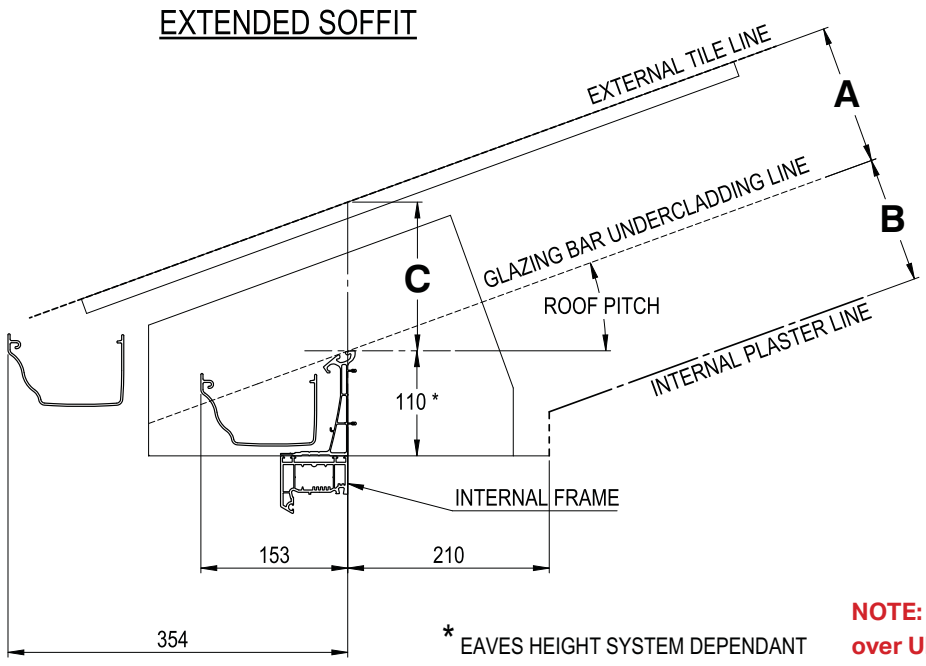
8 Externally, if fitting "Extended soffit" the roof sits 79.5mm higher on slope/pitch than Classic at 25° pitch. This could interfere with existing flashing detail. Critically more important if a cavity tray is installed. Therefore, if cavity trays are installed, standard soffit overhang would be better suited.

9 Internally, using "Standard soffit" detail: The box eaves beam (when plastered) stands 321.5mm in from internal frame. ENSURE this does not cut across an internal patio door/window opening on the rear host wall. Using "Extended soffit" which stands only 210mm in from internal frame may help in this situation. Reducing the opening width and replacing with narrower doors may be an alternative solution. See page 28.

HEIGHT CALCULATOR



NOTE: Overall roof height (underside of box beam to ridge top capping). Stated on roof confirmation.



NOTE: 380 shown super imposed over Ultraframe Classic eaves beam for comparison.

STANDARD	A	B	C	D
12.5	97	179	98	96
15	101	176	103	94
20	107	169	114	88
25	114	163	126	82
30	119	158	139	76
35	124	153	154	69
40	128	149	171	61

EXTENDED	A	B	C	D
12.5	121	156	123	96
15	130	147	133	94
20	146	131	154	88
25	161	116	178	82
30	175	102	203	76
35	188	89	232	69
40	200	77	265	61

LEAN TO INFORMATION - HEIGHTS TO TOP OF W.PLATE

Wallplate glass

EXAMINING THE HOST WALL

This information applies to both replacement and new build projects.
Please read this guide before commencing your survey.

Check the House Wall
The box beam is large and should not be cut on site. Tiles are pre-cut to minimise work on site. As a result adjustments in size due to variations in the house wall are best made at survey stage.
Please check the house wall to establish whether it is plumb. Adjusting the projection dimension before manufacture will ensure your design will fit. Please advise your installers that you have made this adjustment to avoid confusion on site.

New Build.
If the house wall leans forward: when the Ultraroof380 half ridge (shown) butts to the house wall the whole conservatory will be pushed forward of the basework, resulting in excessive overhang at the front. You would benefit by reducing the projection in this case to. See Diagram A.

If the house wall leans backwards: then the roof projection dimension should be taken from the top of the dwarf wall and a suitable packer will need to be inserted between the half ridge and house wall when installing. See diagram B.

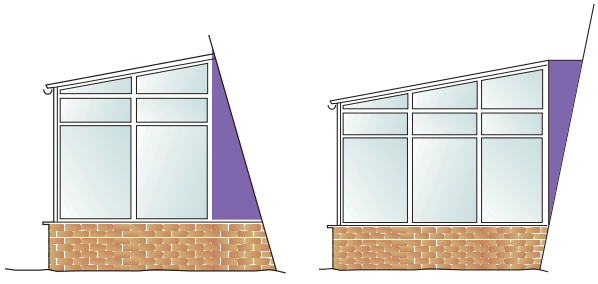


Diagram A Diagram B

CALCULATING THE ROOF SIZE

What is the Supporting Structure?

Full height frames

Frames on dwarf walls

Use internal frame measurement to order

Full height brickwork

Combination of full height brickwork and frames

Use internal frame measurement to order OR
Use finished roof measurement to order (fascia to fascia)

Which soffit type do you want?

A **STANDARD**
Soffit Widths = 40mm

***B** **EXTENDED**
Soffit Widths = 151.5mm

*Compatible with super-insulated columns

Which brick option do you want?

***1** Soffit Widths =
BRICK 94mm | FRAMES 126.5mm
(From external face of fascia)

2 Soffit Widths =
BRICK -190mm | FRAMES 40mm
(From external face of fascia)

***3** Soffit Widths =
BRICK 7.5mm | FRAMES 40mm
(From external face of fascia)

4 Soffit Widths =
BRICK 40mm | FRAMES 72.5mm
(From external face of fascia)

*Compatible with super-insulated columns

FOR INFORMATION ABOUT HOW THE SOFFITS WILL SIT OVER WINDOW FRAMES SEE PAGE 64

FOR ADDITIONAL INFORMATION ON OPTIONS FOR HOW THE SOFFIT WILL SIT ON BRICKWORK SEE PAGES 65 - 69.

SPECIFIERS
– USEFUL POINTS TO REMEMBER WHEN ORDERING ULTRAROOF380

1. A Building Regulation application form must always be submitted to the relevant Local Authority or private sector building control.

2. Postcodes should always be included with your order so that the structural design guide within the software will ensure the snow and wind loads are correct.

3. With a standard soffit Ultraroof380 is 90mm wider than a standard Ultraframe Classic conservatory roof on both sides and 202mm wider when the extended soffit is used. Include all WALL heights and distances to boundary lines in floor plans and elevations.

4. Ultraroof380's aluminium ridge and hips caps are generally preferred vs replica tile ridge caps as they are considered to look better and are fitted much faster. Both options are available, see page 12 for restrictions.

5. All new window frames and cills should be fully reinforced to support Ultraroof380. A maximum frame length of 2.5m is allowed before structural couplings are required.

6. Ultraroof380's unique full height glass panels are the most cost effective way to install glazed panels and are consumer preferred due to their size. There are however some limitations to the glazing options offered. See pages 31 and 37.
    - Rectangular glass units can NOT be positioned on roof slope down to tapered box gutter.
    - 550mm wide Velux roof windows only. Can be installed to tapered or 265mm box gutter.
    - Integrated glazing. Only rectangular glass units up to 1,000mm wide at 90° to the ridge are permitted.

7. The Ultraroof380 box beam requires structural support in certain situations e.g. over 4M spans and when a 265mm box gutter is used. The structural support options offer a design choice for homeowners. Ensure that the options have been agreed with the homeowner in advance. Refer to pages 49 - 58.

8. During the initial stages of installation the box beam will need to be supported. Ensure timber support props or acro props will be available on site, refer to installation guide.

9. There are two box gutter options; standard 265mm or tapered. Tapered box gutters can only be used when box beam or roof panels directly abut host wall. Refer to pages 9 and 36 - 37.

10. Ultraroof380 comes in three shades of authentic tiles and you can order a range of colours for fascia board, barge board, gable infil & guttering etc. See pages 13-15 for options.

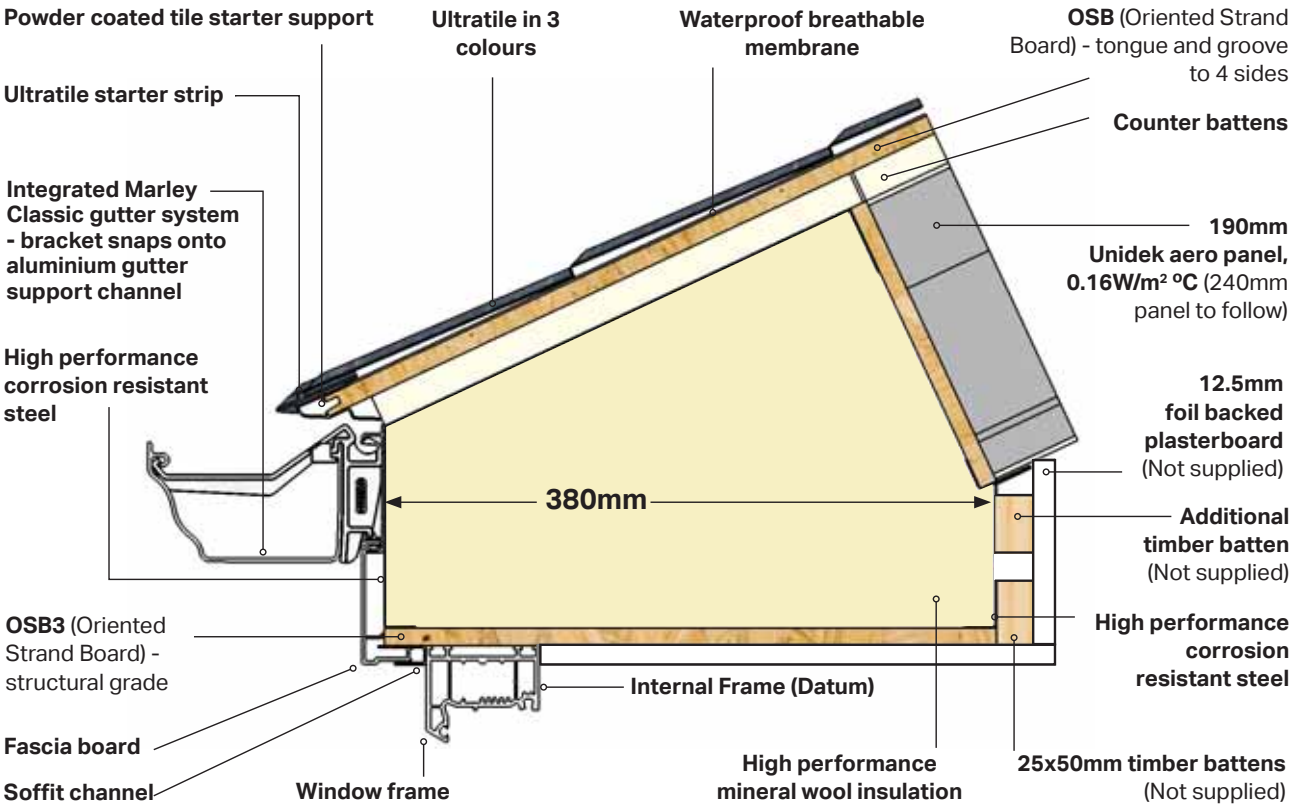
11. On Lean-to roofs, the gable end frame stiffener is NOT supplied as standard. Must be requested if required (for example above door openings (see image at the bottom of page 30)

Several items are not supplied by Ultraframe as they are easier and cheaper to source locally.
These are:-

- Velux roof windows and EDL flashing kits (the roof arrives prepared for Velux)
- Anchor or Masonry fixng bolts to host wall
- Internal 25mm x 50mm and 20mm x 50mm timber plastering battens.
- 12.5 foiled backed plaster board and skimming beads.
- LED (fire resistant) lighting.
- Structural support (available from Ultraframe)
- Timber support props (75mm x 50mm) beam support
- FRAME TO BOXBEAM FIXINGS

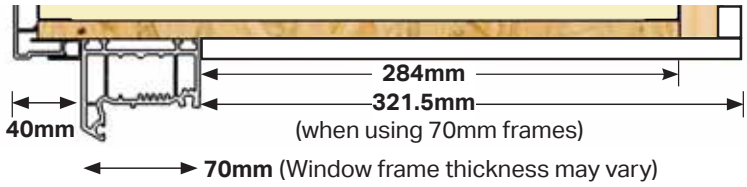
Always consult Ultraframe if there is something you are uncertain about, please call Ultraframe's technical helpline on 01200 452918

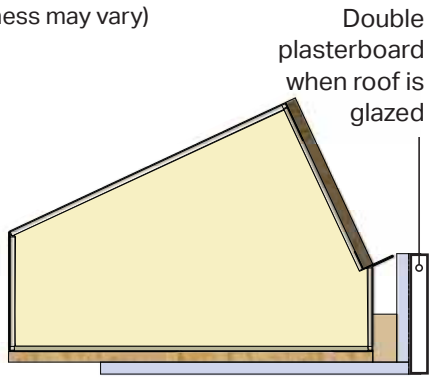
PRODUCT ASSEMBLIES



Standard Soffit

NOT SUITABLE FOR SUPER-INSULATED COLUMNS

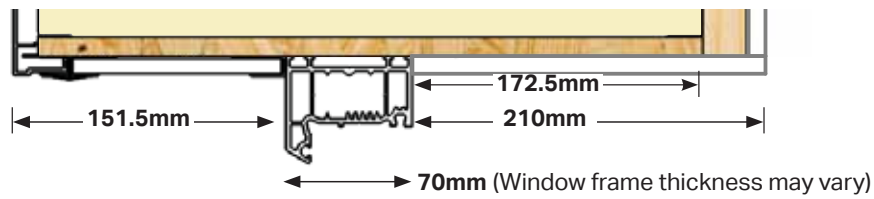




Alternative (only option if sat on super-insulated columns) - see page 81

Extended Soffit

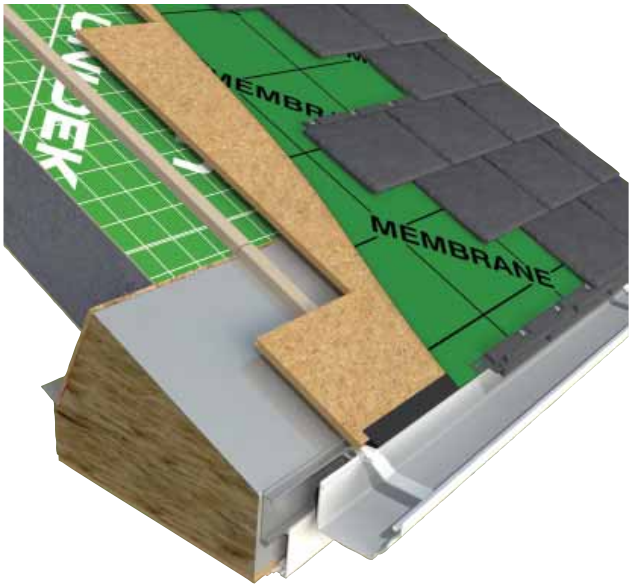
MUST BE USED ABOVE SUPER-INSULATED COLUMNS



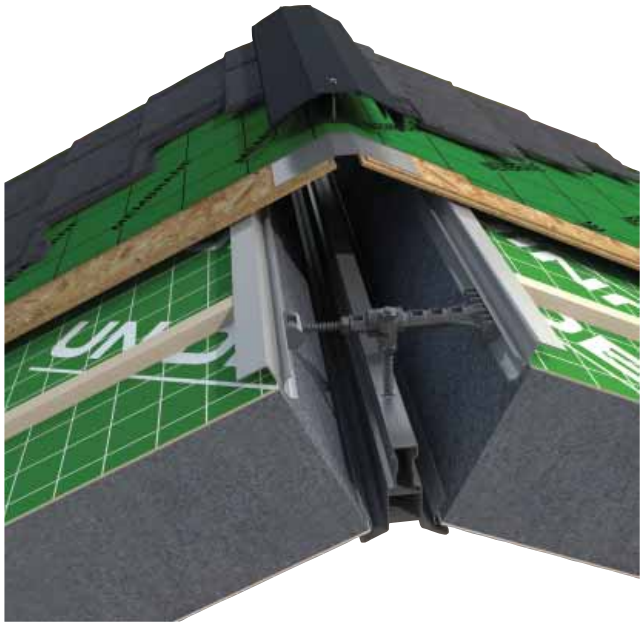
PRODUCT ASSEMBLIES

Beam glass

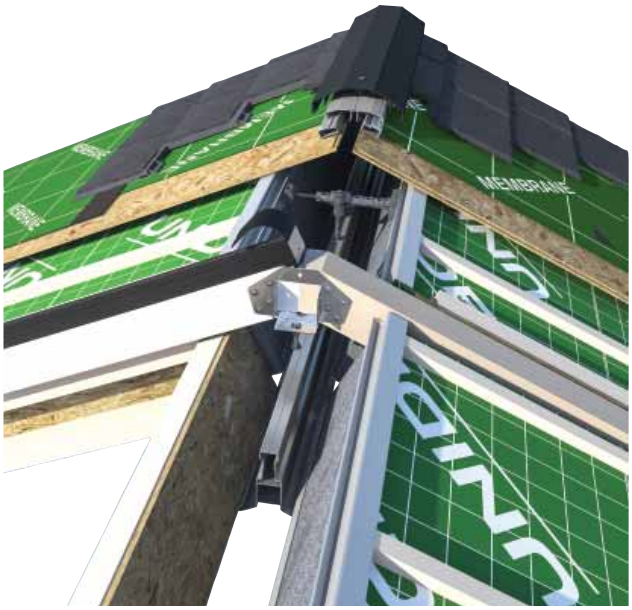
Beam solid



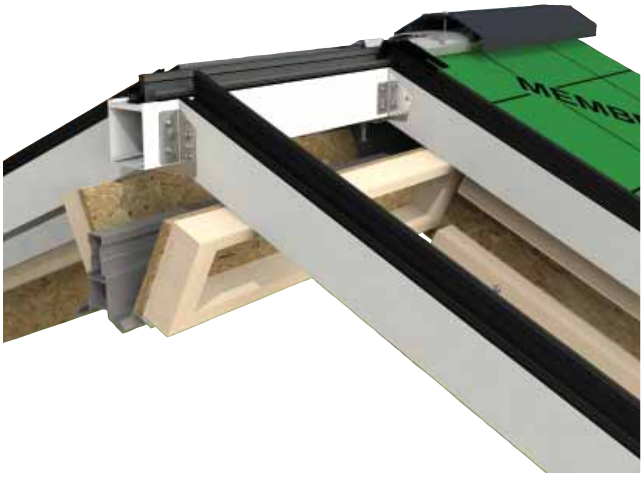
Ridge solid solid



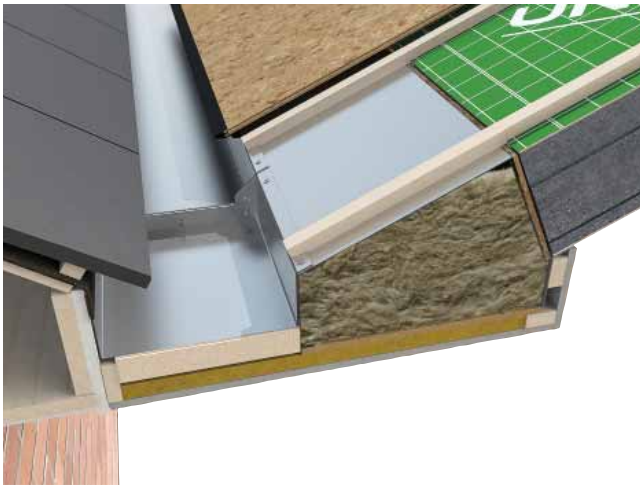
Ridge solid glass



Ridge glass glass

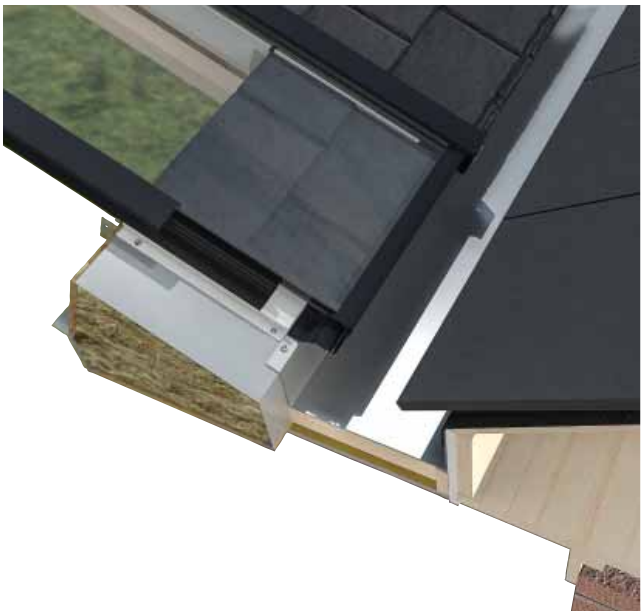


265 box gutter



PRODUCT ASSEMBLIES

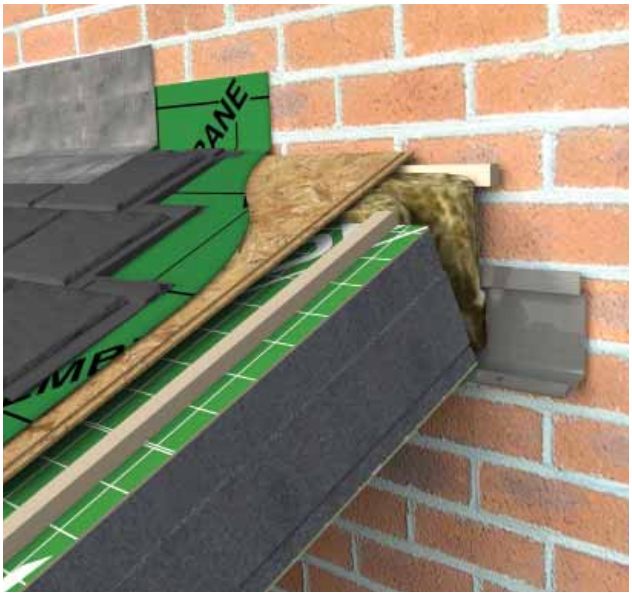
Boxgutter glass



Tapered box gutter

Wallplate glass

Wallplate solid



Bars

Lean to roof gable end frame stiffener is **NOT** supplied as standard. Must be requested if required (for example above door openings).

Lean to only

Gable extended

Lean to gable stiffener

FIRE SAFETY

The minimum fire performance rating required by Building Regulations for roofs is AC based on the following classifications.

FIRST LETTER
PENETRATION CLASSIFICATIONS

A Specimens not penetrated within 1 hour
B Specimens penetrated in not less than half hour
C Specimens penetrated in less than half hour
D Specimens penetrated in the preliminary flame test

SECOND LETTER
SPREAD OF FLAME CLASSIFICATIONS

A Specimens with no spread of flame
B Specimens with not more than 533mm spread of flame
C Specimens with more than 533mm spread of flame
D Specimens which continue to burn for 5 mins after the withdrawal of the test flame or spread more than 381mm in the preliminary test.

The assembled Ultraroof 380 has been independently fire tested by Exova Warrington Fire and has been rated AC

Certificates available to download https://trade.ultraframe-conservatories.co.uk/trade/our-products/fire-safety/
The full report is available on request from Ultraframe

ROOF GLAZING

Select from INTEGRATED ROOF PANELS or VELUX ROOF WINDOWS

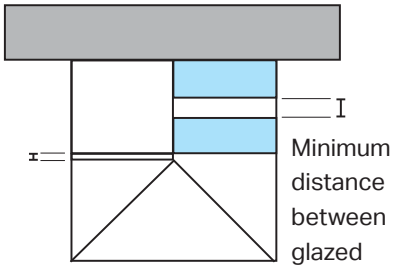
NOTE: If the roof design incorporates a box gutter, the box gutter type chosen will dictate your glazing option. See options and instances on p36 - 37.

INTEGRATED GLAZED PANEL POSITIONING

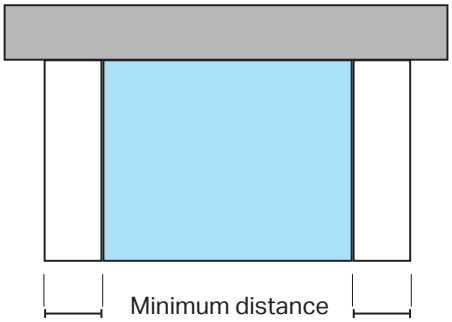
GLAZING AREA

HOST WALL / STRUCTURE

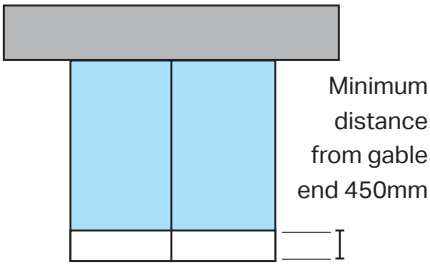
Georgian and Victorian



Lean-to



Gable



Glazing can be fitted immediately adjacent to the host wall or MUST be at least 364mm away from the host wall.

Glazing area - bars must be a minimum of 300mm centres
- are spaced at a max 1000mm centres
- multiple glass panels in series is possible. e.g. 1800mm glazed area in 3x 600mm or 2 x 900mm.

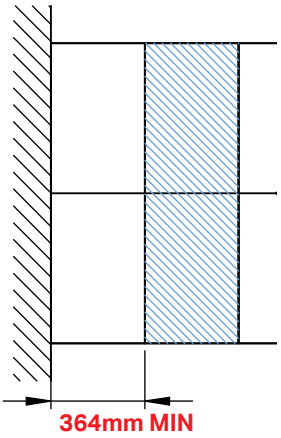
INTEGRATED GLAZING RULES

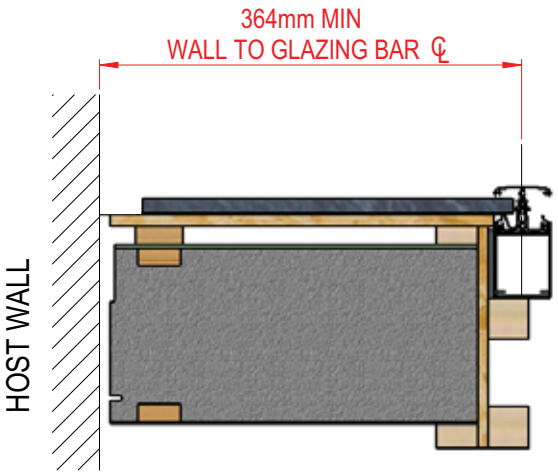
WHEN CAN YOU HAVE GLAZING?

GLAZING PANEL
MAX 980mm
(Bar centres 1000mm)
up to an area of 2.4m²

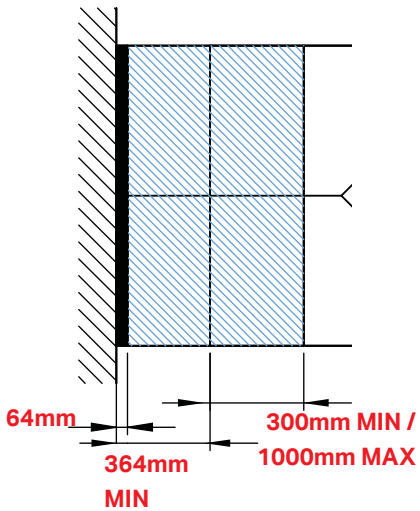
One of Ultraroof380's features is the ability to have fully glazed panels that span right from the ridge to the edge of the roof, allowing great amounts of light to enter a room. These glass panels can be arranged in all manner of ways and configurations to give the desired result for design of the roof. The following outlines the options for glazing in the different styles Ultraroof380.

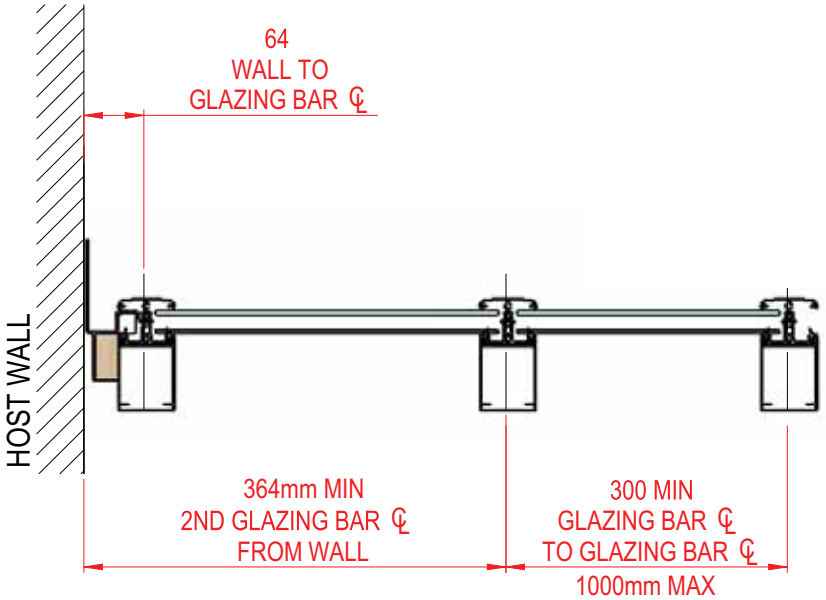
Solid panels at host wall.
Glass panels adjacent.





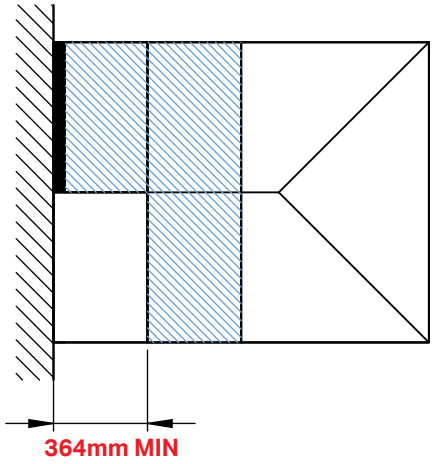
Glass panels at host wall.
Glass panels adjacent.

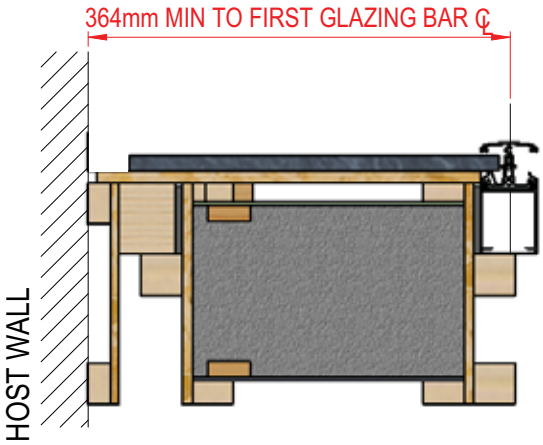




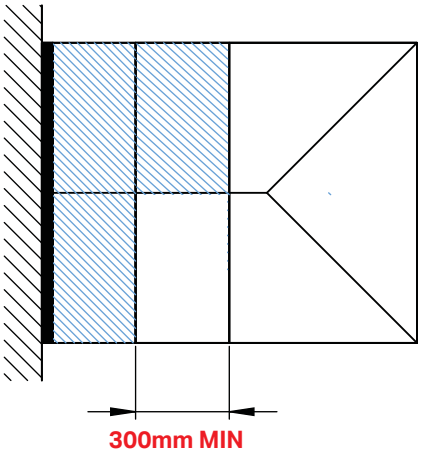
INTEGRATED GLAZING RULES

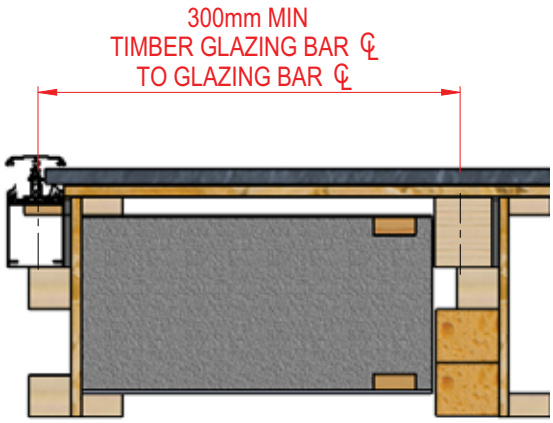
Glass panels at host wall one side.
Solid panel at host wall opposite.



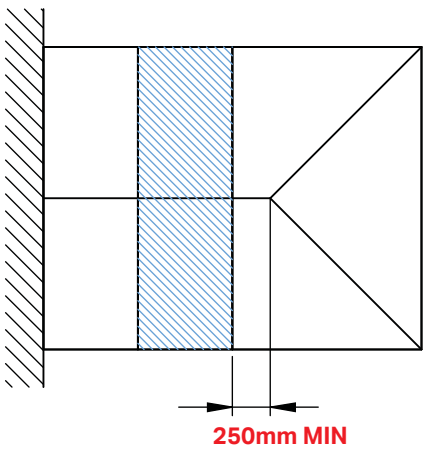


Glass panel one side.
Solid panel opposite.

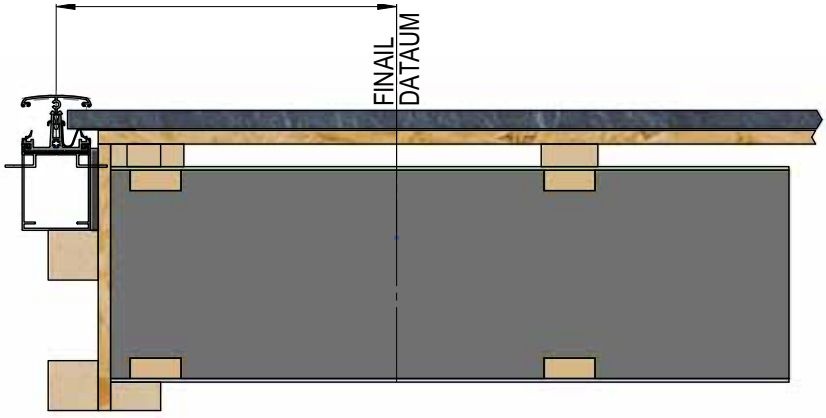




Glass from finial point



250mm MIN glazing bar to finial point

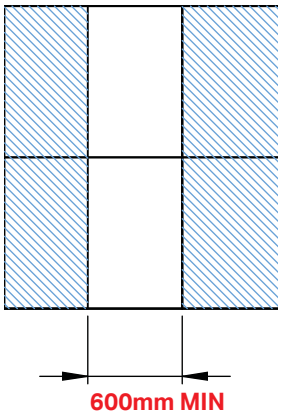


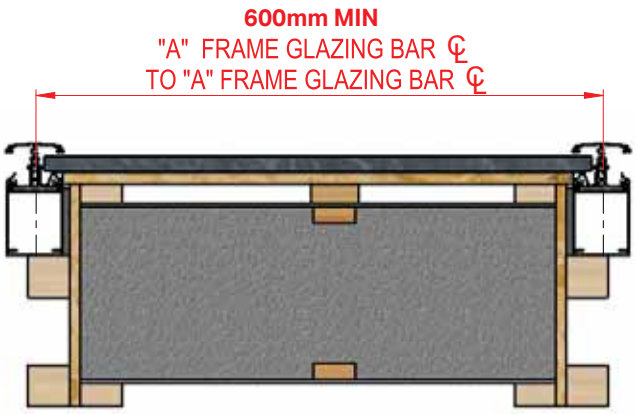
INTEGRATED GLAZING RULES

INTERNAL FRAME LINE ----------

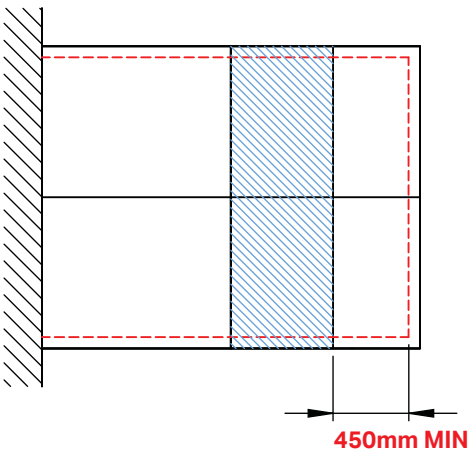
GLAZING PANEL MAX 980mm
(Bar centres 1000mm)

Solid panel between glass panels

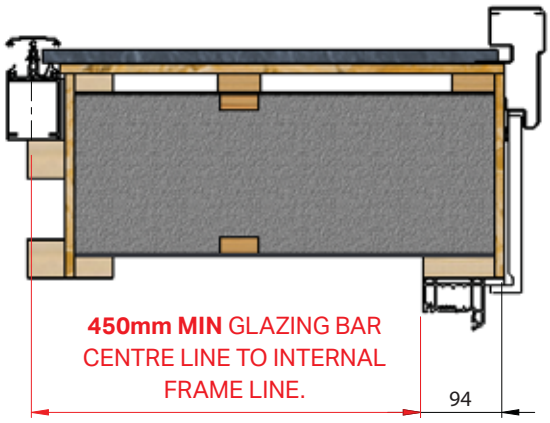




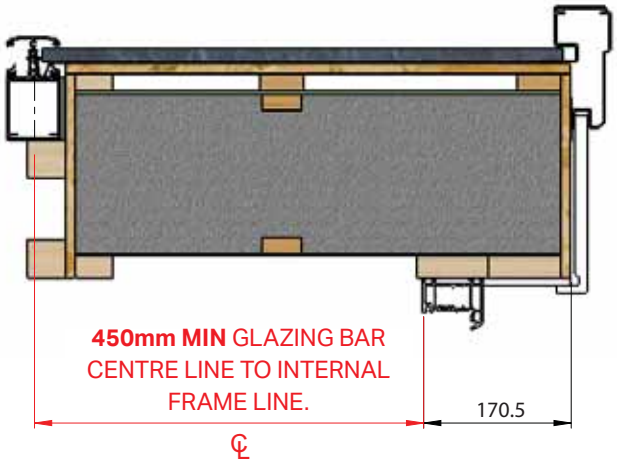
Glass from gable end and lean to gable ends



Gable roof with standard soffit



Gable roof with extended soffit



INTEGRATED GLAZING RULES

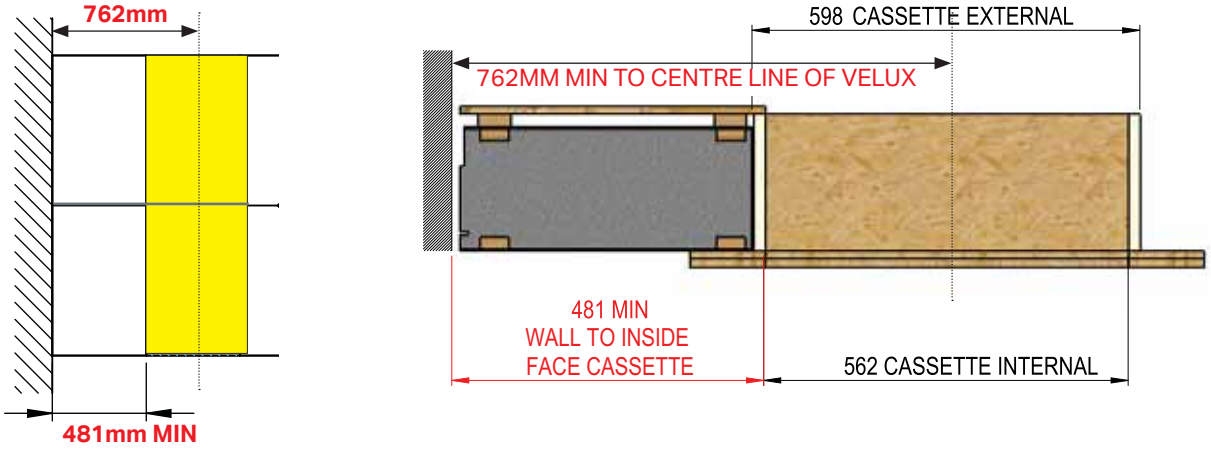
USING GLAZING AND CASSETTE

CASSETTE

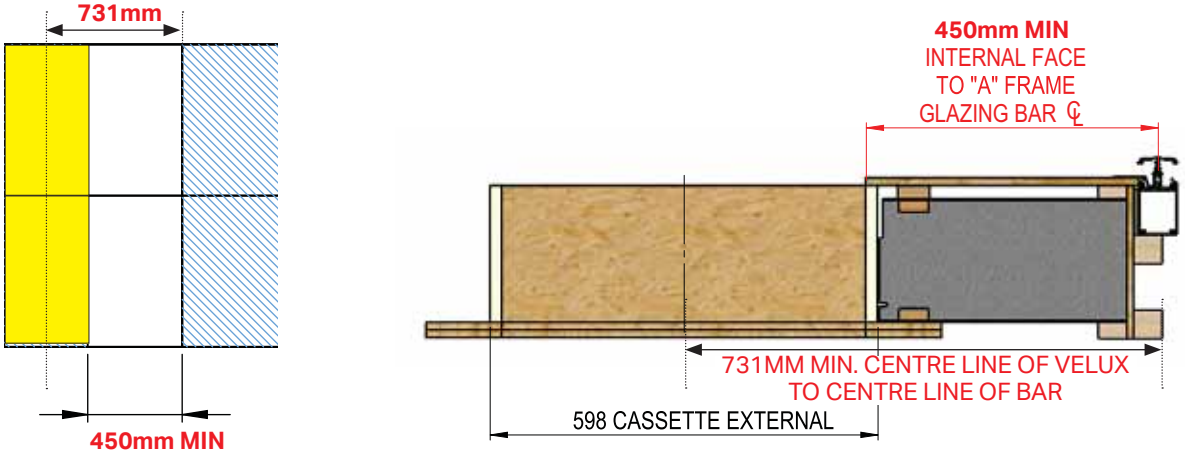
GLAZING PANEL MAX WIDTH 980mm (Bar centres 1000mm)

An alternative to fully glazed panels on Ultraroof380 is the option of Velux roof windows. These can be used to overcome issues in the design such as tapered box gutters or just as an alternative to a fully glazed panel. To cater for a Velux, Ultraroof380 uses a cassette in place of a panel to enable it to be fitted into a desired position. The following shows the rules around cassette positions on an Ultraroof380.

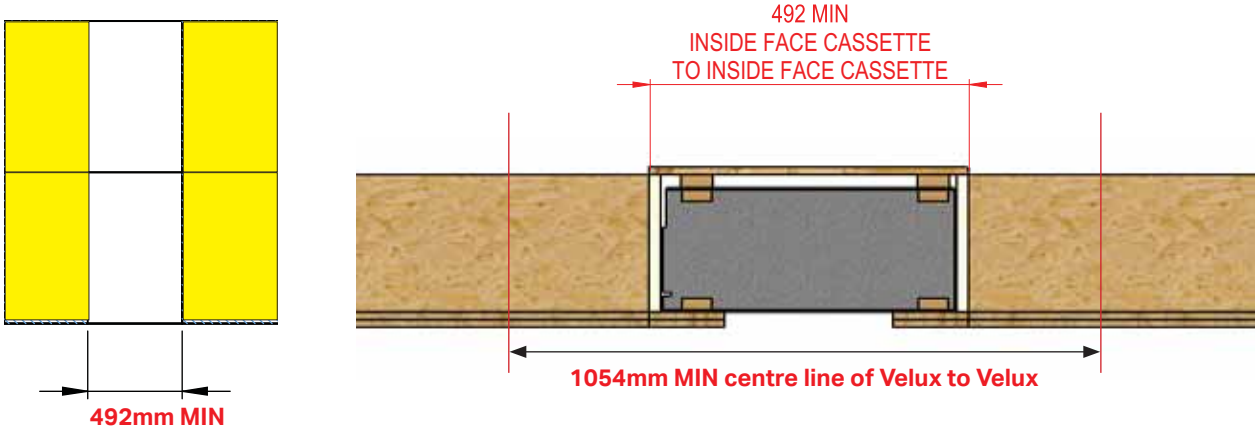
Solid panel at host wall. Cassette's adjacent



Solid panel between cassette and integrated glazing (Solid panel must be separate cassette and integrated glass)



Solid panel between cassettes (Cassettes must be separated with solid panels)



CHOOSING APPROPRIATE BOX GUTTER AND SUPPORT

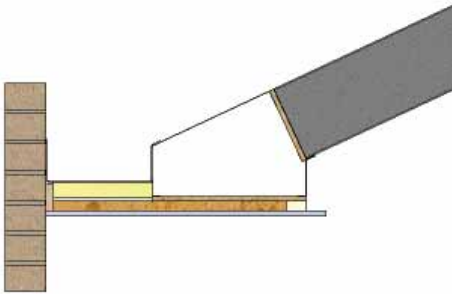
Some box gutters may need internal beam support (see page 37). If the customer wishes to change the box gutter type to avoid internal support, this may restrict the placement of the glass. On some roofs there may be a trade off between internal support and glass placement. Please read pages 49 - 58 and discuss this with the customer.

Use these pages to ensure you have a combination that works.
When replacing roofs with a box gutter see pages 85-90.

STANDARD BOX GUTTER

A

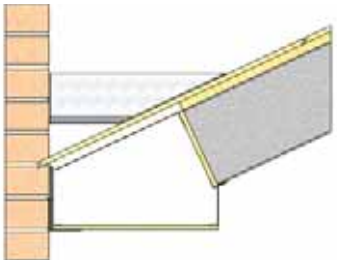
Up to 3200mm internal frame to internal frame. One additional support required located centrally (Gallows/brickwork pier). If doors or windows present support required on each side. Standard boxbeam needs structural support. When the box gutter exceeds 4m and additional support is required. See pages 49 - 58.



STANDARD TAPERED BOX GUTTER

B

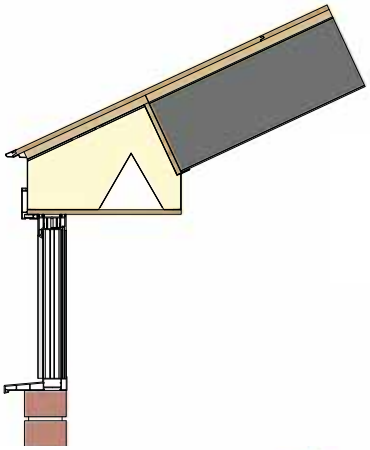
When a tapered box gutter is used the box beam is always supported by a wall mounted angle bracket that runs along the length of the beam. This instance does not require structural support.



BOX BEAM ON WINDOW FRAME

C

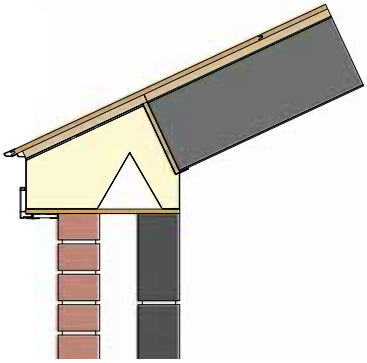
The box beam is always supported by the window frame that runs along the length of the beam. This instance does not require structural support. The beam requires support every 4m. In addition to the frames. This support may come from either a frame coupler or corner post.



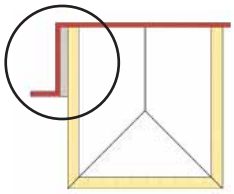
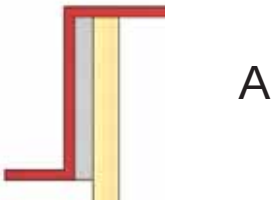
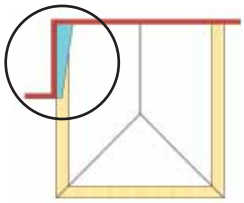
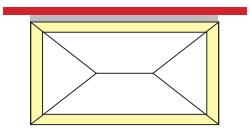
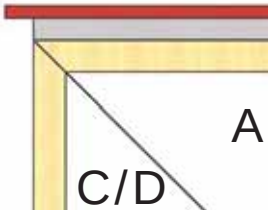
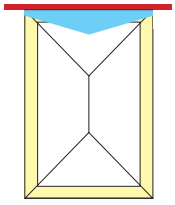
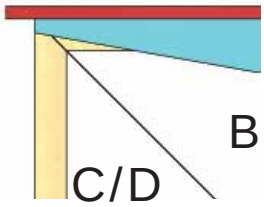
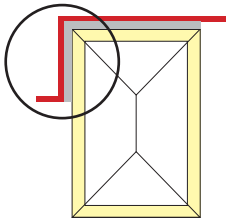
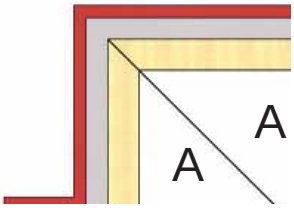
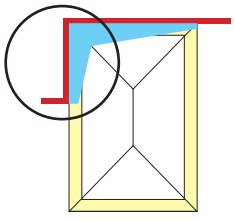
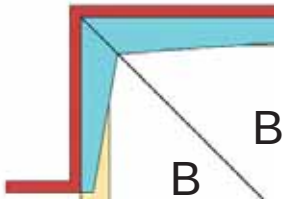
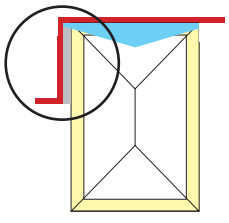
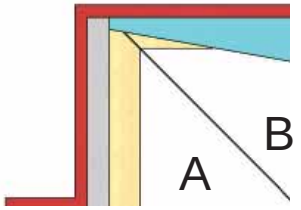
BOX BEAM ON BRICK WORK

D

The box beam is always supported by the brick work that runs along the length of the beam or window frames in openings in the brickwork. This instance does not require structural support.



CHOOSING APPROPRIATE BOX GUTTER AND SUPPORT

	Requires additional structural support (see options)	GLAZING top to bottom from ridge to box beam	VELUX dependent on roof size	Corner condition LEFT mirrored for right
	**NO**	**YES**	**YES**	
	**NO**	**NO**	**YES**	
	**YES**	**YES**	**YES**	
	**NO**	**B = NO** **C/D = YES**	**YES**	
	**YES**	**A = YES** **(off ridge side only)**	**YES**	
	**NO**	**NO**	**YES**	
	**YES**	**A = YES** **B = NO**	**YES**	

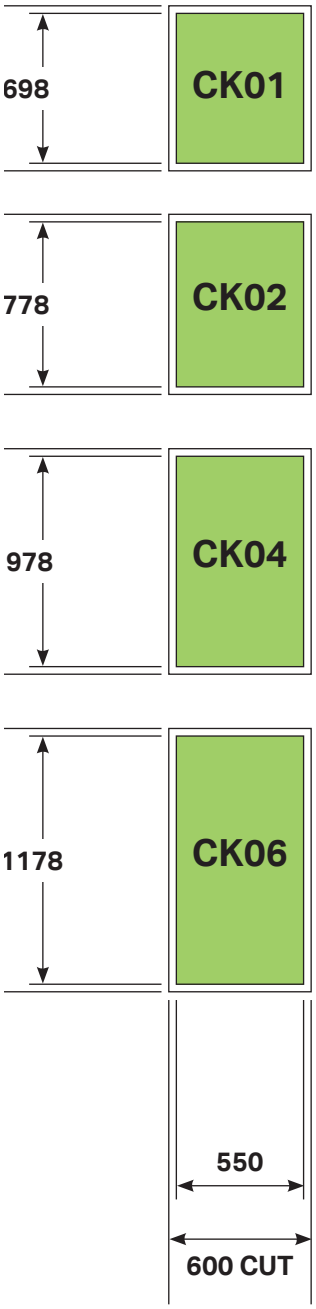
Host Wall Box Beam 265 box gutter Tapered box gutter

VELUX WINDOWS - ROOF WINDOW SIZE CODE

Ultraframe recommends Velux roof windows for use in Ultraroof380. The codes below eg. CK02 can be referenced in the Velux brochure and sourced in your local trade intermediary / merchant / specialist.

p39 - 44 explains which Velux window (and how many) can be inserted into your preferred extension style (rules are for each elevation) which is influenced by the roof's width, projection and loadings.

N.B. VELUX ROOF WINDOWS MUST NOT BE SPECIFIED ON LEAN-TO ROOFS UNDER 15° PITCH



PLEASE ENSURE YOU ORDER APPROPRIATE EDL FLASHING KIT (NOT SUPPLIED BY ULTRAFRAME)

GEORGIAN WINDOW OPTIONS

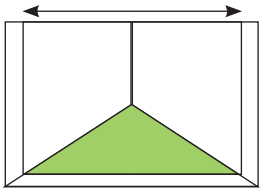
Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

VELUX®

One of this specified Velux can be used in this elevation

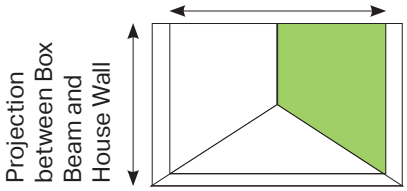
2 Two of this specified Velux can be used in this elevation

Width between Box Beam



Width between Box Beam

Projection between Box Beam and House Wall



GEORGIAN FRONT ROOF WINDOW OPTIONS

WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
		PK25	CK01	CK02	CK04	CK06
3m	15° - 45°					
3.5m	15° - 45°					
4m	15°					
	20°					
	25°					
	30°					
	35°					
	40°					
	45°					
4.5m	15°					
	20°					
	25°					
	30°					
	35°					
	40°					
	45°					
5m	15°					
	20°					
	25°					
	30°					
	35°		2			
	40°		2	2		
	45°		2	2	2	
5.5m	15°		2	2		
	20°		2	2		
	25°		2	2		

GEORGIAN SIDE ROOF WINDOW OPTIONS

PROJEC-TION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	3m	15° - 45°					
3m	3m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	3m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
4m	3m	15°					
		20°		2			
		25°		2			
		30°		2			
		35°		2			
		40°		2			
		45°		2	2		
4.5m	3m	15°		2	2		
		20°		2	2		
		25°		2	2		
		30°		2	2	2	
		35°		2	2	2	
		40°		2	2	2	
		45°		2	2	2	
5m	3m	15°		2	2		
		20°		2	2		
		25°		2	2		
		30°		2	2	2	
		35°		2	2	2	
		40°		2	2	2	2
		45°		2	2	2	2

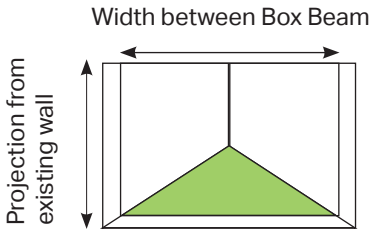
GEORGIAN WINDOW OPTIONS

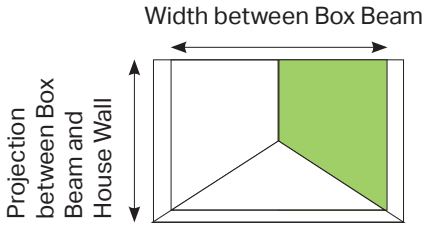
Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

VELUX®

One of this specified Velux can be used in this elevation

2 Two of this specified Velux can be used in this elevation





GEORGIAN SIDE ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	3.5m	15° - 45°					
3m	3.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	3.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
4m	3.5m	15°					
		20°		2			
		25°		2			
		30°		2	2		
		35°		2	2		
		40°		2	2	2	
		45°		2	2	2	2
4.5m	3.5m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
5m	3.5m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

GEORGIAN SIDE ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	4m	15° - 45°					
3m	4m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	4m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
4m	4m	15°					
		20°		2			
		25°		2			
		30°		2	2		
		35°		2	2		
		40°		2	2	2	
		45°		2	2	2	2
4.5m	4m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
5m	4m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

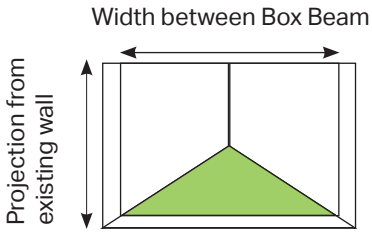
GEORGIAN WINDOW OPTIONS

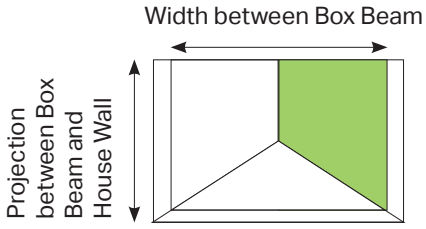
Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

VELUX®

One of this specified Velux can be used in this elevation

2 Two of this specified Velux can be used in this elevation





GEORGIAN SIDE ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	4.5m	15° - 45°					
3m	4.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	4.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
4m	4.5m	15°					
		20°		2			
		25°		2			
		30°		2	2		
		35°		2	2		
		40°		2	2	2	
		45°		2	2	2	2
4.5m	4.5m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
5m	4.5m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

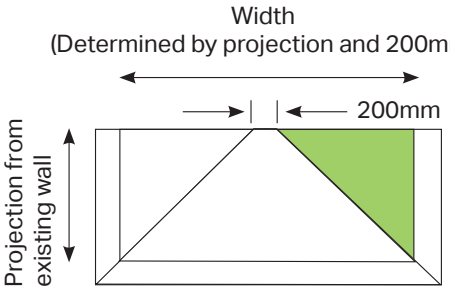
GEORGIAN SIDE ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	5m	15° - 45°					
3m	5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
4m	5m	15°					
		20°		2			
		25°		2			
		30°		2	2		
		35°		2	2		
		40°		2	2	2	
		45°		2	2	2	2
4.5m	5m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
5m	5m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

HIPPED LEAN TO WINDOW OPTIONS

Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

One of this specified Velux can be used in this elevation

2 Two of this specified Velux can be used in this elevation



HIPPED LEAN-TO SIDE ROOF WINDOW OPTIONS							
PROJEC-TION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	-	15° - 45°					
3m	-	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.2m	-	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
3.5m	-	15°					
		20°					
		45°					

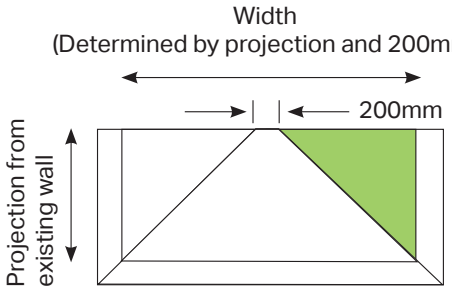
HIPPED LEAN-TO SIDE ROOF WINDOW OPTIONS							
PROJEC-TION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	5060mm	15°					
		20°					
		25°					
		30°					
		35°		2	2		
		40°		2	2		
		45°		2	2	2	
2.5m	5.5m	15°		2			
		20°		2	2		
		25°		2	2		
		30°		2	2		
		35°		2	2	2	
		40°		2	2	2	2
		45°		2	2	2	2
2.5m	6m	15°		2	2	2	
		20°		2	2	2	
		25°		2	2	2	
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
2.5m	6.5m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
2.5m	7m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

HIPPED LEAN TO WINDOW OPTIONS

Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

One of this specified Velux can be used in this elevation

2 Two of this specified Velux can be used in this elevation



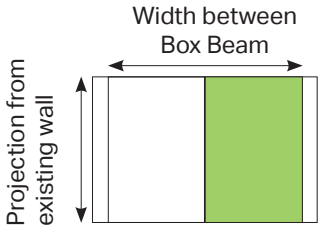
HIPPED LEAN-TO SIDE ROOF WINDOW OPTIONS								
PROJEC-TION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE					
			PK25	CK01	CK02	CK04	CK06
3m	6060mm	15°		2	2	2	
		20°		2	2	2	
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
3m	6.5m	15° - 45°		2	2	2	2
3m	7m	15°		2	2	2	2
		20°		2	2	2	2
		45°		2	2	2	2
3.2m	6464mm	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
3.2m	7m	15° - 45°		2	2	2	2
3.2m	7.5m	15°		2	2	2	2
		20°		2	2	2	2
		45°		2	2	2	2
3.5m	7060mm	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
3.5m	7.5m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
3.5m	8m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2

GABLE FRONT ROOF WINDOW OPTIONS

Chart below for single and double window options only for more options check with U-design or Ultraframe - N.B. ROOF WINDOW OPTIONS MUST BE CHECKED BY U-DESIGN

One of this specified Velux can be used in this elevation

2 Two of this specified Velux can be used in this elevation



GABLE FRONT ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
2.5m	2.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
2.5m	3m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
2.5m	3.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
2.5m	4m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					
2.5m	4.5m	15°					
		20°					
		25°					
		30°					
		35°					
		40°					
		45°					

GABLE FRONT ROOF WINDOW OPTIONS							
PROJECTION	WIDTH	ROOF PITCH	VELUX OPTION AVAILABLE				
			PK25	CK01	CK02	CK04	CK06
3m	2.5m	15°					
		20°					
		25°					
		30°		2			
		35°		2	2		
		40°		2	2		
		45°		2	2	2	
3m	3m	15°		2	2		
		20°		2	2		
		25°		2	2		
		30°		2	2	2	
		35°		2	2	2	
		40°		2	2	2	2
		45°		2	2	2	2
3m	3.5m	15°		2	2	2	
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
3m	4m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2
3m	4.5m	15°		2	2	2	2
		20°		2	2	2	2
		25°		2	2	2	2
		30°		2	2	2	2
		35°		2	2	2	2
		40°		2	2	2	2
		45°		2	2	2	2

MAXIMUM ROOF SIZES AND STRUCTURAL PERFORMANCE

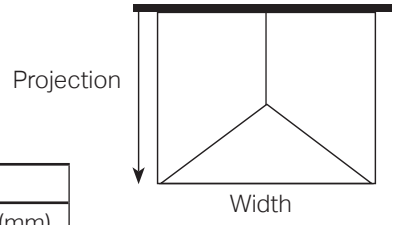
All sizes relate to the internal window frame consistent with conservatory standard set out. The maximum unsupported beam span is 4m. Bi-folding doors MUST be bottom supported and not top hung.

The jointing of box beams (see p75 - 76) allow for larger/wider roofs providing appropriate structural support is in place. Always check with Ultraframe technical team for guidance.

Victorian/Gable/Georgian/Edwardian

	Pitch 15° - 21°		Pitch 22° - 29°		Pitch 30° - 40°	
	Width (mm)	Projection (mm)	Width (mm)	Projection (mm)	Width (mm)	Projection (mm)
Max Size	6500	5000	6700	5000	6500	5000
At Loadings	Wind 1.35kN	Snow 0.7kN	Wind 1.5kN	Snow 0.89kN	Wind 1.65kN	Snow 0.8kN

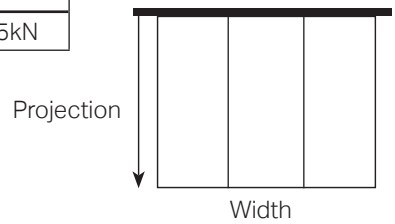
Min ridge length = 200mm



Lean-to

	Pitch 12.5° - 29°		Pitch 30° - 40°	
	Width (mm)	Projection (mm)	Width (mm)	Projection (mm)
Max Size	6780	4000	6780	3700
At Loadings	Wind 1.4kN	Snow 0.75kN	Wind 1.15kN	Snow 0.75kN

Min half ridge length = 200mm



Hipped Lean-to

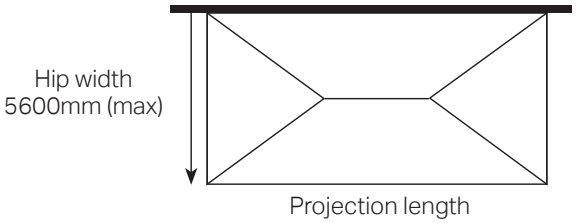
	Pitch 15° - 29°		Pitch 29° - 40°	
	Width (mm)	Projection (mm)	Width (mm)	Projection (mm)
Max Size	6780	3500	6780	3200
At Loadings	Wind 1.4kN	Snow 1.1kN	Wind 1.3kN	Snow 0.6kN

Min half ridge length on a single hip = 200mm
Min half ridge length on a double hip = 200mm

Double Hipped Georgian

	Pitch 15° - 29°		Pitch 30° - 40°	
	Hip Width (mm)	Projection Length (mm)	Width (mm)	Projection (mm)
Max Size	5600	No limits	4300	No limits
At Loadings	Wind 1.35kN	Snow 0.7kN	Wind 1.5kN	Snow 0.89kN

Min ridge length on a double hip = 400mm

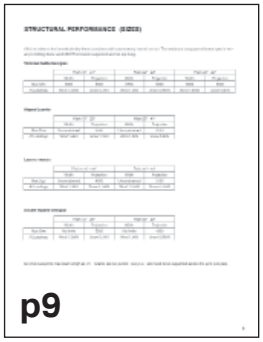


USING THIS GUIDE TO DECIDE ON STRUCTURAL LOADS - WORKED EXAMPLE

The only accurate way to specify Ultraroof380 is using U-Design software.
Either use a licensed copy of the software or send a sketch to Ultraframe or one of its approved trade intermediaries / distributers, where the information will be input on your behalf.

Worked Example

A 4m x 4m* Georgian conservatory at 25 degree is being re-roofed at the rear of a semi-detached property in the small market town of Clitheroe. The homeowner wants to know if they can have Velux roof windows and what size and how many.



Turn to page 45, the correct page for the style of extension (in this case Georgian) and use the chart that shows the pitch range (defined as 25° for this project) .As the project is defined as 4m x 4m, look up the loading for this size which shows Ultraroof380 can accept a load of 1.5kN/m2 from wind and 0.89kN/m2 from snow.

Now check how high above sea level the location is (Google search or try www.maps-streetview.com) – in this case it's 76m elevation above the sea level. As outlined in the worked example in red above, the location is in a small town (not the country).

Use figure 1, page 48 to check the wind speed at the location (in this case its 23 m/s which translates on table 1 to 0.68 kN/m²). From figure 2, page 46 check the snow load at the location (which is 0.6kN/m²).

Both figures at the actual site are within the design parameters of the Ultraroof380 system, so it is OK to proceed with the project with no amendments.

And finally, to determine the number and size of Velux roof windows that can fit into this extension, turn to pages 39 - 44 for front elevation and side elevation to look up the vent opening sizes that can be configured into each elevation.

	Loads at postcode (kN/m²)	Max System Load (kN/m²)	System load MUST EQUAL or EXCEED post code load
SNOW	0.60	0.89	✓
WIND	0.68	1.15	✓

If you are unable to achieve the desired size for your Ultraroof380 project please contact Ultraframe's Technical Support Team for advice on 01200 452 918

STRUCTURAL SPECIFICATION GUIDELINES

The size limitation for Ultraroof380 is limited by the projects geographic location. The location of each project will determine the imposed loads on the finished structure (both wind and snow loadings will have an impact). The size of these loads can be obtained from U-design software as the roof is being specified. U-design uses historic weather datafiles which from a postcode can provide both wind and snow loadings. If you do not have access to U-design the maps will help ***guide*** you to the approximate loadings. This will not give you exact values but ones likely to be the worst case for your location.

If you are unable to achieve the desired size for your Ultraroof380 project please contact Ultraframe's Technical Support Team for advice on 01200 452 918.

The Map in figure 1 (overleaf) shows the fundamental basic wind velocity map in vb m/s. Find your approximate location and determine wind speed.
Now you need the height above sea level in metres - this information could be obtained via Ordnance Survey or Google Maps. Decide if your site is town or country.

Now use Table 1 Below to establish the load in kN/m2 and finally, check with figure 2 to see the snow load.

Table 1 Max wind Load EC1-4-NA - q(p) kN/m2

	Altitude	21.5	22	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28	28.5	29	29.5
TOWN	50	0.55	0.57	0.60	0.62	0.65	0.68	0.71	0.74	0.77	0.80	0.83	0.86	0.89	0.92	0.96	0.99	1.03
	100	0.60	0.63	0.66	0.68	0.72	0.75	0.78	0.81	0.84	0.88	0.91	0.94	0.98	1.02	1.05	1.09	1.13
	150	0.65	0.68	0.72	0.75	0.78	0.82	0.85	0.88	0.92	0.96	0.99	1.03	1.07	1.11	1.15	1.19	1.23
	200	0.71	0.75	0.78	0.82	0.85	0.89	0.92	0.96	1.00	1.04	1.08	1.12	1.17	1.21	1.25	1.30	1.34
	250	0.77	0.81	0.85	0.88	0.92	0.96	1.00	1.04	1.09	1.13	1.17	1.22	1.26	1.31	1.36	1.41	1.46
	300	0.84	0.88	0.92	0.96	1.00	1.04	1.09	1.13	1.18	1.22	1.27	1.32	1.37	1.42	1.47	1.52	1.57
COUNTRY	50	0.63	0.66	0.69	0.72	0.75	0.78	0.81	0.85	0.88	0.92	0.95	0.99	1.03	1.06	1.10	1.14	1.18
	100	0.69	0.72	0.75	0.79	0.82	0.86	0.89	0.93	0.97	1.01	1.05	1.08	1.13	1.17	1.21	1.25	1.30
	150	0.75	0.79	0.82	0.86	0.90	0.94	0.98	1.02	1.06	1.10	1.14	1.19	1.23	1.28	1.32	1.37	1.42
	200	0.82	0.86	0.90	0.94	0.98	1.02	1.06	1.11	1.15	1.20	1.24	1.29	1.34	1.39	1.44	1.49	1.54
	250	0.89	0.93	0.97	1.02	1.06	1.11	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.51	1.56	1.62	1.67
	300	0.96	1.01	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.41	1.46	1.52	1.57	1.63	1.69	1.75	1.81

STRUCTURAL SPECIFICATION GUIDELINES

Figure 1
Fundamental basic wind velocity, vb,map in m/s

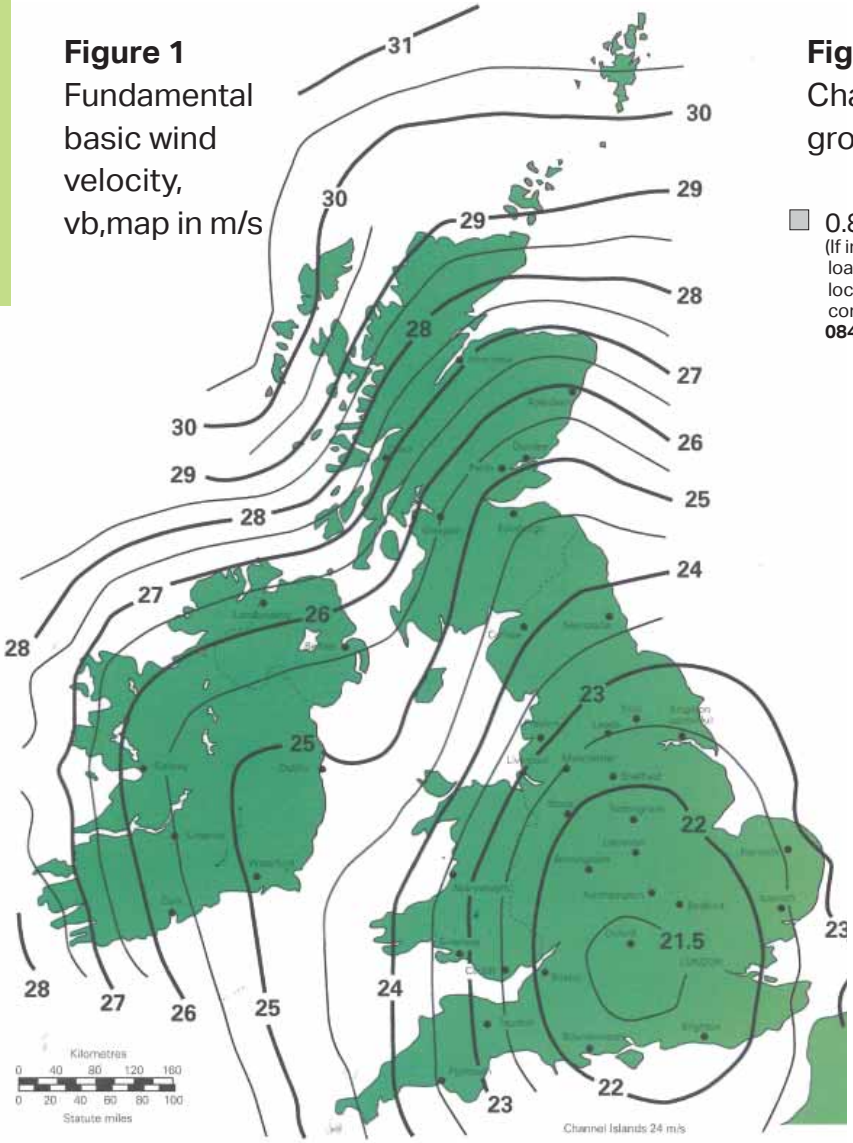


Figure 2
Characteristic ground snow load

0.8 AREA.
(If in doubt about loadings at your location, please contact us on **0843 208 6930**

* SOURCE: Euro Codes

Remainder of UK = 0.6

IMPORTANT - NOTE 1

The installer is responsible for ensuring that where Ultraroof380 is supported by means such as timber frame walls, the structure provides enough lateral support and resistance to wind uplift. Further guidance can be obtained through this guides technical documentation. Ultraframe cannot be responsible for the structural adequacy of any existing building work used as part of an overall conversion. While assistance is provided, ultimate responsibility to secure Building Regulations lies with the retail installer.

IF IN DOUBT ABOUT STRUCTURAL COMPLIANCE, PLEASE CONSULT LABC, JHAI OR A STRUCTURAL ENGINEER

IMPORTANT - NOTE 2

This guide is intended to provide indicative information and to help you understand the design principles and applicable loadings. U-Design is the final arbiter on price and specification decisions.

IMPORTANT - NOTE 3

The Ultraroof380 components have been designed and manufactured to meet the specification of each individual job. Any significant on site modifications particularly relating to the repositioning of any structural members will invalidate the product's warranty and compromise the structure's integrity. If adjustments are required due to site conditions please consult Ultraframe.

STRUCTURAL SUPPORT & WHEN IT IS REQUIRED

Structural support is a vital consideration when designing the Ultraroof380. This document highlights the many variations and options available when adding structural support and crucially determining when and how it should be used. Support is needed in order to create roofs of various sizes, allow for various obstacles/intrusions and to fit into its designed space effectively.

If there is nothing in this document that relates to your situation then please contact our team and we can assist in working out a solution.

Ultraroof380 has a series of styles and shapes that have to be supported by the box beam which in turn must be supported by window frames or connections to the host wall. When a beam is in a position where it can no longer support itself, extra structural support is needed.

The instances where beams need structural support are as follows:

BEAM SUPPORT

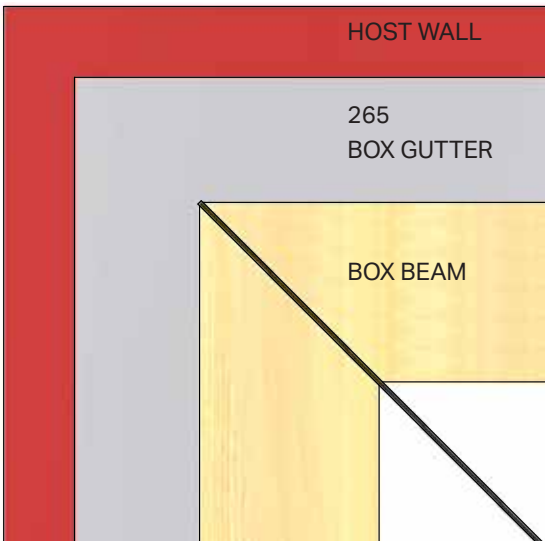
A beam must be supported at both ends either by frames or masonry. The maximum unsupported span of a beam is 4m. See pages 50 - 58 for various support methods.

4000mm
(MAX UNSUPPORTED)

A BOX BEAM DOES NOT CONTACT THE HOST WALL

When a beam is not supported by the host wall via a bracket of any kind, then the beam needs additional structural support.

In this example, the box beam does not interact with the host wall and needs structural support from below.

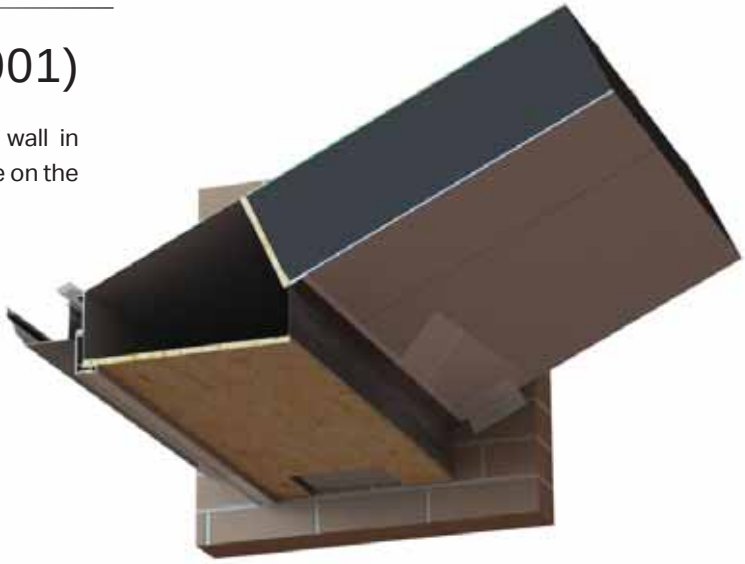


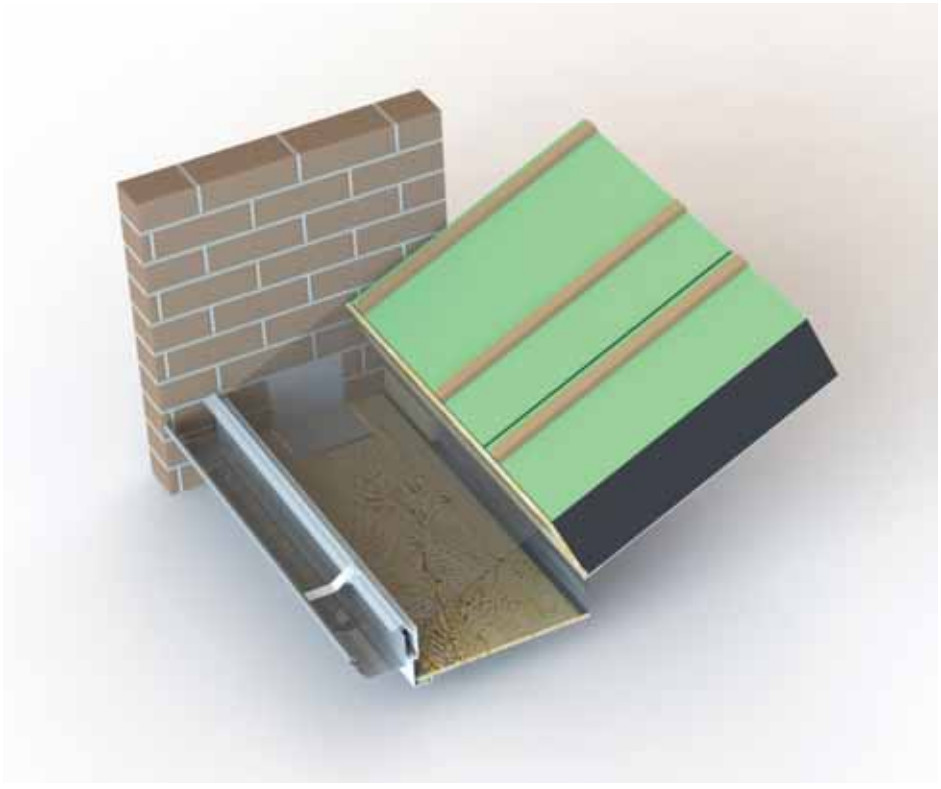
STANDARD SUPPORT FOR STANDARD BOX BEAM

BOX BEAM WALL BRACKET SUPPORT (BOX BEAM END ABUTTING A WALL)

(NRW001)

First box beam brackets are fixed to the host wall in position. Beams with pre cut openings then locate on the positioned brackets.





Cutaway section showing wall bracket position for standard soffit.

STANDARD SUPPORT FOR TAPERED BOXGUTTERS

When a tapered box gutter is used, the standard support for the beam is an angle bracket that is fixed to the house wall running along the length of the beam. Tapered box gutters use this support in all instances and do not require any additional structural support. (Unless being used to replace existing box gutters, see page 85-90)

BOX BEAM ANGLED WALL BRACKET

(RRS---/8)

90^{0} angle bracket is fixed to the wall to accommodate the full length of the box beam. This support acts as structural support, no other support required in any instance (along the length of this beam).

PANEL ANGLED WALL BRACKETS

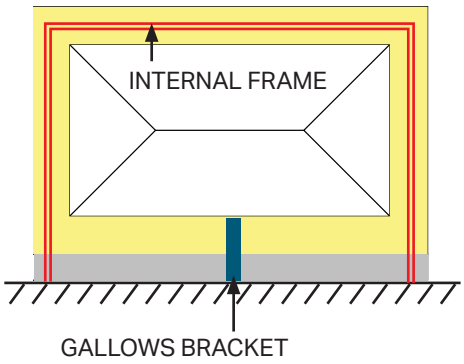
(RRS---/7)

Variable angled bracket is fixed to the wall to accommodate the full length of the panel being fitted to the wall. This support replaces the beam and acts as structural support, no other support required in any instance (along the length of the panel).
Only used for intrusions.

BOX BEAM STRUCTURAL SUPPORT FOR 265MM BOX GUTTER

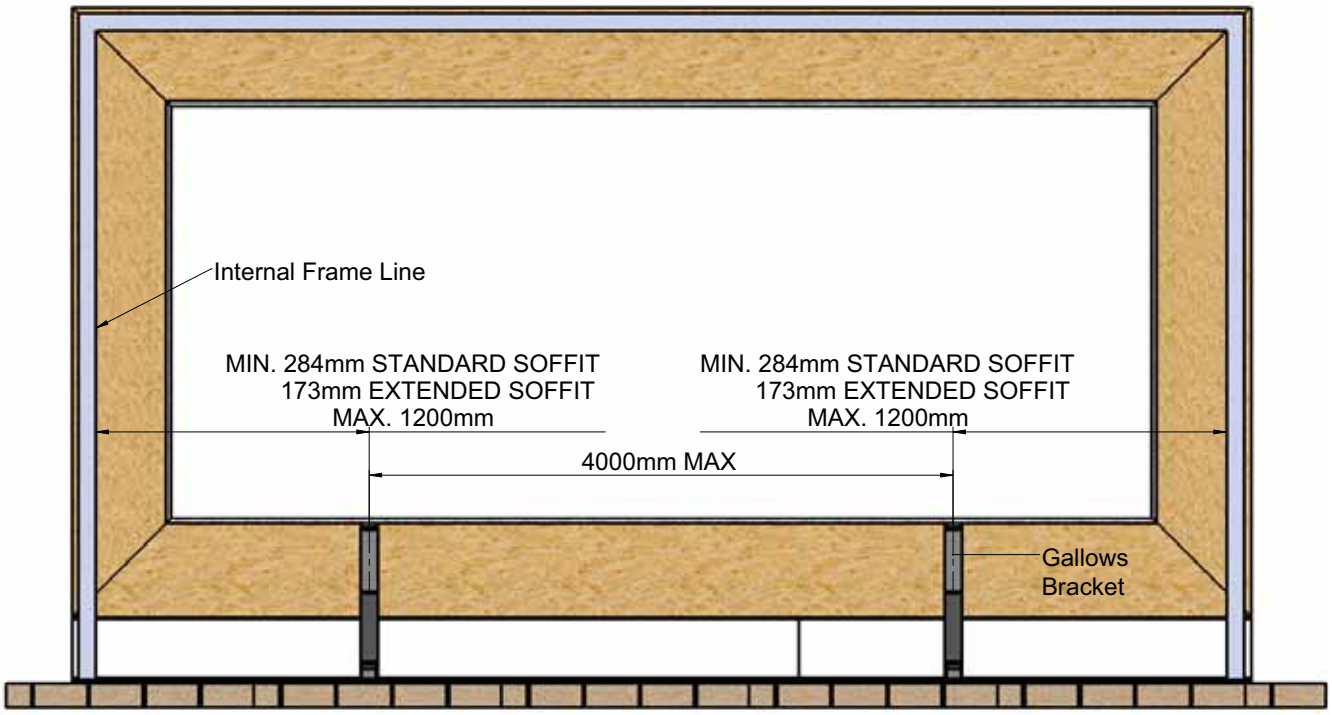
The gallows brackets can be arranged in a corner situation when both beams need to be supported. The bracket can be clad in plasterboard. Full width of box beam requires support gallows bracket 645mm from host wall to end of bracket.

STRUCTURAL SUPPORT IS REQUIRED FOR BOX BEAM WHEN ADJACENT TO A 265MM BOXGUTTER



All box beams that support a 265mm fabricated box gutter must be supported by means of gallows brackets, posts or brick piers. Min/max. dimensions from internal frame stated below.

Up to 3200mm internal frame to internal frame
1 - centrally located gallows bracket post or pier
or
2 - one either side of door or window opening, above 3200mm internal frame to internal frame (as below).



NOTE: Against full height vertical walls, a tapered box gutter would be recommended.

NOTE: Integratred glass units can only be specified if using 265mm box gutter.
Velux must be used if tapered box gutter.

STRUCTURAL SUPPORT - GALLOWS BRACKET - BUNGALOW SITUATION

The aluminium gallows bracket provides support to box beams. It covers both standard situations and extended soffit roofs. Ordered as standard size it covers the width of the box beam and box gutter. Extended gallows brackets can also be ordered.

OPTION 1

Box beam supported on standard gallows bracket shown under a bungalow soffit. To maximum soffit width of 100mm.

OPTION 2

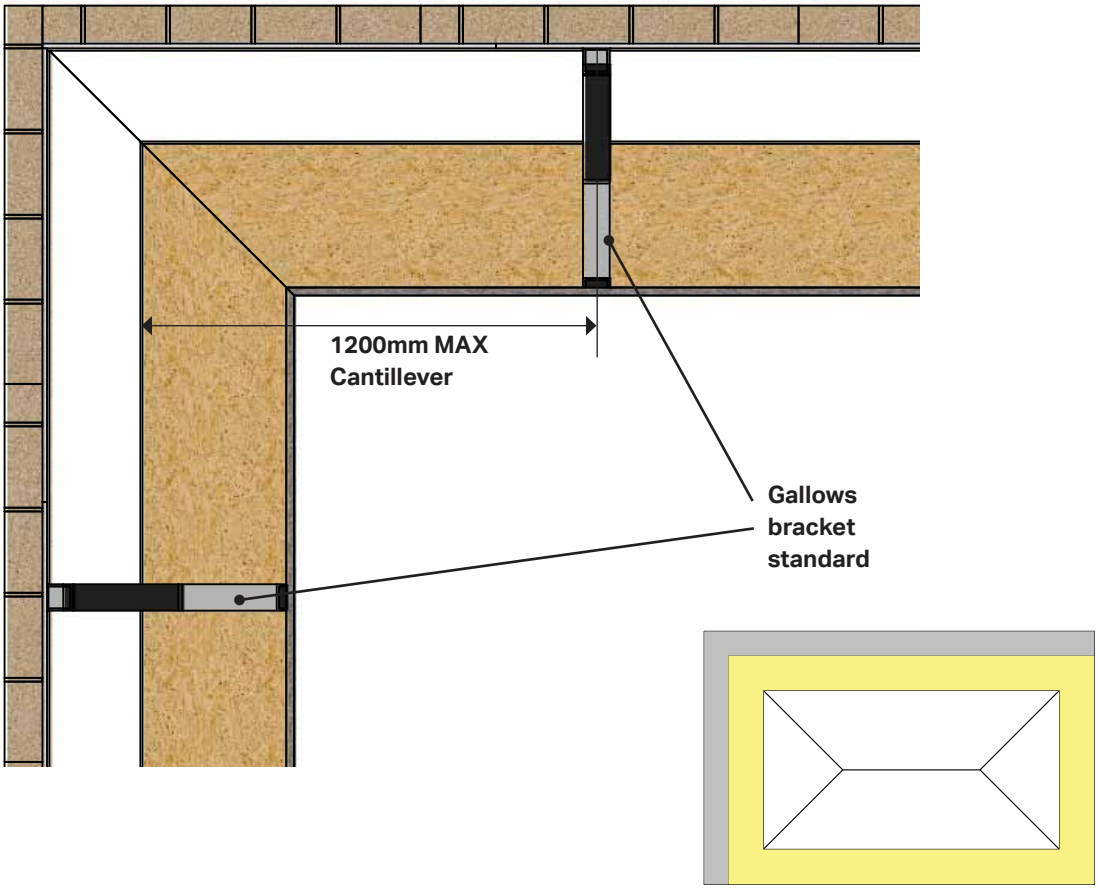
The standard bracket may be cut back 100mm to suit fitting to a vertical wall (end cap provided).

OPTION 3

The bracket can be made to a bespoke size to accommodate for different size situations, but it has its limits. It can be made any size within 645mm – 1195mm. The largest soffit size a gallows bracket can cover is 550mm, anything larger then a custom bracket has to be made to suit. The bracket must cover the full depth of the beam and box gutter and any soffit (if applicable).

GALLOWS BRACKET - CORNER

The gallows brackets can be arranged in a corner situation when both beams need to be supported. The bracket can be clad in plasterboard. Full width of box beam requires support gallows bracket 645mm from host wall to end of bracket (see page 53).

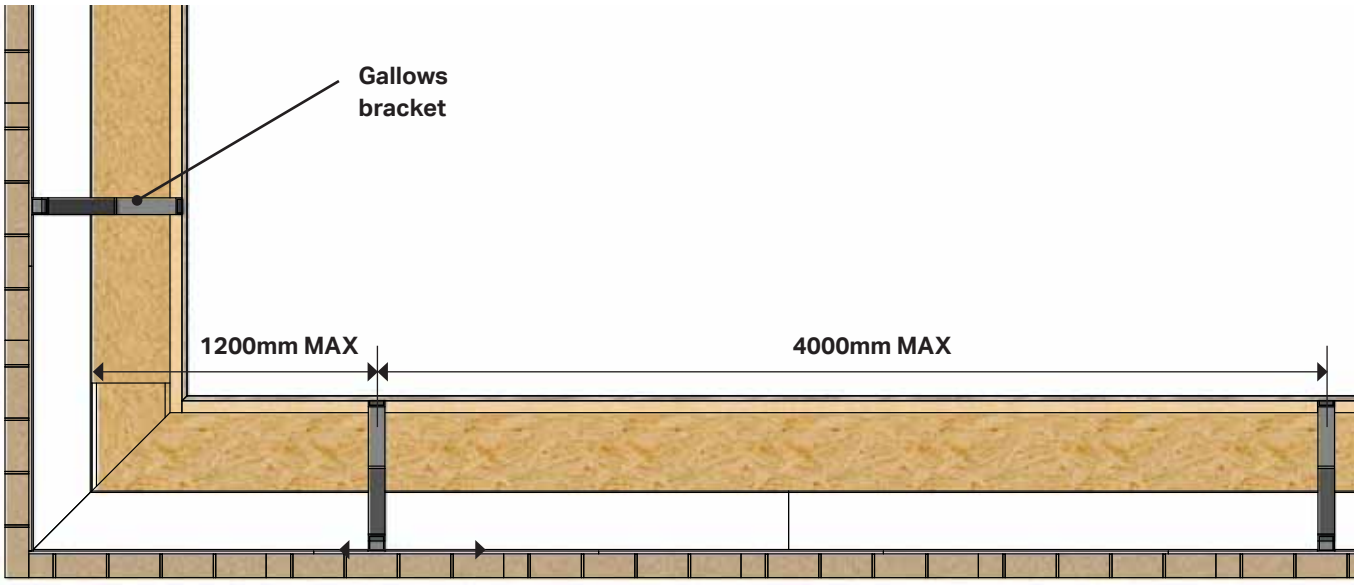


RULES

- Maximum cantilever of 1200mm
- Gallows bracket must cover full width (box beam and box gutter width 645mm) plus any soffit on a bungalow (max bungalow soffit size 550mm).

GALLOWS BRACKET - INTERMEDIATE

The distance between gallows brackets and other supports should not exceed 4,000mm.

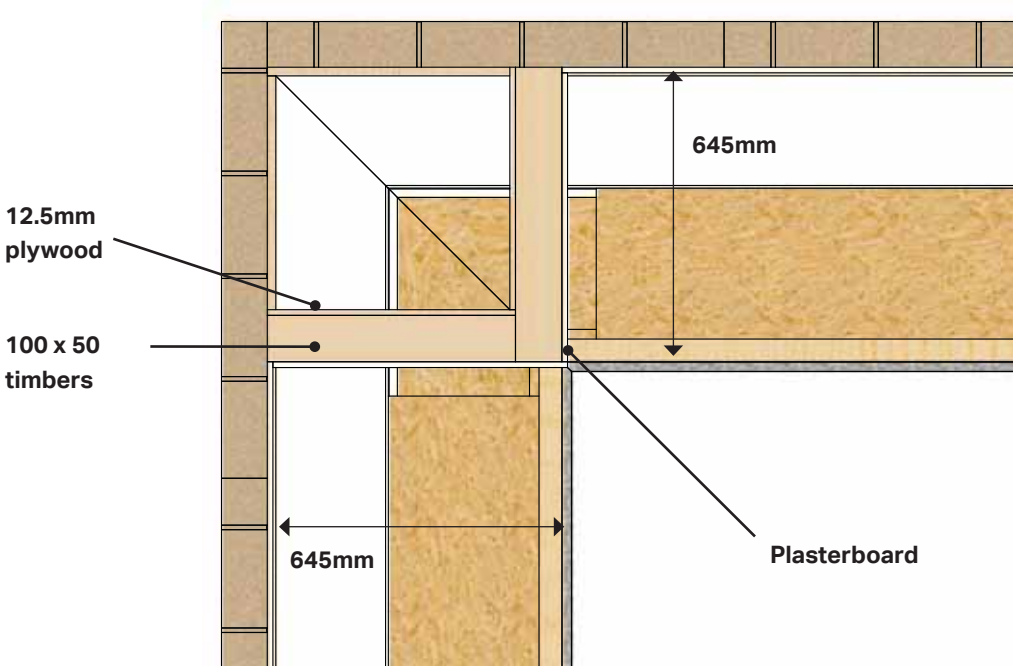


STRUCTURAL SUPPORT - TIMBER STUD WORK

The simple and most available method of support is timber stud walling. It is quick to put up and gives a good finish.

TIMBER COLUMN SUPPORT

The timber column is 645x645mm, boarded internally with 12.5mm plywood and then plaster boarded on the exterior. Its compact structure makes it a neat finish in the corner of the room while providing structural support.



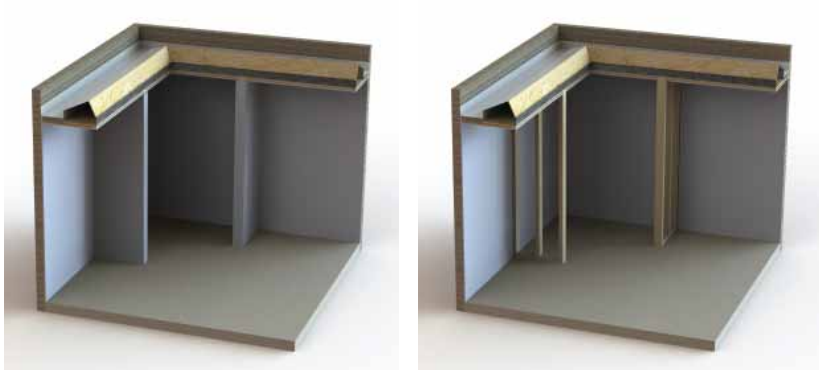
RULES

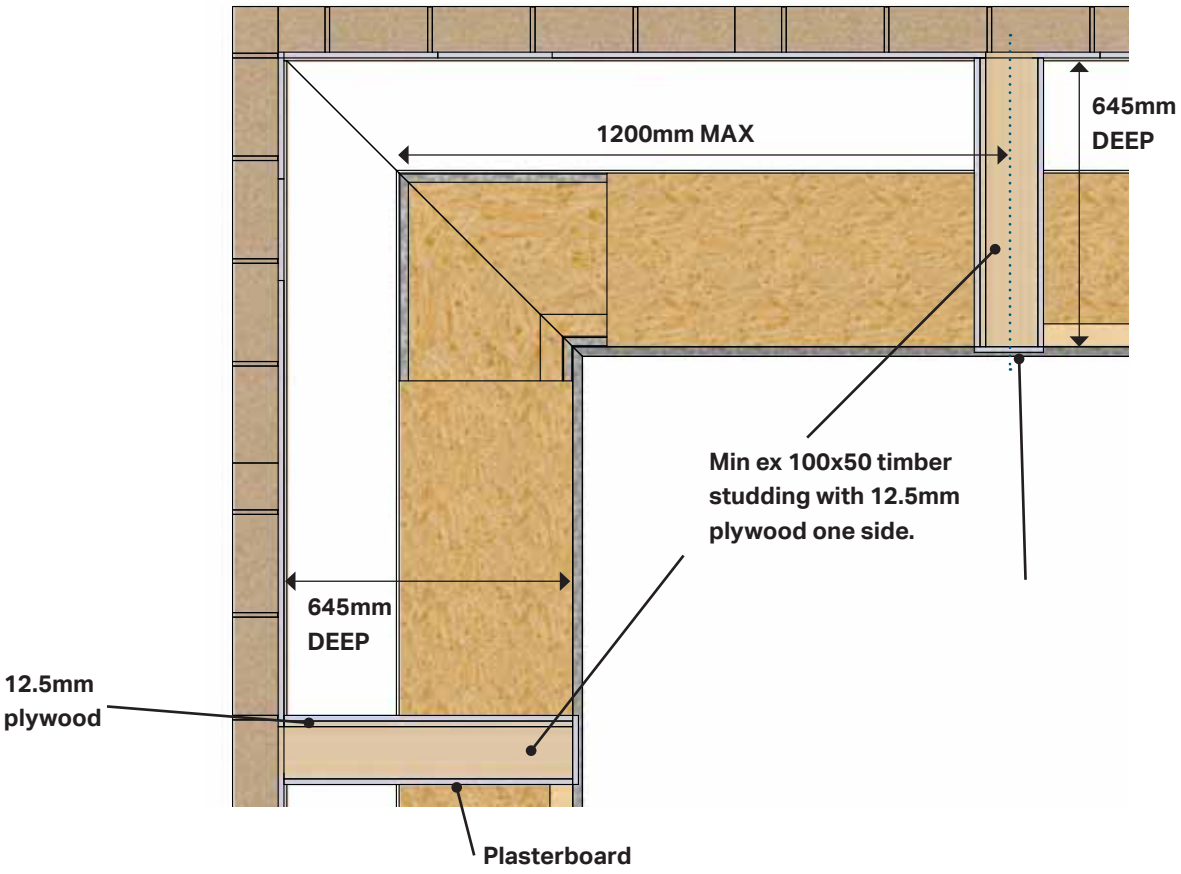
- Stud wall must cover full width (box beam and box gutter width 645mm)

STRUCTURAL SUPPORT - TIMBER STUD WORK

TIMBER CORNER SUPPORT

The timber corner supports are simple stud walls, 645mm deep that support the box beam. Each wall is boarded with 12.5mm plywood and then finished with plasterboard to its exterior.





RULES

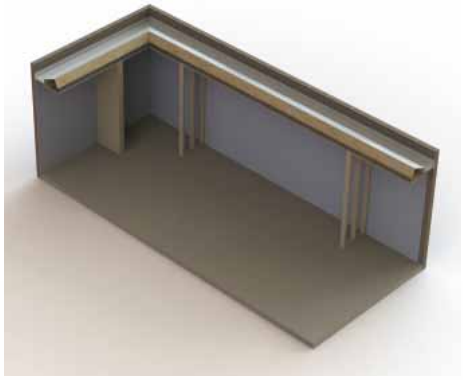
- Maximum cantilever 1,200mm
- Stud wall must cover full width (box beam and box gutter width 645mm)

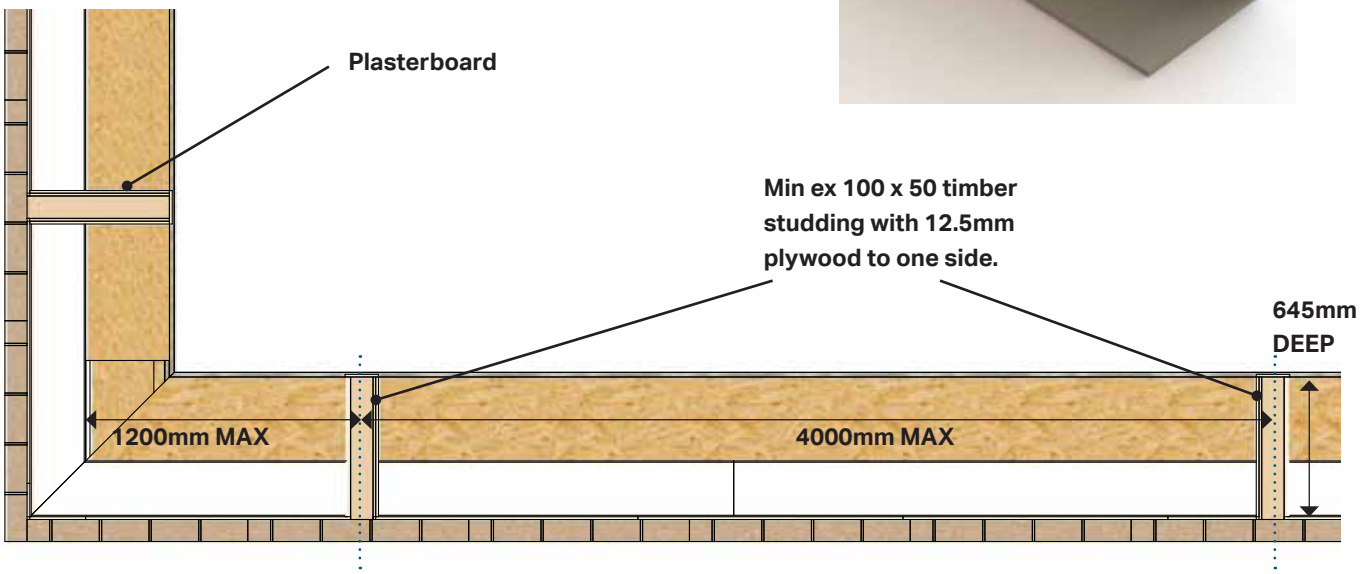
STRUCTURAL SUPPORT - TIMBER STUD WORK - INTERMEDIATE

The simple and most available method of support is timber stud walling. It is quick to put up and gives a good finish when using plasterboard.

TIMBER INTERMEDIATE SUPPORT

Intermediate supports are appropriate when the box beam extends longer that 4000mm along its length before reaching the next structural support at a corner. An intermediate support is placed. A maximum of 4000mm from the previous support to carry the box beam.



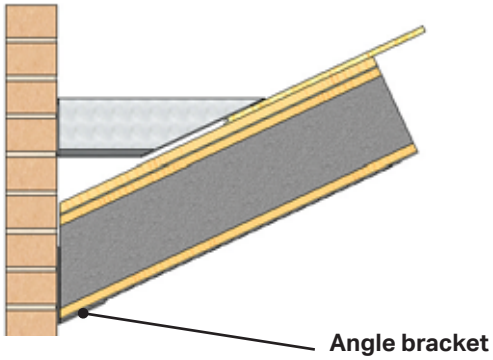


INTRUSIONS

In some cases a roof may have to accommodate intrusions into the footprint of the roof, these are such things as chimney breasts. In this situation, the panel is adapted around the intrusion and a tapered box gutter is used. This creates many configurations of box gutters that allow water to drain away effectively.

INTRUSION TAPERED BOX GUTTER

The panel is always supported by a wall mounted angle bracket that runs along the length of the intrusion. This instance does not require any additional structural support.

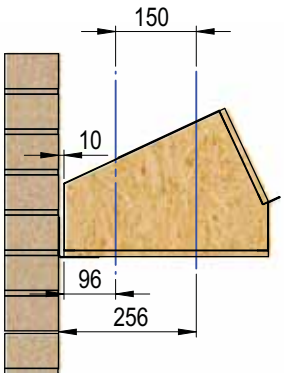


MINIMUM INTRUSION SIZES

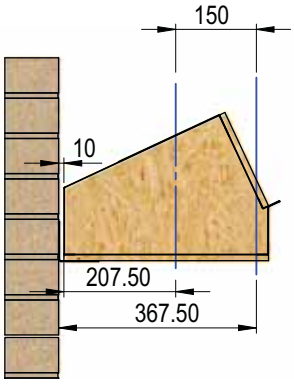
The tapered box gutter above the intrusion panel will always follow the tapered box gutter rules. However where the tapered box gutter meets the box beam, there are many variables to consider.

Minimum intrusion depth line
Internal frame line

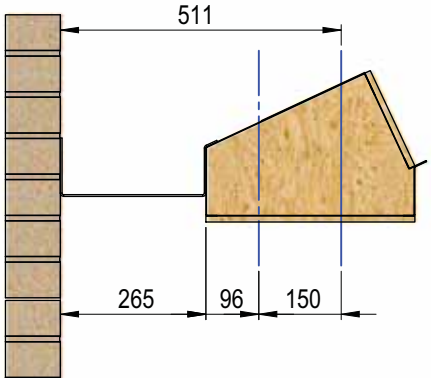
A Intrusion standard



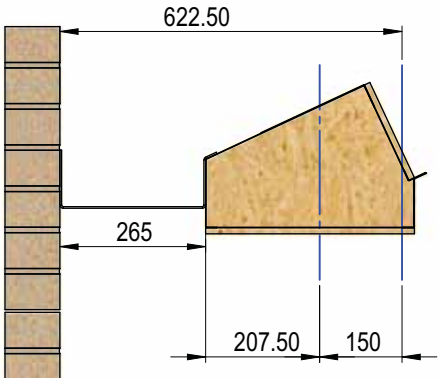
B Intrusion extended



C 265 standard intrusions



D 265 extended intrusion

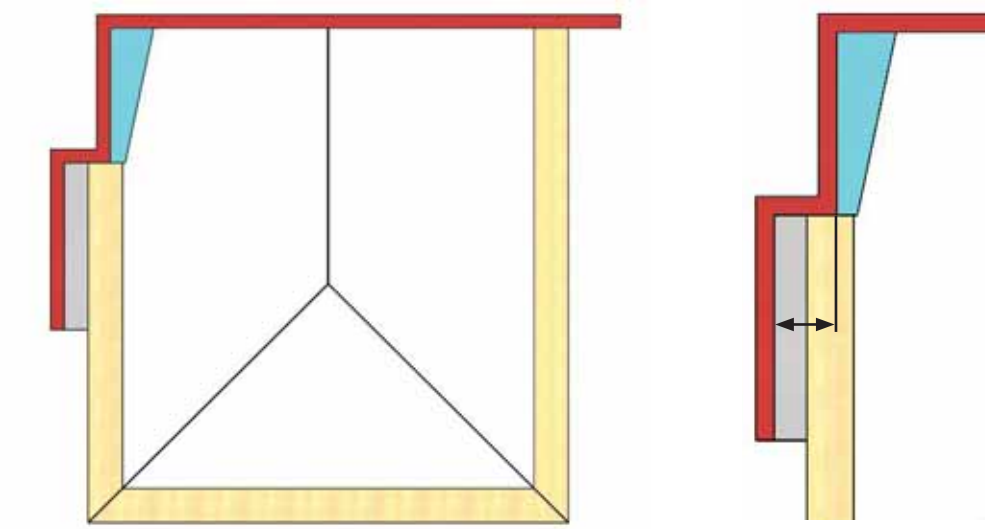


NOTE: to be read in conjunction with page 60

INTRUSIONS

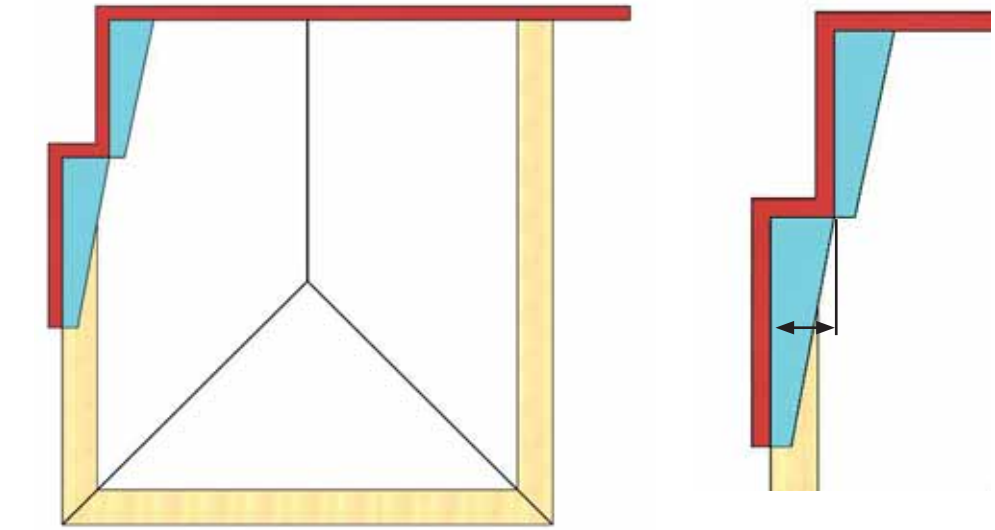
There are options for what kind of box gutter (265 or tapered box gutter) the intrusion will run into, these follow the minimum intrusion size rules (see page 59).

TAPERED JOINING STANDARD



C 511mm MIN INTRUSION
D 622.5mm EXTENDED SOFFIT WITH MIN INTRUSION

TAPERED JOINING TAPERED



A 256mm MIN INTRUSION
B 367.5mm EXTENDED SOFFIT WITH MIN INTRUSION

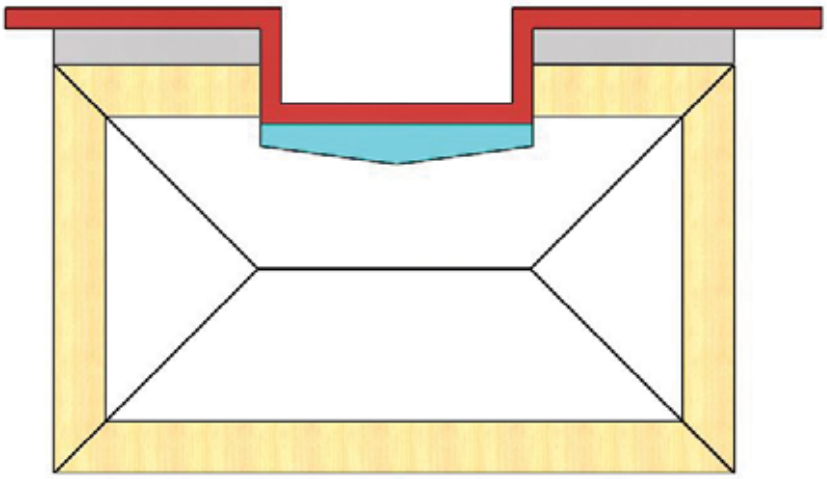
KEY

HOST WALL | BEAMS | TAPERED BOXGUTTER | BOXGUTTER

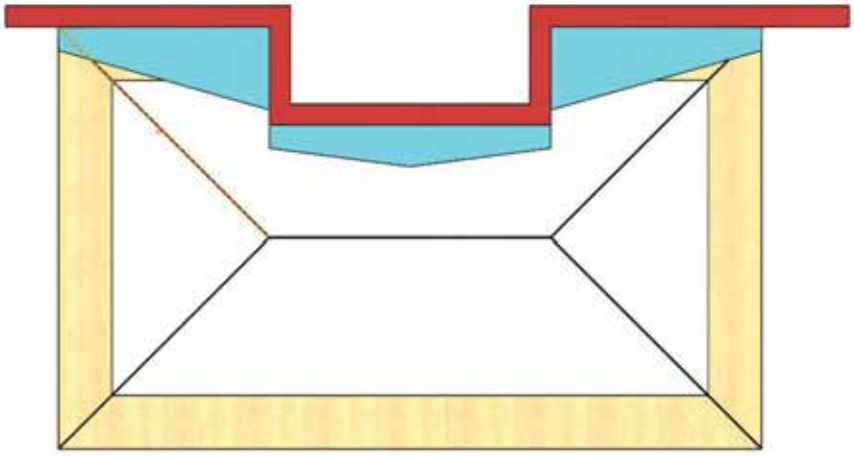
CENTRAL INTRUSIONS

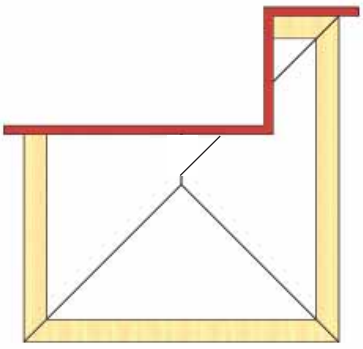
Examples following rules on page 59.

TAPERED JOINING STANDARD

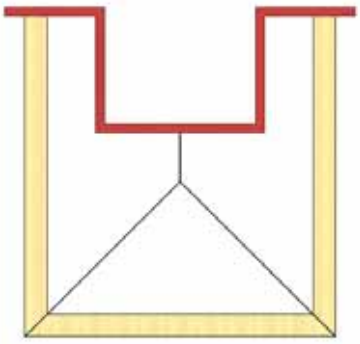


TAPERED JOINING TAPERED

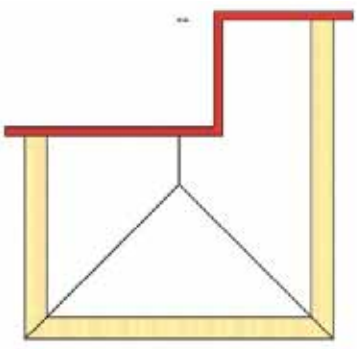




Double hipped georgian intrusion



Georgian central intrusion



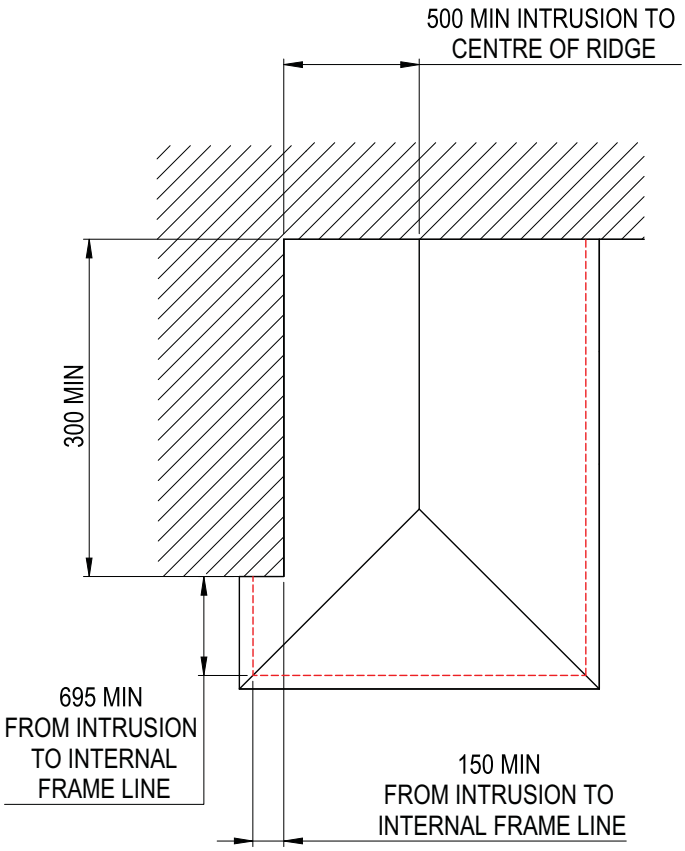
Georgian large intrusion

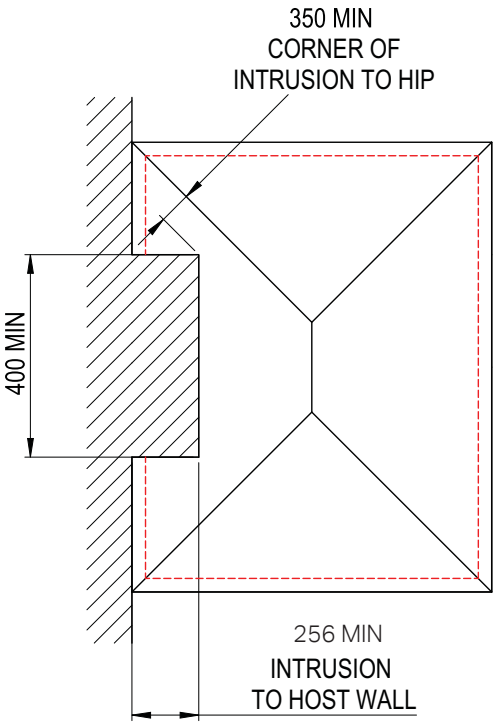
KEY

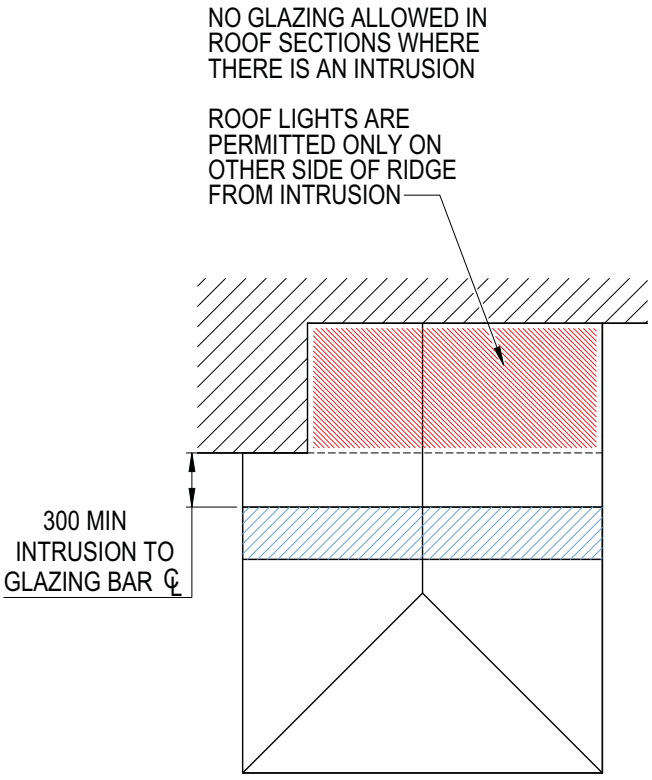
HOST WALL BEAMS TAPERED BOXGUTTER BOXGUTTER

DETAILED INTRUSION RULES

INTERNAL FRAME LINE

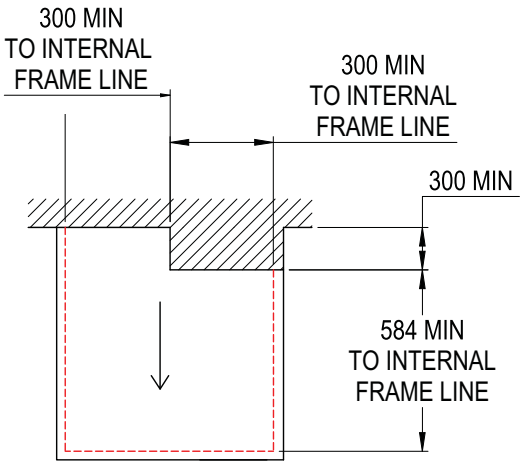


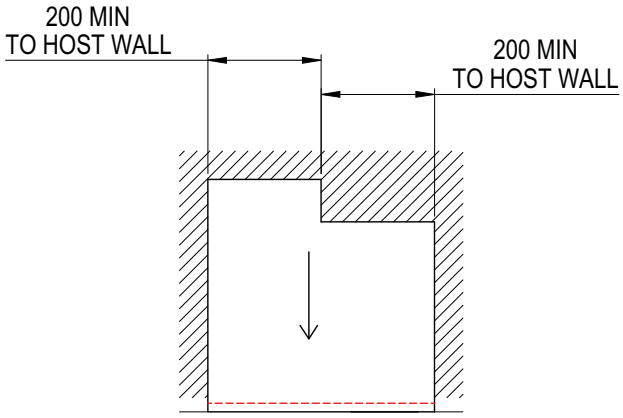


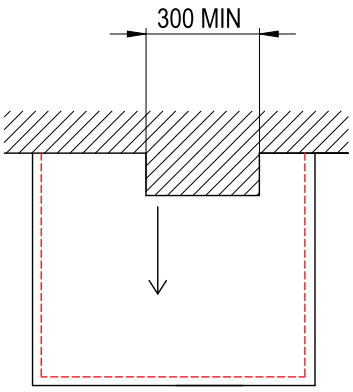


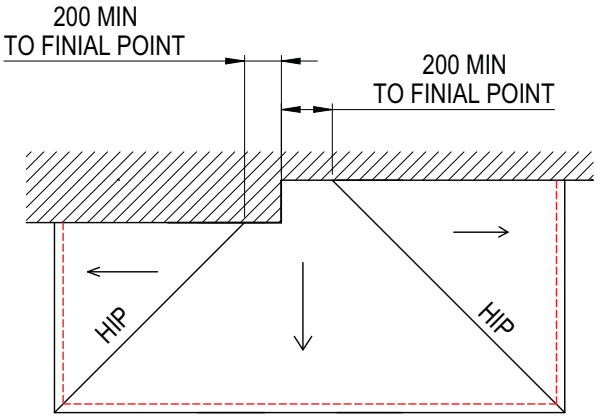
DETAILED INTRUSION RULES

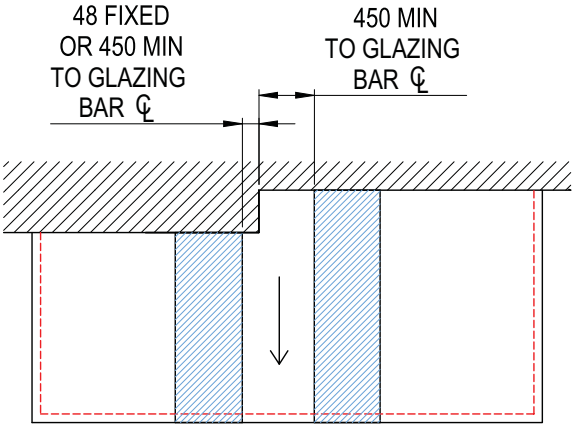
INTERNAL FRAME LINE

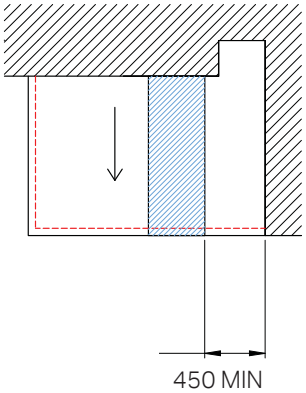


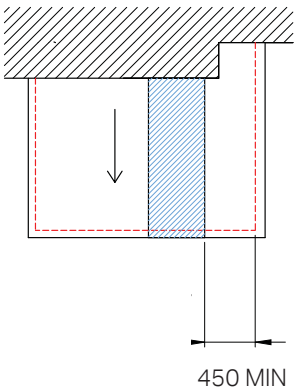










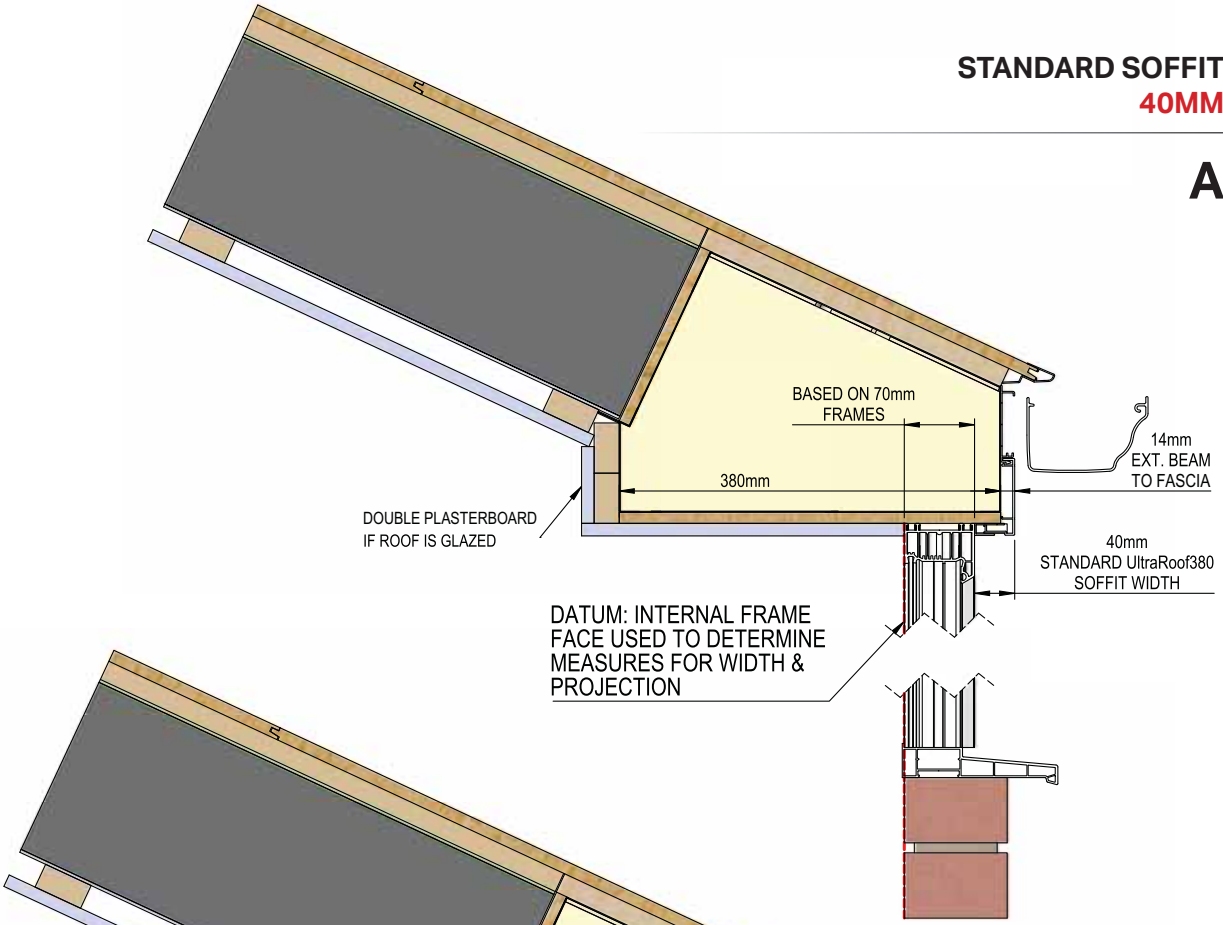


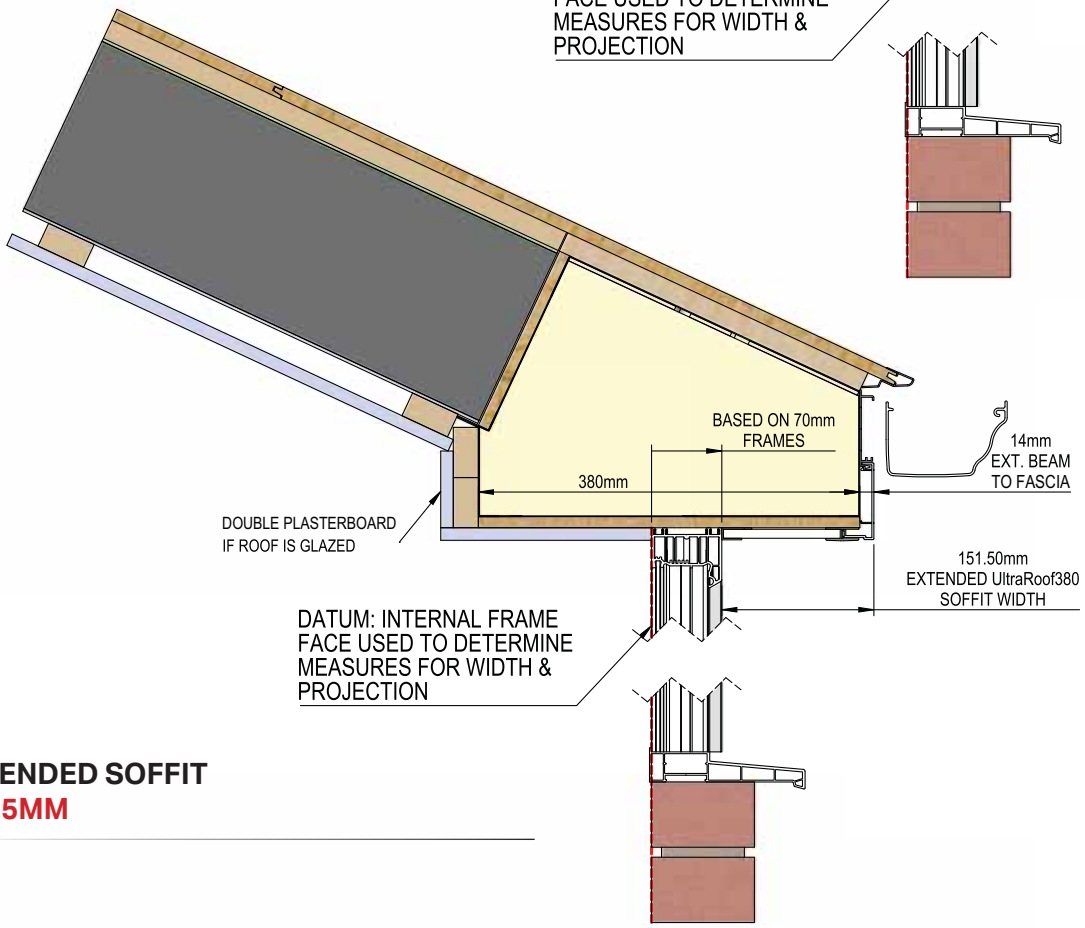
BOX BEAM ON WINDOW FRAME

The following examples show the box beam on new or existing window frames.

STANDARD SOFFIT
40MM

A





EXTENDED SOFFIT
151.5MM

B

BOX BEAM ON BRICK WORK

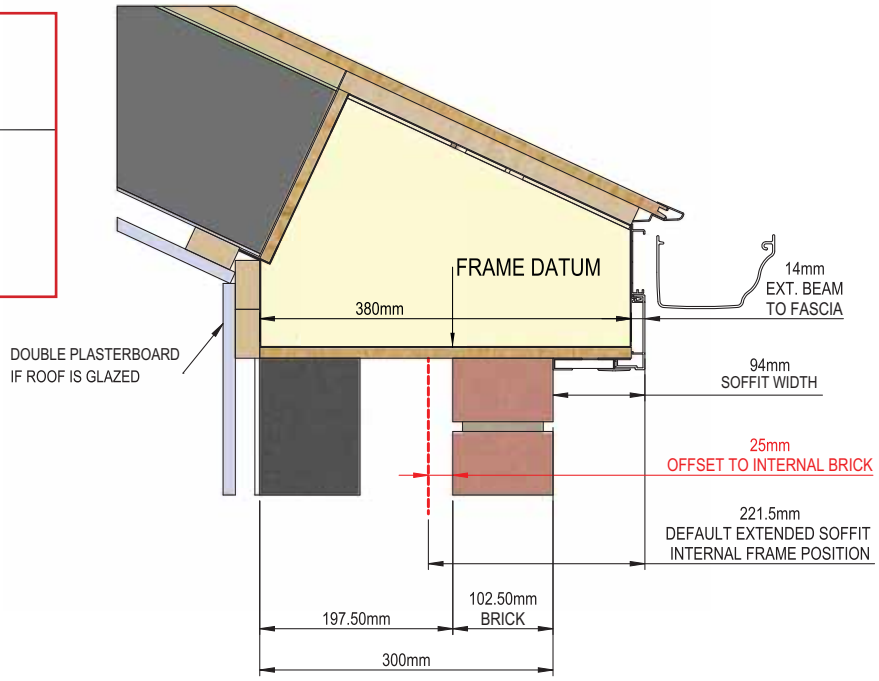
Below is shown the details for fixing a box beam to the top of solid brick work with associated soffit widths.

OPTION 1

ALIGNING BOX BEAM WITH INTERNAL BLOCK FACE

FOR THIS BRICKWORK OPTION - SPECIFY ROOF AS 'EXTENDED SOFFIT' AND DECREASE SIZE OF ROOF BY 25mm (PER SIDE)

NOTE: DO NOT ALTER PROJECTION AT GABLE.

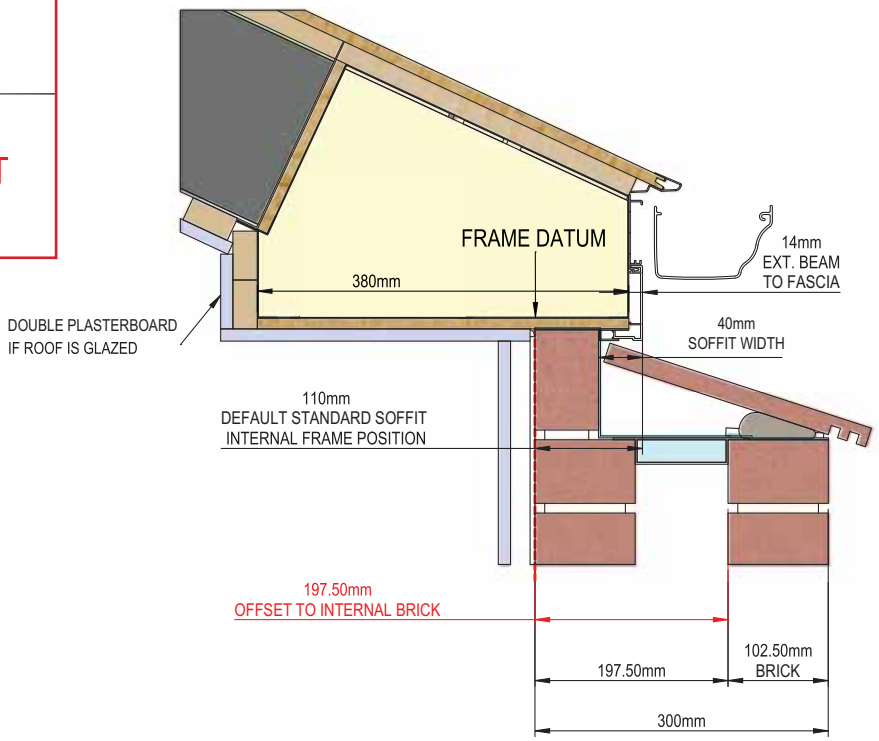


OPTION 2

MAINTAINING INTERNAL SOFFIT WIDTH WHEN SAT ON BRICK WALL

FOR THIS BRICKWORK OPTION - SPECIFY ROOF AS 'STANDARD SOFFIT' AND DECREASE SIZE OF ROOF BY 197.5mm (PER SIDE)

NOTE: DECREASE GABLE PROJECTION OF ROOF (WHERE APPLICABLE) BY 200mm.



Please Note: All illustrations shown assume a 300mm cavity wall and 70mm window frames. These dimensions may need to be modified to suit your on-site conditions.

BOX BEAM ON BRICK AND WINDOW FRAME

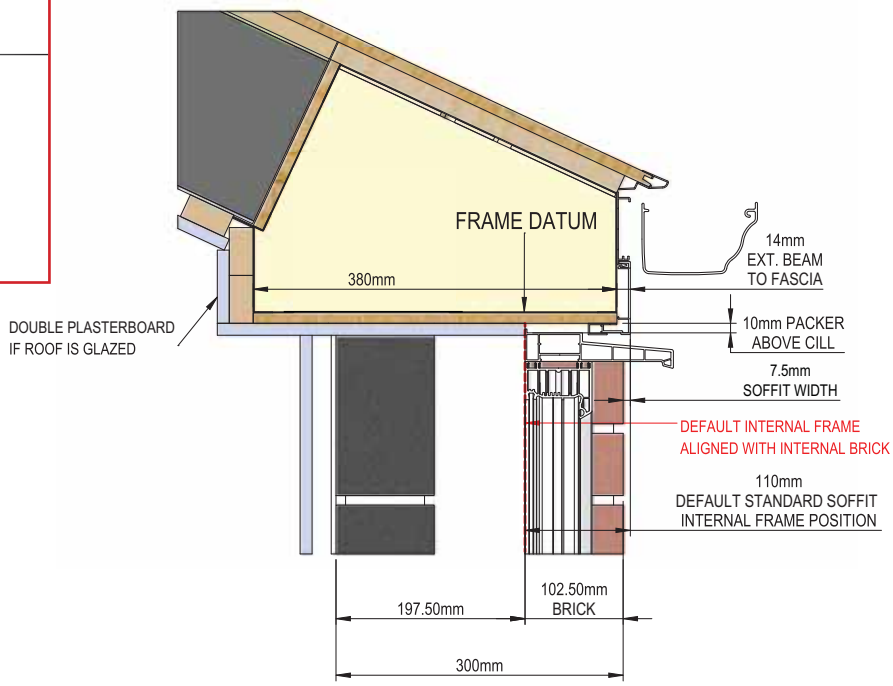
Some situations will have a mix of window frames and brickwork that will support the length of the box beam. Below shows the details for fixing a box beam to the top of window frames with brick work.

OPTION 3

IF MAINTAINING THE STANDARD SETOUT WHEN SAT ON A BRICK WALL A CILL MUST BE INCLUDED

FOR THIS BRICKWORK OPTION - SPECIFY ROOF AS 'STANDARD SOFFIT' - NO NEED TO MODIFY SIZE.

NOTE: DO NOT ALTER PROJECTION AT GABLE.

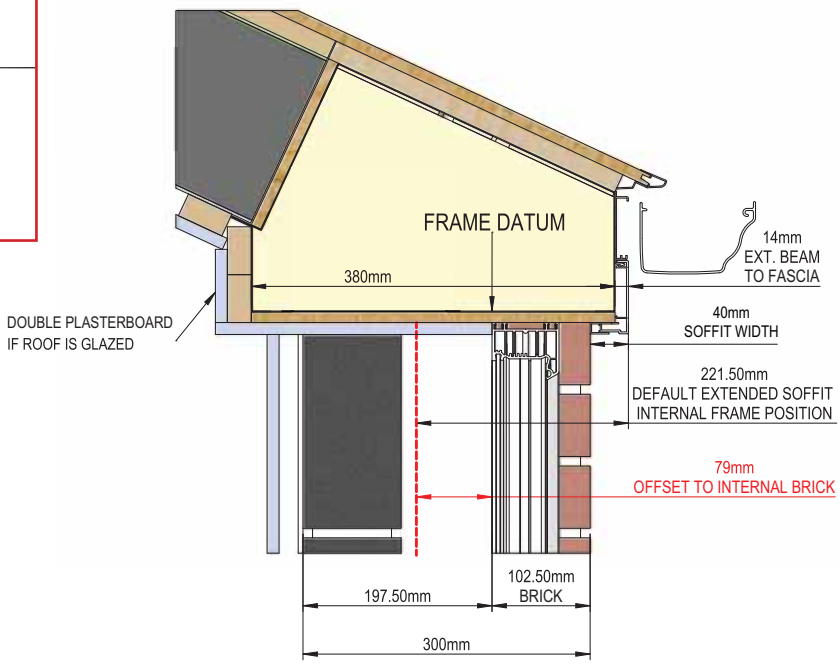


OPTION 4

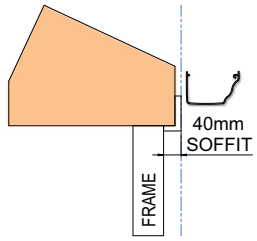
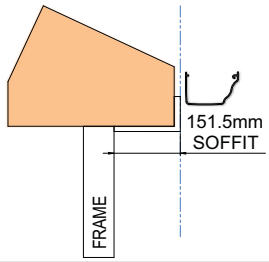
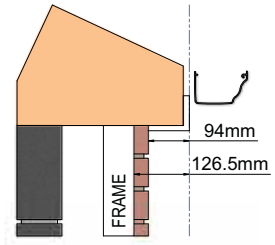
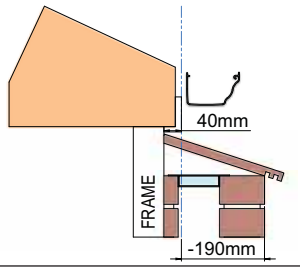
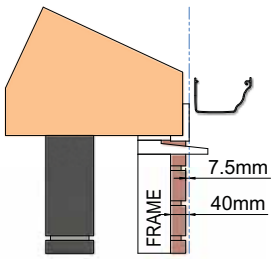
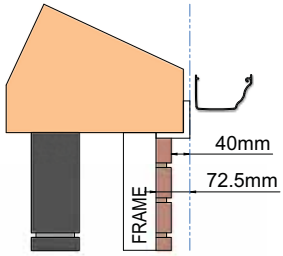
ALIGNING 40mm SOFFIT WITH EXTERNAL BRICK FACE

FOR THIS BRICKWORK OPTION - SPECIFY ROOF AS 'EXTENDED SOFFIT' AND DECREASE SIZE OF ROOF BY 79mm (PER SIDE)

NOTE: DO NOT ALTER PROJECTION AT GABLE.



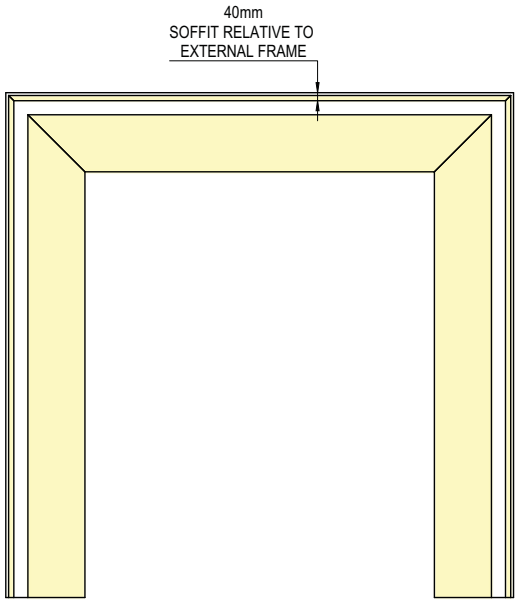
Please Note: All illustrations shown assume a 300mm cavity wall and 70mm window frames. These dimensions may need to be modified to suit your on-site conditions.

		SOFFIT WIDTHS		U-DESIGN ORDERING TIP	
	Corner condition LEFT mirrored for right	Soffit Relative to EXTERNAL BRICK (300mm Cavity wall)	SOFFIT RELATIVE TO EXTERNAL FRAME (70MM FRAMES)	Specify Soffit Type	Dimensional Adjustment PER SIDE (minus)
Standard Soffit on frames		**N/A**	**40mm**	**STANDARD**	**N/A**
Extended Soffit on frames		**N/A**	**151.5mm**	**EXTENDED**	**N/A**
Brick Option 1 Aligns roof with inner leaf of 300mm wall		**94mm**	**126.5mm**	**EXTENDED**	**-25mm (minus)**
Brick Option 2 Only used when roof is on a boundary wall		**-190mm**	**40mm**	**STANDARD**	**-197.5mm (minus)**
Brick Option 3 Maintains 40mm sof-fit relative to frame		**7.5mm**	**40mm**	**STANDARD**	**0mm**
Brick Option 4 Maintains 40mm soffit reltive to brick		**40mm**	**72.5mm**	**EXTENDED**	**-79mm (minus)**

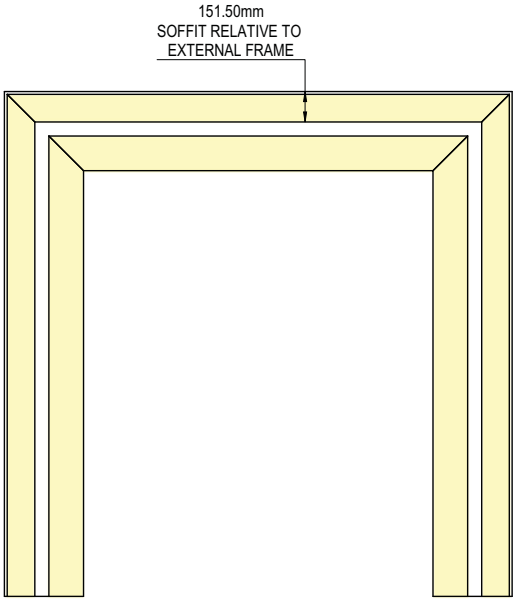
Please Note: All illustrations shown assume a 300mm cavity wall and 70mm window frames. These dimensions may need to be modified to suit your on-site conditions.

SOFFIT RELATIVE TO EXTERNAL FRAME

OPTION 1

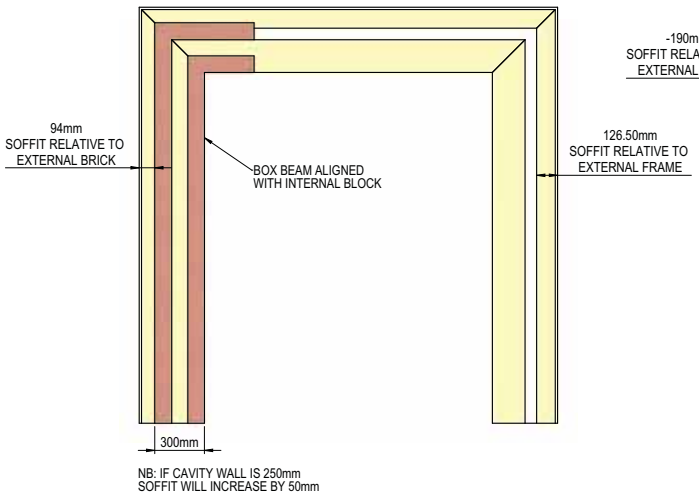


OPTION 2

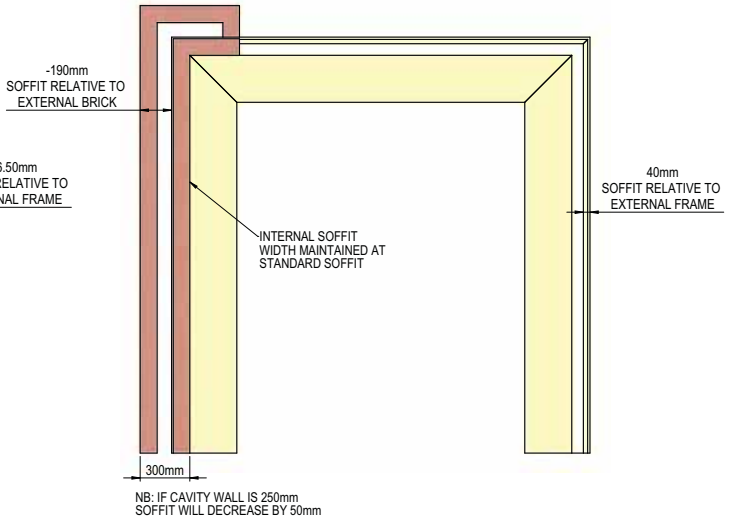


SOFFIT RELATIVE TO EXTERNAL BRICK

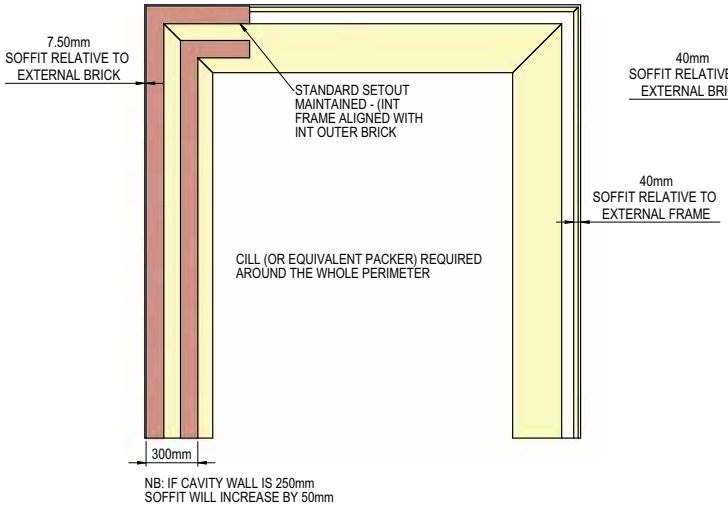
OPTION 1



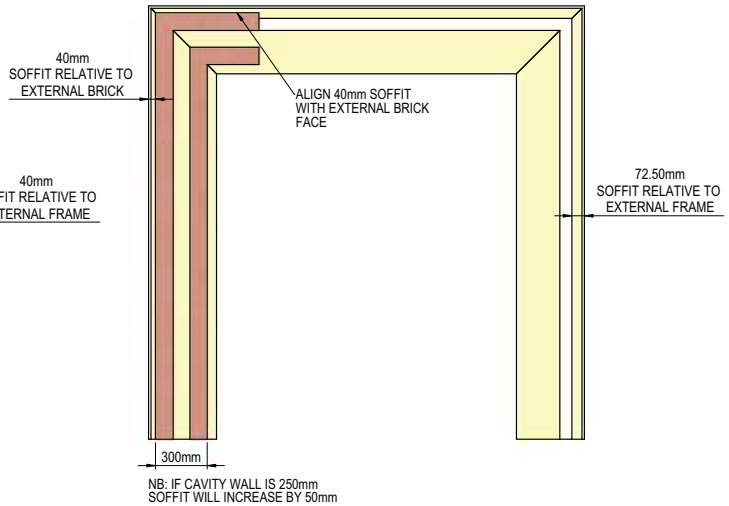
OPTION 2



OPTION 3



OPTION 4

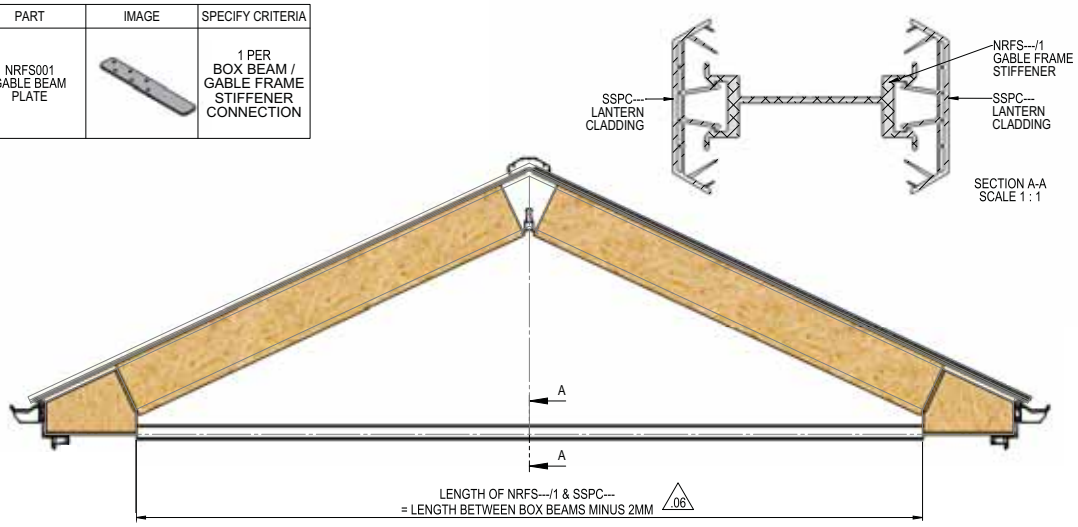


ULTRAROOF 380 GABLE REINFORCING GUIDANCE

FRAME STIFFENER OPTION

Gable frames are typically connected to the supporting frames below using the gable stiffener, shown below, that is provided as standard with Ultraroof380. Frame stiffener claddings can be specified in white, light oak, mahogany or rosewood as standard.

PART	IMAGE	SPECIFY CRITERIA
NRFS001 GABLE BEAM PLATE		1 PER BOX BEAM / GABLE FRAME STIFFENER CONNECTION



All gable frame sizes are provided as tight sizes. You will need to adjust your gable frame size slightly to give you clearance between the underside of the roof and the gable frame to aid installation .

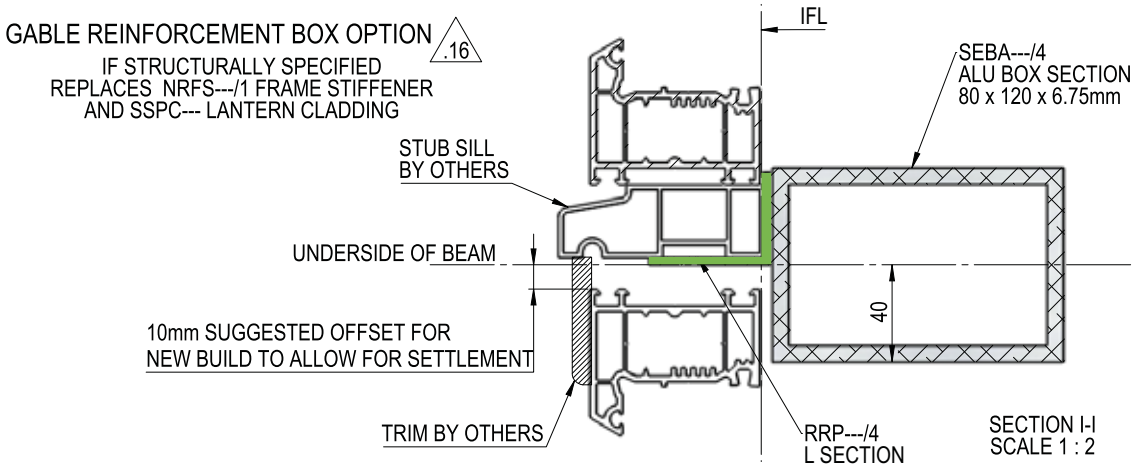
GABLE REINFORCING BOX SECTION OPTION

Where additional movement is expected at the end of a gable it may be beneficial to request the Gable Reinforcing Box Section. This will prevent flexing of frames particularly when specifying bi-folds or doors to the front of the gable.

BI-FOLDS IN ULTRAROOF380 GABLE

Ask for the gable reinforcing box section if required when ordering. You will need to consider:

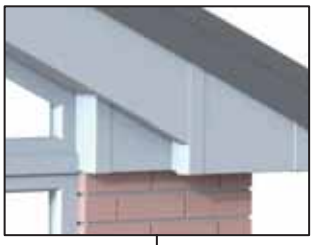
1. The height of the stub cill that you are going to use (not supplied)
2. The position of the L Section, shown in green below. This is particularly important if you are installing open in bi-folds. The standard position is on the centre line of the reinforcing box section but you can specify it in another position if required. Please let Ultraframe know at the point of ordering since this will affect the height of you gable frames.



GABLE WITH BRICKWORK DESIGN OPTIONS

What height are the brickwork returns?

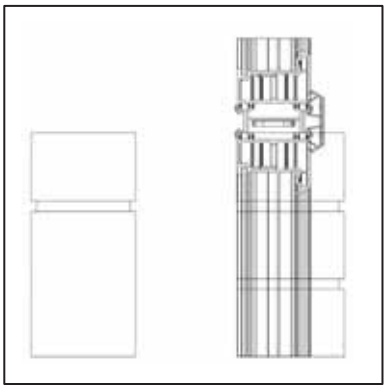
Soffit height



Does the gable feature doors, or otherwise require enhanced reinforcement?

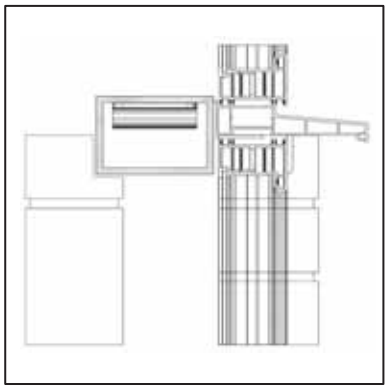
NO

Fit Gable Stiffener (default) and construct stepped fascia detail.



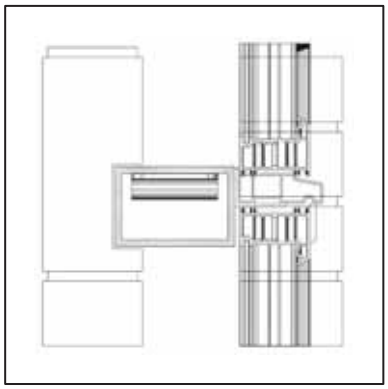
YES

Specify Gable box, 150mm cill between upper and lower frames & infill raked frame with PVCu wedge or similar (where applicable).



Full height

Specify Gable box and a stub cill between upper and lower frames (where applicable). If internal blockwork return is 1500mm or more see option on page 74.

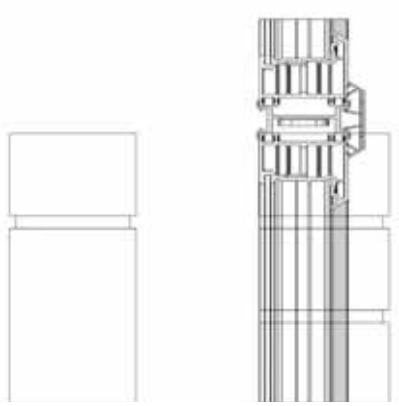


Note: when Gable box is present, notching will be required to internal blockwork to accommodate.

GABLE WITH BRICKWORK DESIGN OPTIONS

FRAME STIFFENER

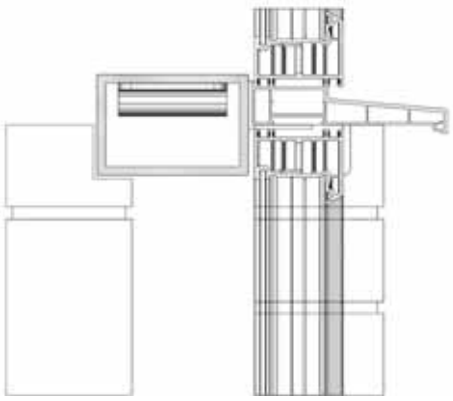
Default offering when doors are not present and no other requirement for enhanced reinforcement. Compatible with options 1, 2 & 4 (see pages 65 - 66).



EXAMPLE SHOWS BRICKWORK OPTION 1

REINFORCED BOX WITH MIN. 150MM CILL

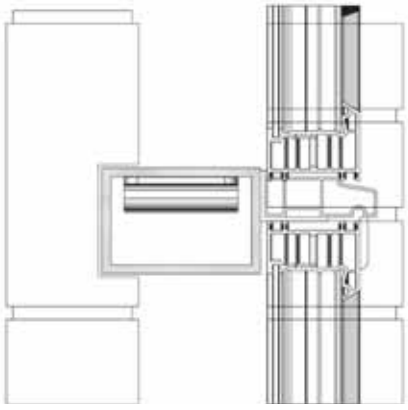
Optional detail; required for use with bi-fold doors or other enhanced reinforcement needs.
Compatible with all brickwork options. This option to be used in conjunction with super-insulated columns.



EXAMPLE SHOWS BRICKWORK OPTION 2

REINFORCED BOX WITH STUB CILL

Optional detail; required if continuing brickwork up to full height and internal blockwork returns are below 1500mm (see detail). Compatible with all brickwork options (see pages 65 - 66).



EXAMPLE SHOWS BRICKWORK OPTION 3

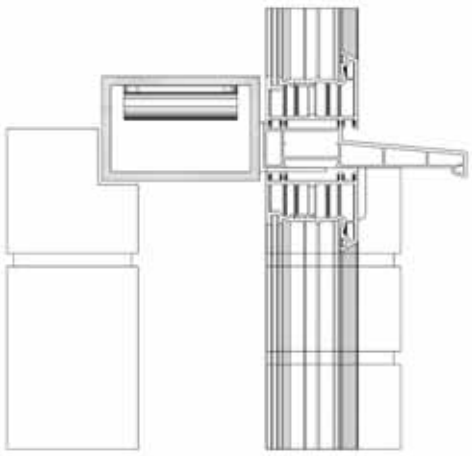
GABLE WITH BRICKWORK DESIGN OPTIONS

BRICKWORK OPTION 3 SPECIFIC

When specifying brickwork option 3 (page 66); a cill is by default always required beneath the beam. This means that the frame stiffener cannot be used.

Default offering in this case is therefore reinforced box with min. 150mm cill, where the cill height relative to the adjacent reinforced box is lower than with other options. Stub cill option can also be used when continuing brickwork up to full height.

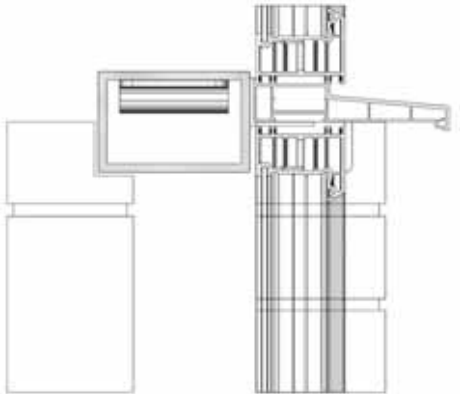
EXAMPLE SHOWS BRICKWORK OPTION 3 WITH 150MM CILL RUNNING THROUGH.



EXAMPLE SHOWS BRICKWORK OPTION 3 WITH 150MM CILL STOPPED SHORT FOR FULL HEIGHT BRICKWORK.

SUPER-INSULATED COLUMNS

When specifying super-insulated columns, Reinforced box with min. 150mm option must be used. super-insulated columns compatible with options 1 & 3 only (see pages 65 - 66)



EXAMPLE SHOWS BRICKWORK OPTION 1

GABLE WITH BRICKWORK DESIGN OPTIONS

SUPER-INSULATED COLUMNS CONTINUED

When specifying an intermediate super-insulated column across the front of the gable a 150mm cill must be used to adequately shroud the top of the column.

Internal finish is at fitters discretion; to be discussed with the customer – no materials supplied for this by Ultraframe.

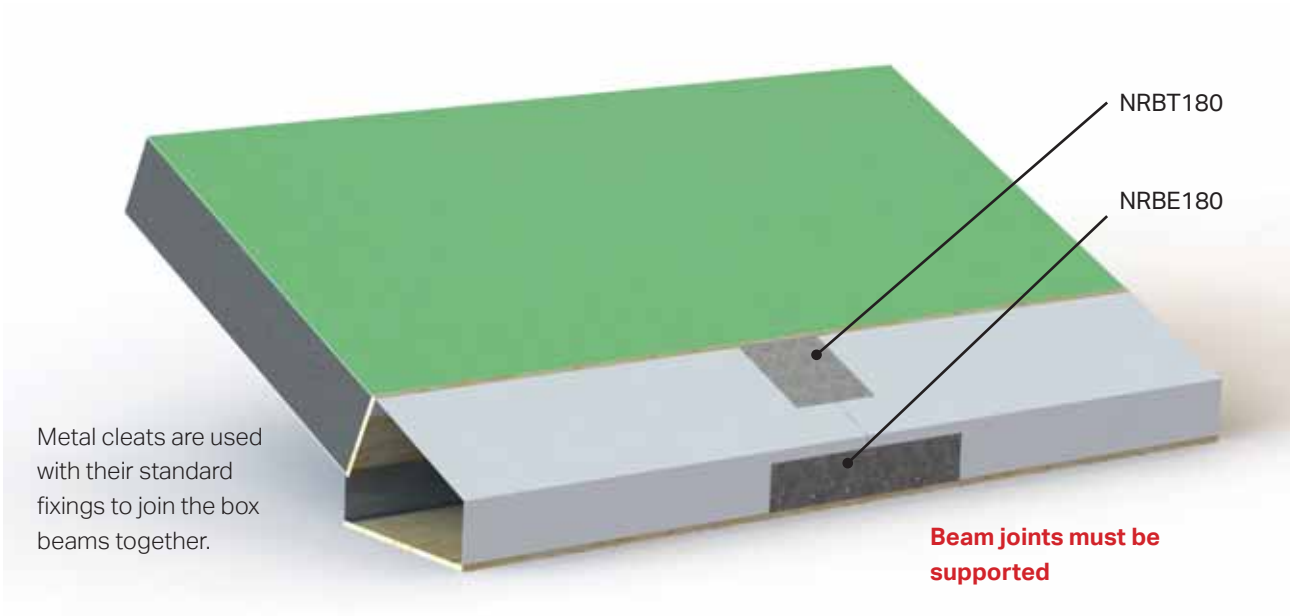
BRICKWORK STRAP DETAIL

If the internal blockwork return across the front of the gable is greater than or equal to 1500mm on both sides then a brick strap may be used. This should be fixed up through the underside of the box beam then fixed to and sandwiched between the full height blockwork.

Lean to gable stiffener

JOINING TWO BEAMS

When a roof length extends further than 7000mm, then two beams must be joined. The way the two box beams join is shown below.



Metal cleats are used with their standard fixings to join the box beams together.

Beam joints must be supported

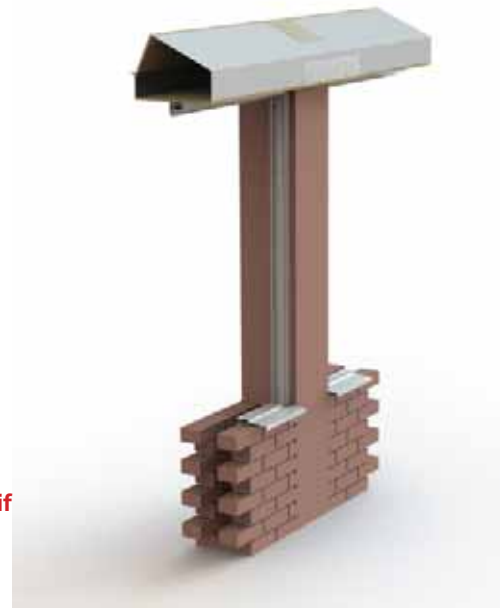
SUPPORTING JOINT ON BRICK

When two beams need to be joined they need to be supported, one option is a brick pillar. The pillar can be built as shown below.

Standard soffit

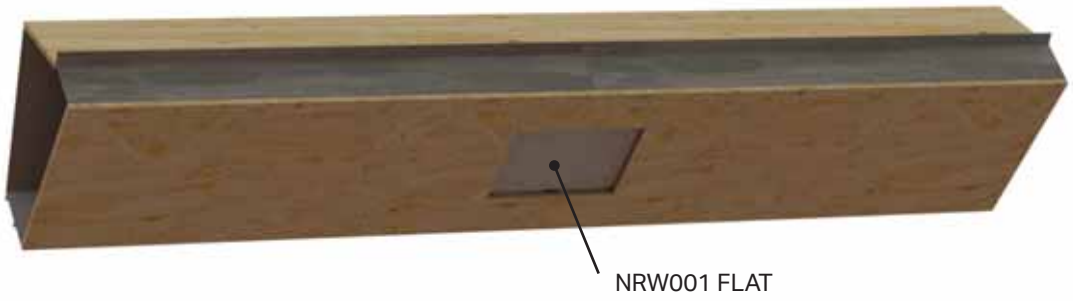
Wind posts are required in the cavity if the pillar width is less than 750mm wide

Extended soffit

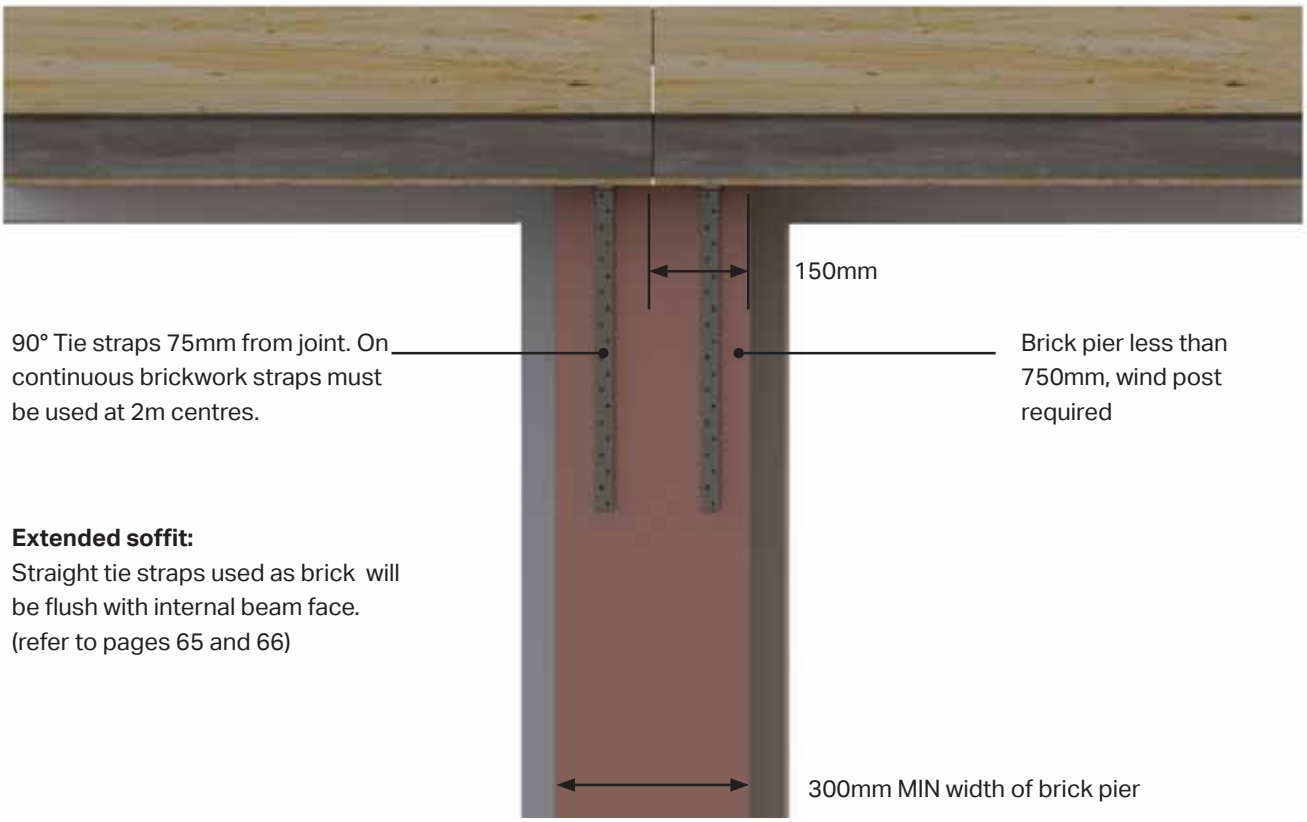


JOINING TWO BEAMS

Before the beam is placed on the brick pillar they must be connected together with a flat abutment bracket that spans the two beams. Use the fixings provided to secure the plate in place as the plate will be inaccessible when the beam is in position over the brick pillar. NOTE: this is only used when a beam is joined on a brick pillar.



Standard soffit shown



Extended soffit:
Straight tie straps used as brick will be flush with internal beam face.
(refer to pages 65 and 66)

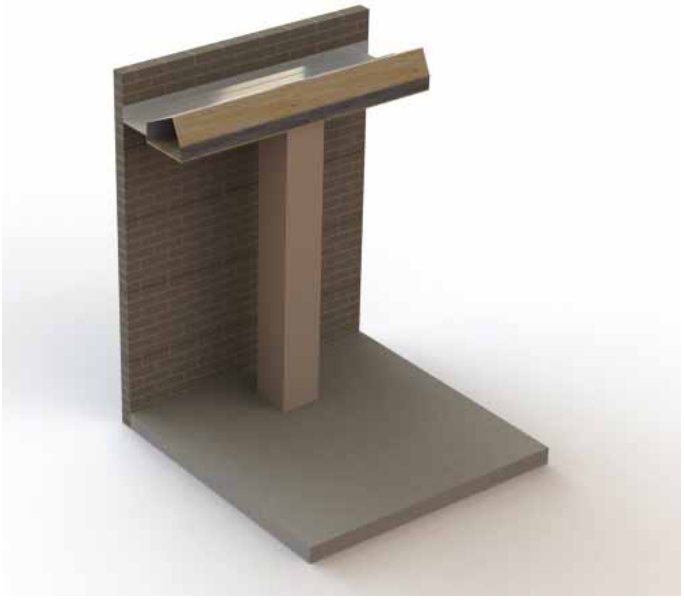
RULES

- The minimum size for the brick pillar is 300mm wide (wind post required).
- The join must be minimum 150mm from the brick external face.
- Brick pillar width less than 750mm in width, a wind post is required.

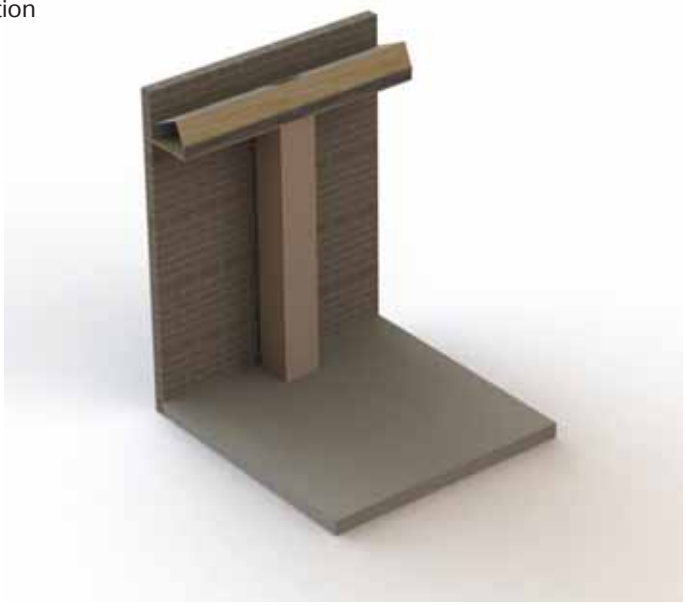
INTERNAL BRICK BEAM JOINT

When a beam joint occurs along an existing wall, a brick pier can be used to support the beam from below. The pier can be built up to the existing wall or can be left self standing, below shows the situations this occurs.

265 box gutter situation



Tapered box gutter situation



RULES

- The minimum size for the brick pillar is 240mm x 300mm.
- The join must be minimum 150mm from the brick external face on the pillar.
- Pillar can be left free standing or built back to the host wall.

SUPPORTING JOINT ON POST

An alternative way of supporting a beam joint is the use of an aluminium support post placed under the beam joint. The post is cut into the existing brick work (if necessary) and fixed to the concrete floor. A plate on top of the beam connects the two beams together. The plate sits in the cut out position of where the abutment bracket would sit.
NOTE: first beams are joined on the post fixing plate then metal cleats are added later.

Standard soffit

Extended soffit

BOX GUTTER FOAM

(BGI072)

The cavity wall brick must be cut to allow the post to sit 10mm from the external brick, this is packed off with box gutter foam to create a thermal break. A bigger void at the base must be cut into the wall to allow access to the fixings at the base of the post.

INTERNAL JOINT ON POST

When a beam joint occurs along an existing wall, a post can be used to support the beam from below. (Also refer to page 78).

265 box gutter situation

Tapered box gutter situation

RULES

- Post must sit in abutment bracket cut out position, the bracket cut out is pre cut depending on the type of box gutter required on the beam.

FIXING PLATE

The beams are fixed to the post using the fixing plate with the same footprint as an abutment bracket. The metal cleats are then fixed after the beams are fixed to the post. The post position in relation to the beam will vary depending on the soffit size.

Standard soffit

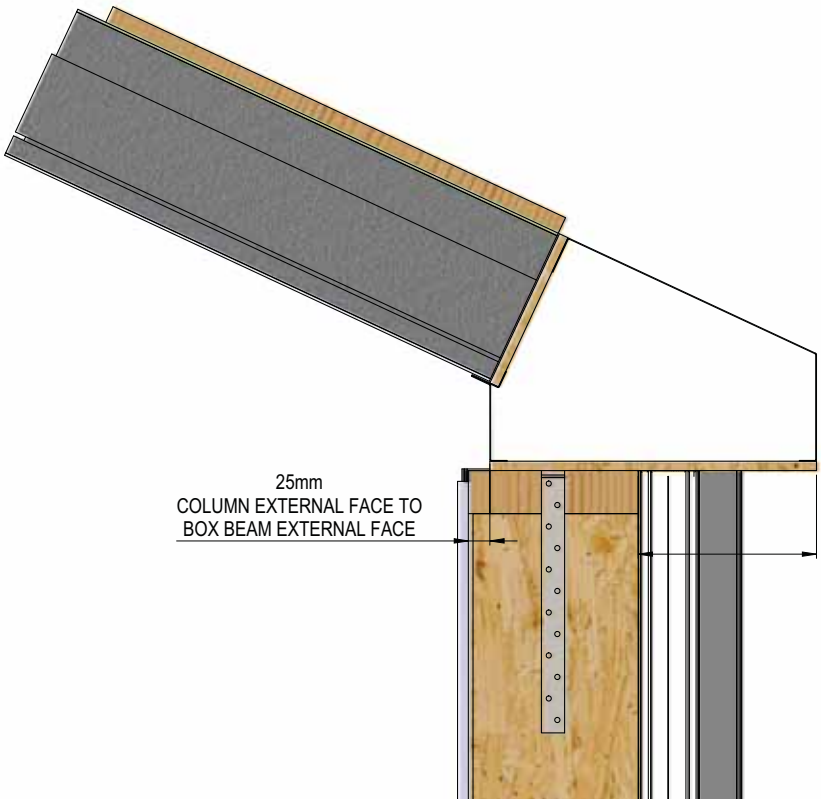
Extended soffit

RULES

- Post must sit in abutment bracket cut out position, the bracket cut out is pre cut depending on the type soffit on the beam.

BOX BEAM ON SUPER-INSULATED COLUMN

If your installation contains a super-insulated column, then it is possible to support the box beam on the column providing that the beam is installed with the following details.



EXTENDED SOFFIT ONLY ON SUPER-INSULATED COLUMN

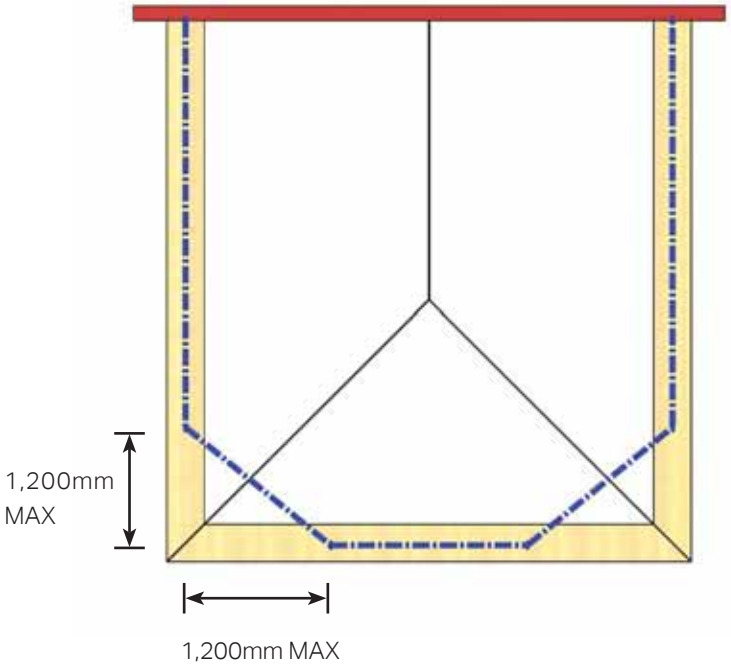
EXTENDED SOFFIT = 151.5MM + 70MM FRAME WIDTH - 14MM FASCIA = 207.5MM

GEORGIAN ROOF ON A VICTORIAN FRAME - TUDOR

Before

After

It is possible to fit an Ultraroof380 Georgian shape to the top of an existing Victorian conservatory frame. Maximum cantilever 1,200mm from corner.

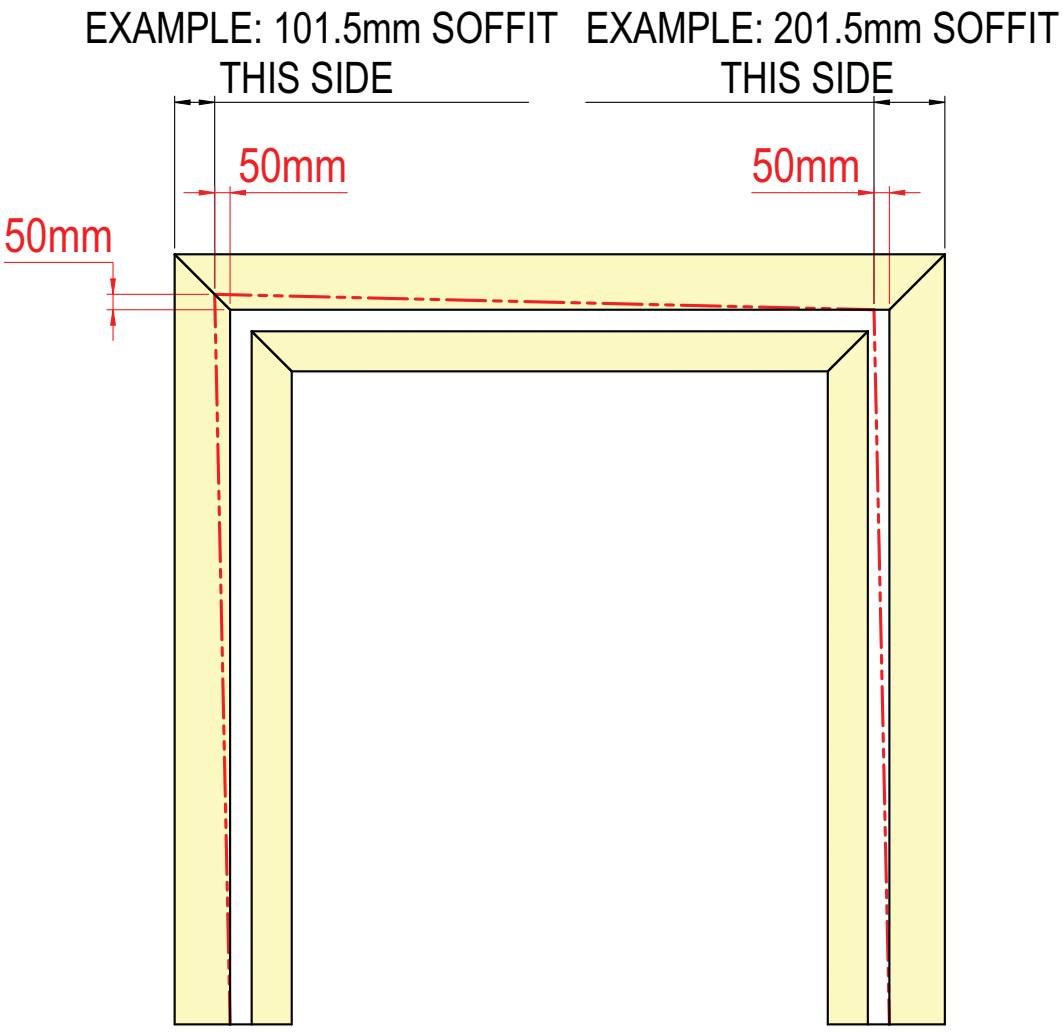


Tudor conservatory frame ----------

OUT OF SQUARE - WINDOW FRAMES/MASONRY SUPPORTS

Out of square roofs must be specified with extended soffits only. The external soffit will vary in width. This must be agreed with the customer.

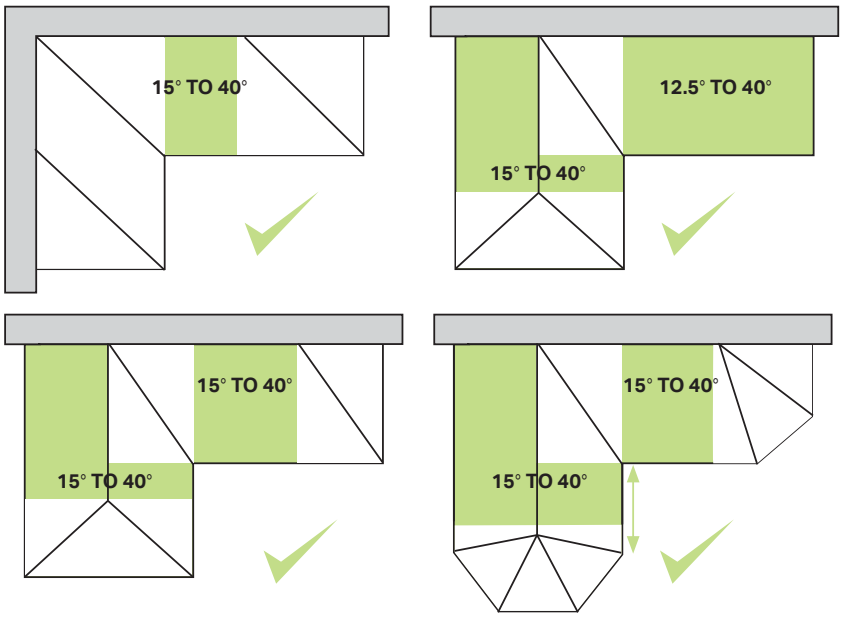
Below shows the example of frames out of square by 50mm (i.e. visual difference in soffit width of 100mm). The internal pelmet width will also vary.



VALLEY SHAPE SCOPE

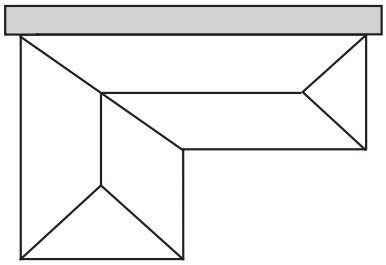
For roofs incorporating valley gutters the standard pitch rules apply. A maximum 3° pitch variation also applies.

GLAZING PANELS PERMITTED | GLAZING NOT PERMITTED | WALL

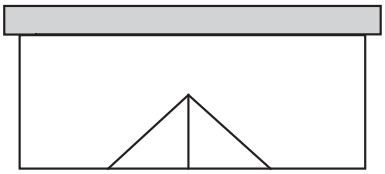


Styles to follow but are not yet available

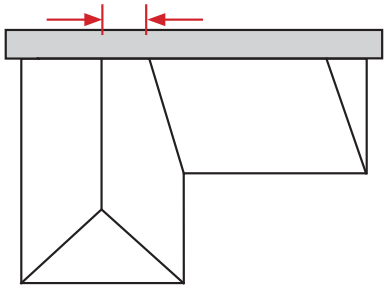
X Full ridge to full ridge



X In-line drop ridge

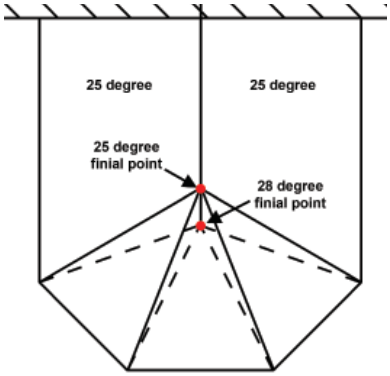


X Drop valley and gull wing

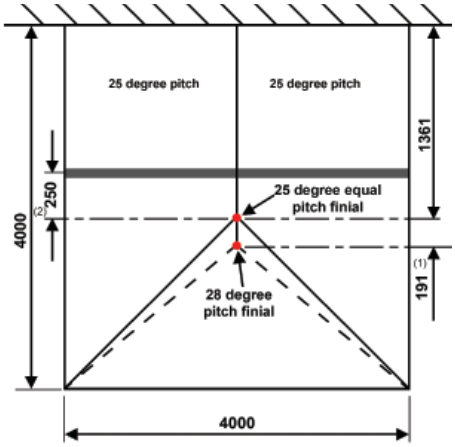


3° Pitch Variation

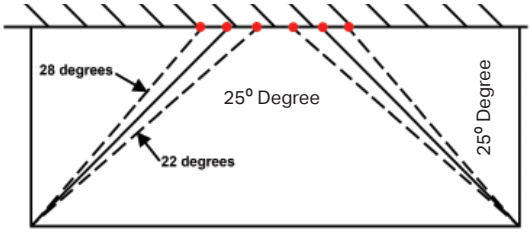
Victorian



Georgian



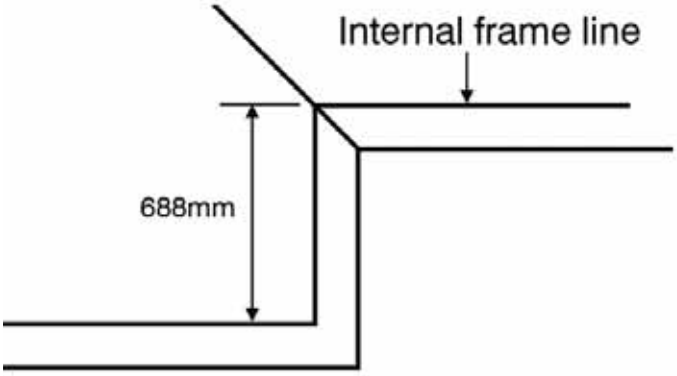
Hipped lean-to

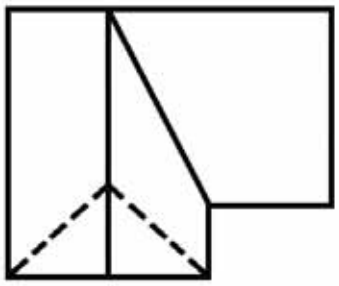


VALLEY SOLID ROOFS

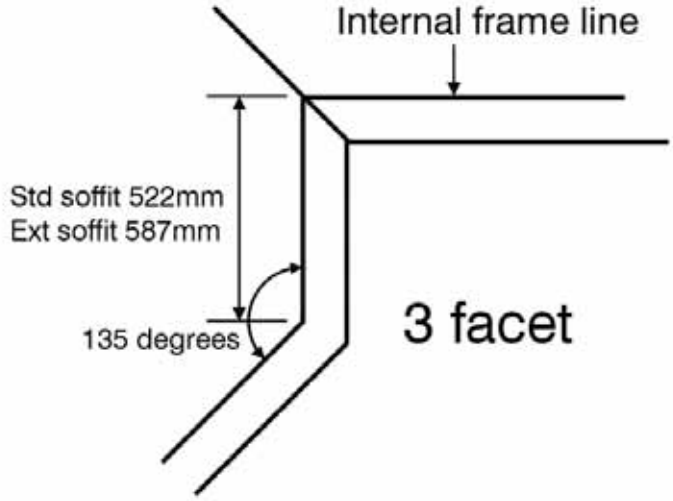
Minimum internal 'point to point' frame sizes.

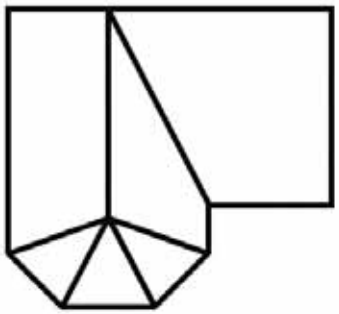
Note: deduct corner post for frame size



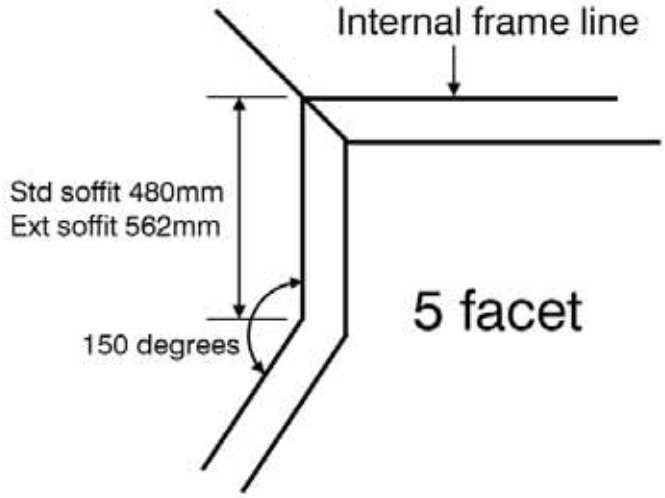


Georgian/ Gable

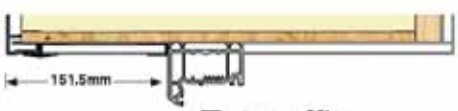




Victorian



Std soffit

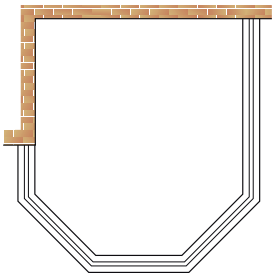


Ext soffit

CONVERTING EXISTING CONSERVATORY WITH BOX GUTTER TO ULTRAROOF380

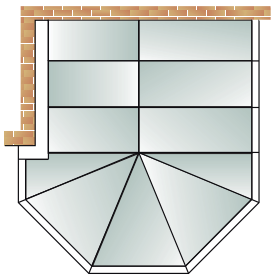
When converting an existing conservatory to an Ultraroof380, it is important to accommodate for the previous box gutter positions on the conservatory roof when designing the Ultraroof380 replacement. When the old conservatory box gutter is removed, (either a 165 or a 265), the beam sits on the existing window frames lining up with the internal frame line datum points. This results in a special finishing detail for each case being used, as shown below.

Existing conservatory with inner dwarf wall built in-line with host wall using raised back box gutter.



Base plan

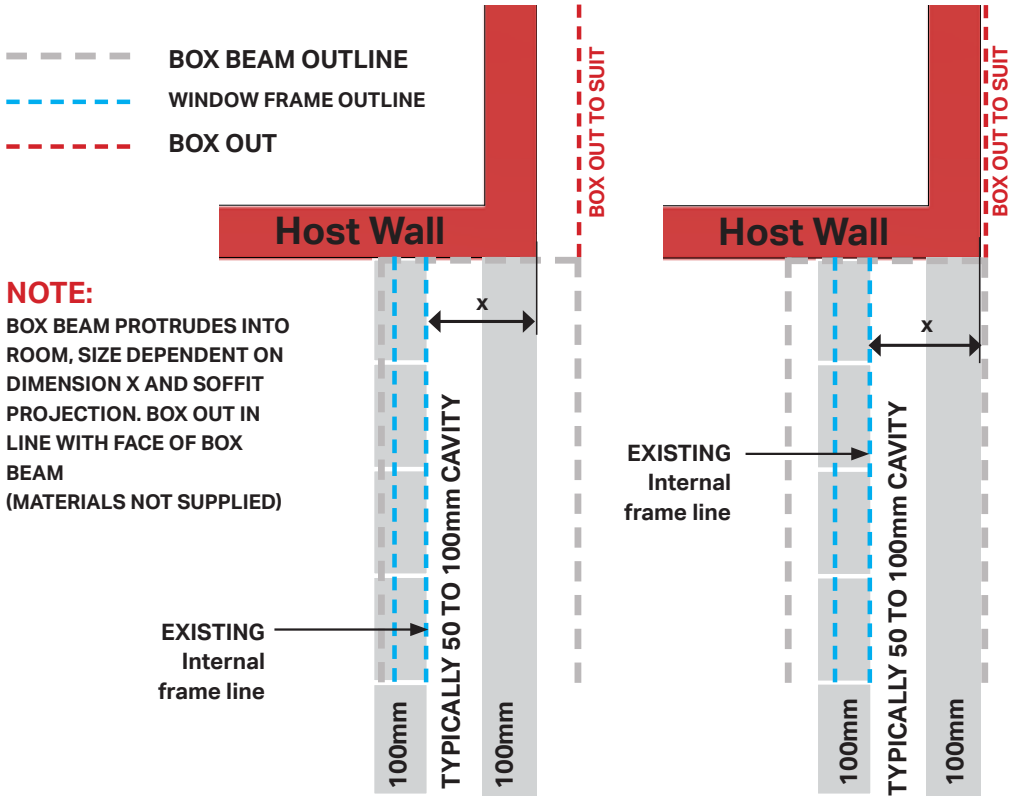
Raised back box gutter



Roof plan

STANDARD SOFFIT

EXTENDED SOFFIT



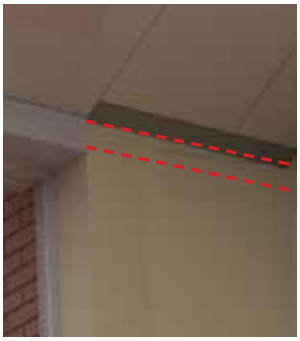
NOTE:
BOX BEAM PROTRUDES INTO ROOM, SIZE DEPENDENT ON DIMENSION X AND SOFFIT PROJECTION. BOX OUT IN LINE WITH FACE OF BOX BEAM (MATERIALS NOT SUPPLIED)

STANDARD SOFFIT BOXING OUT

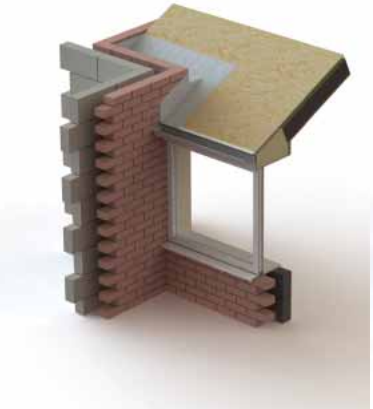
BOX OUT TO SUIT (MATERIALS NOT SUPPLIED)

EXTENDED SOFFIT BOXING OUT

BOX OUT TO SUIT (MATERIALS NOT SUPPLIED)



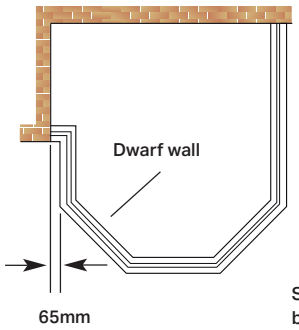
STANDARD SOFFIT



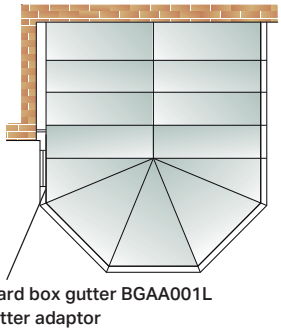
EXTENDED SOFFIT

CONVERTING EXISTING CONSERVATORY WITH BOX GUTTER TO ULTRAROOF380

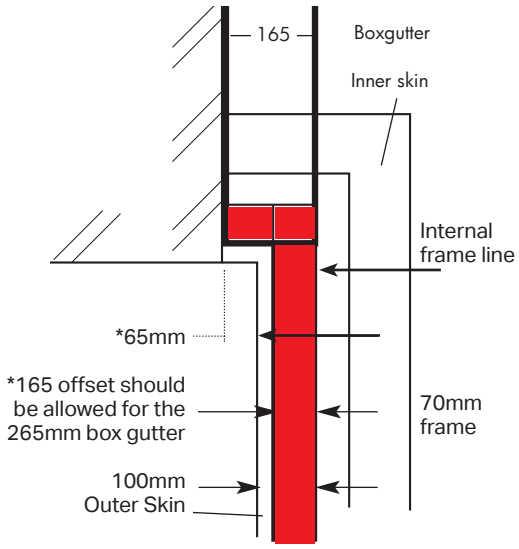
Existing in-line 165 box gutter



Base plan

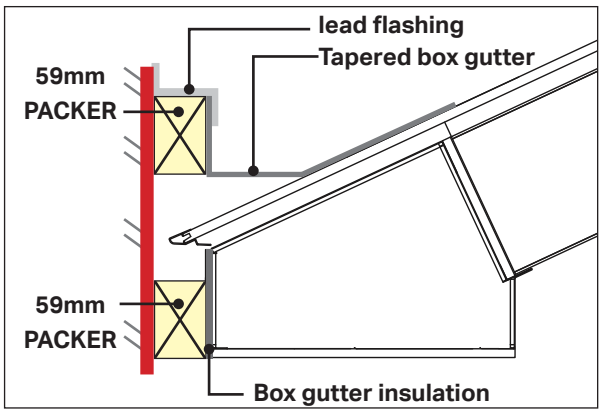


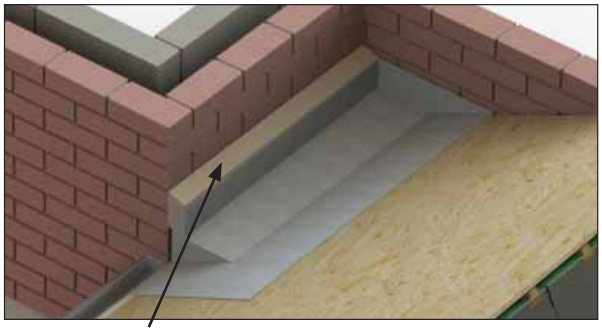
Roof plan



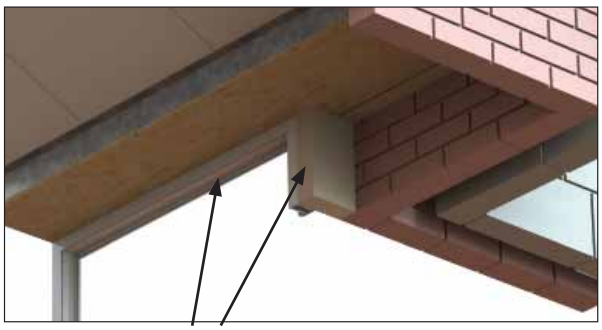
165 BOX GUTTER REPLACEMENT

Standard soffit: The internal frame line will be 165mm from the host wall, this will result in a gap of 69mm down the side of the beam. This gap is packed out with timber at 59mm and 10mm of box gutter insulation. The beam is supported on the wall with abutment bracket and to existing conservatory window frames. A tapered box gutter is added packed 59mm off the host wall.

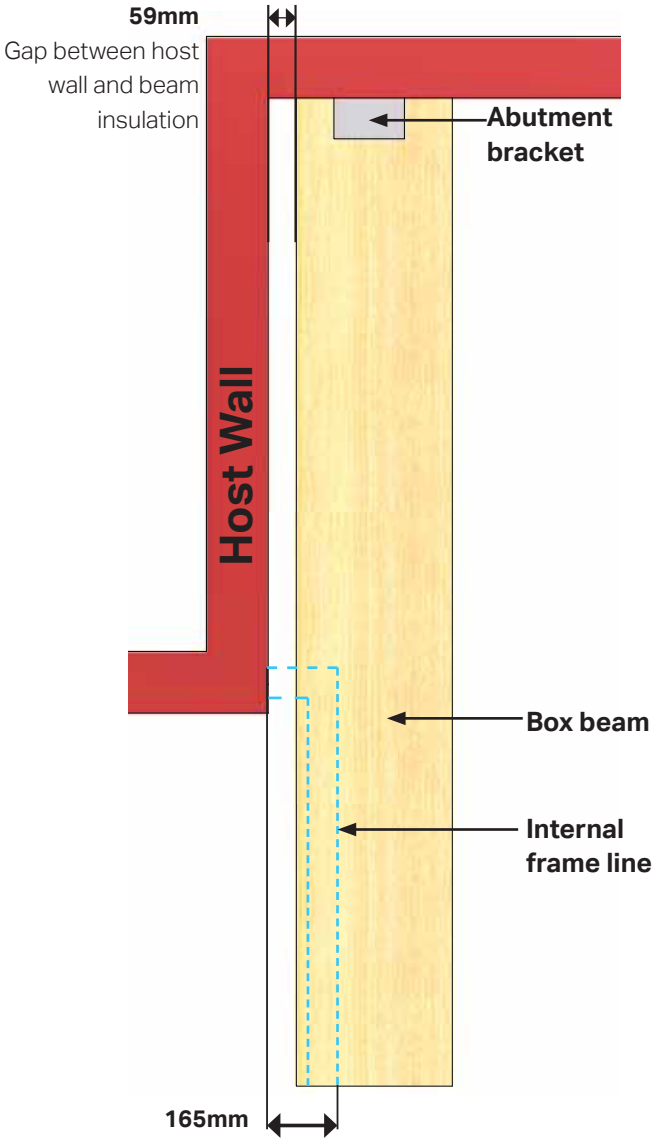




59mm timber packer, lead flash over into tapered box gutter.

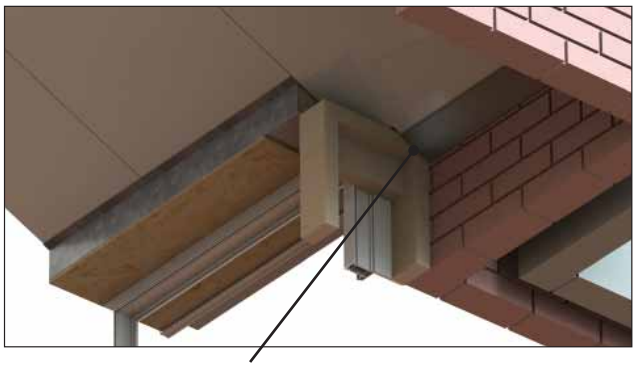


Existing frames and infill



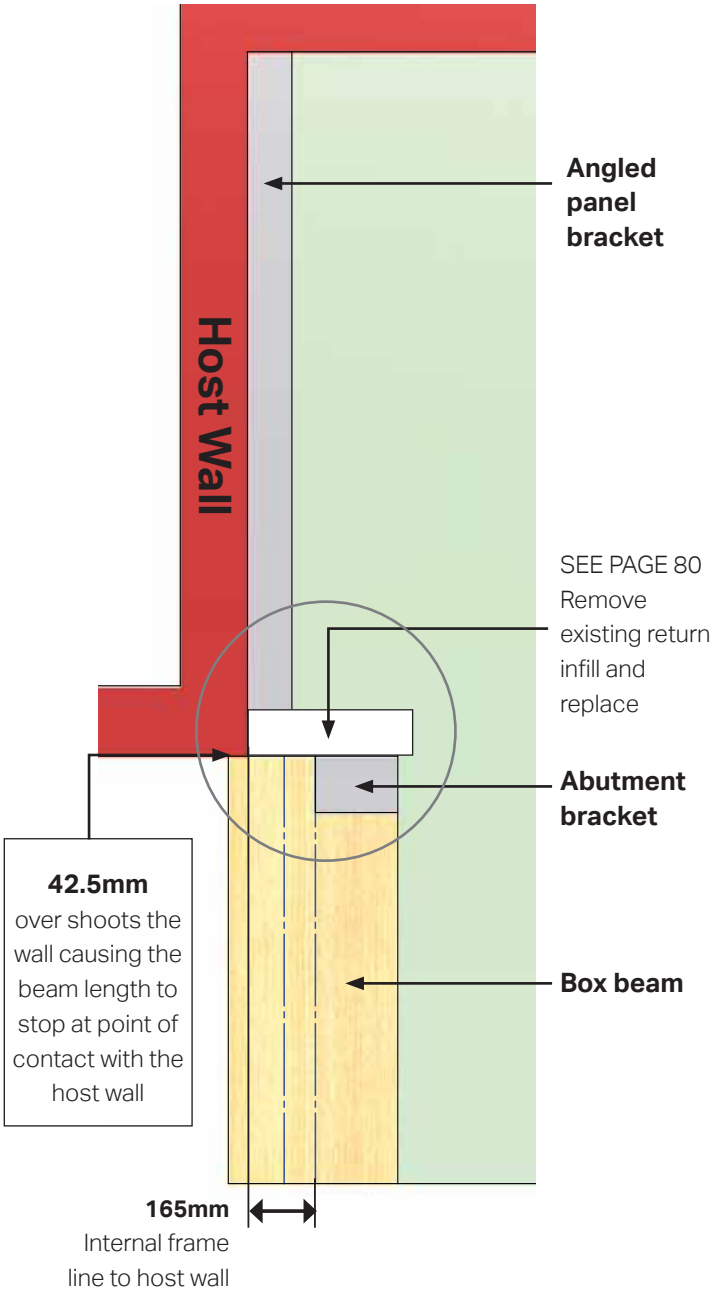
Extended soffit: The internal frame line will be 165mm from the host wall, this will result in the beam overshooting the wall by 42.5mm. The beam is stopped at the point of contact with the wall and an intrusion panel is used along the rest of the length. The beam is supported with an abutment bracket fixed to a timber infill while the panel is supported with an angled panel wall bracket (see diagram below). The intrusion must be cut on site to accommodate the timber infill square to the wall.

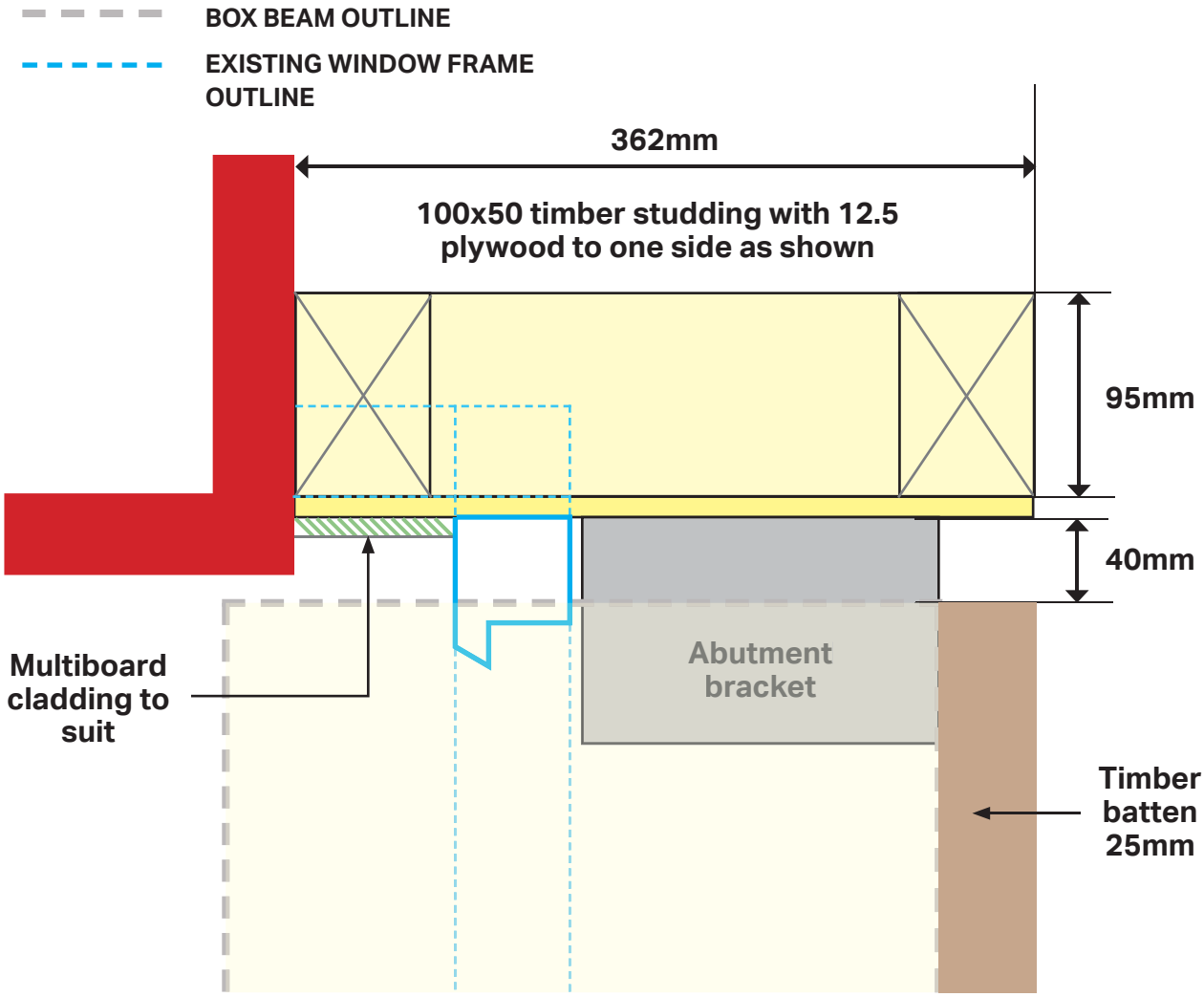
A tapered box gutter is used in this situation, it fits normally and flush with the host wall and roof.



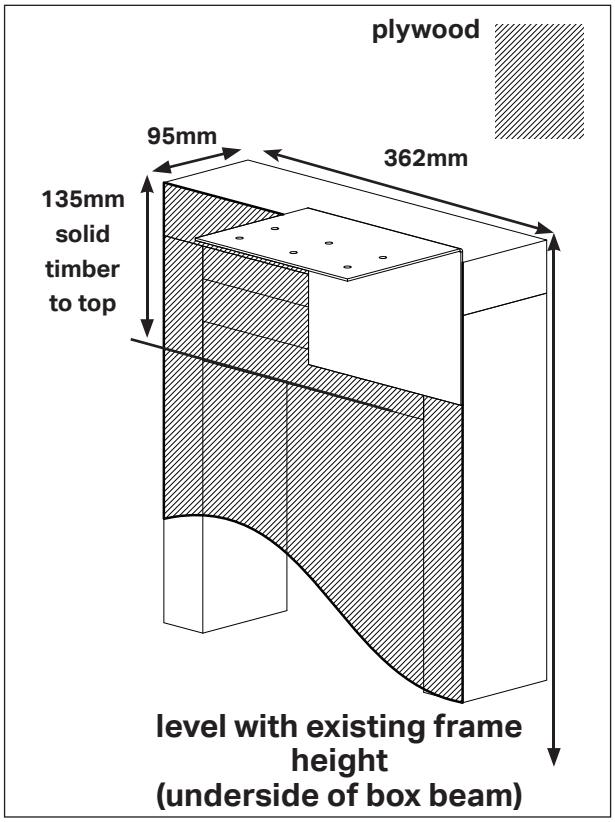
Infill 95 x 362mm In this case infill option is shown as timber. Intrusion panel is cut to accommodate the infill.

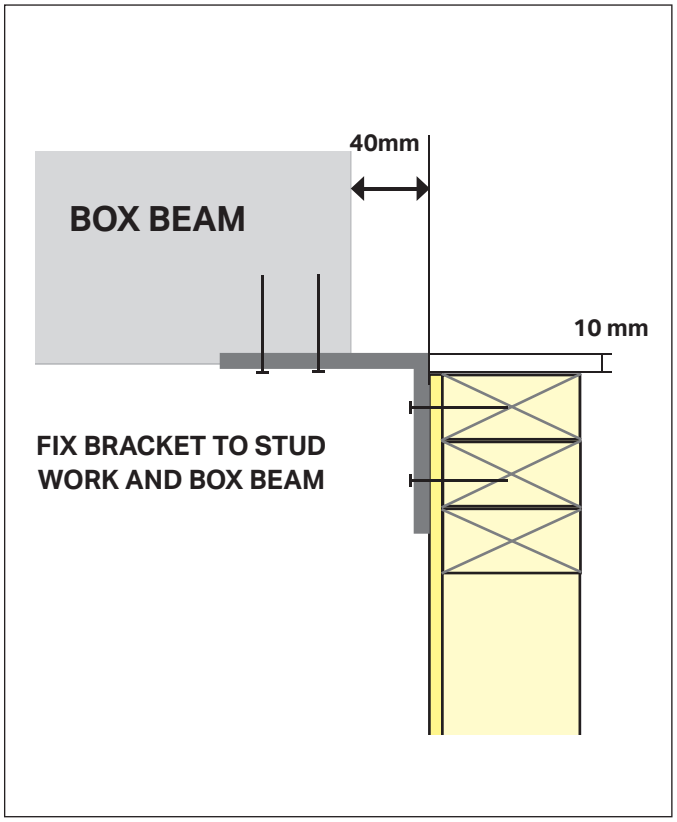
Abutment bracket
is fixed to the infill timbers, angled panel bracket fixes to the wall.





Replace existing frame with 100x50 (MIN) timber studding with 12.5mm plywood to bracket, fixed back to host wall and floor or dwarf wall.

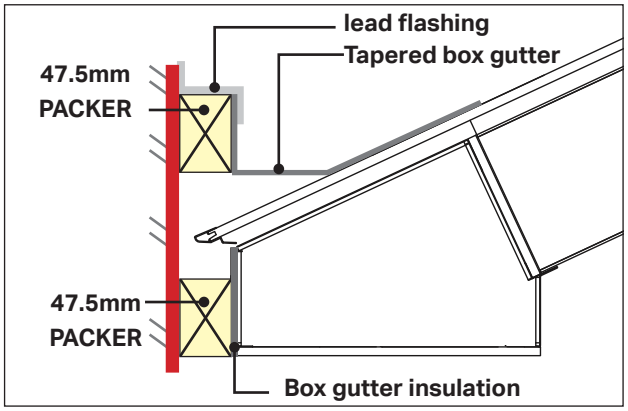


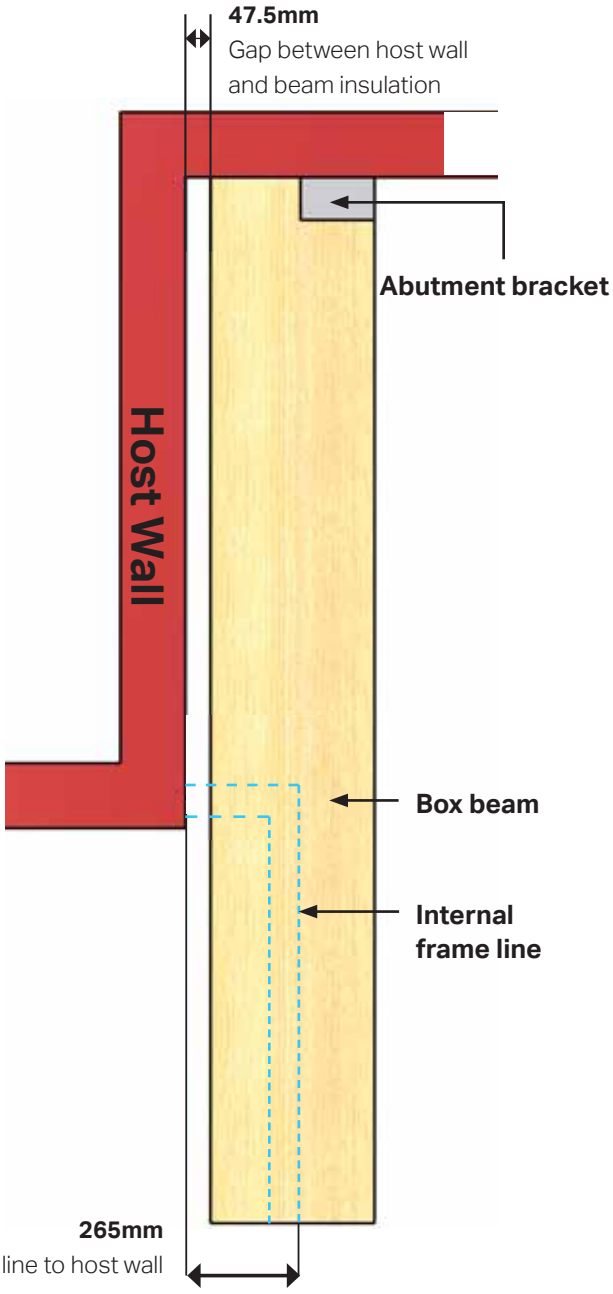


CONVERTING EXISTING CONSERVATORY WITH BOX GUTTER TO ULTRAROOF380

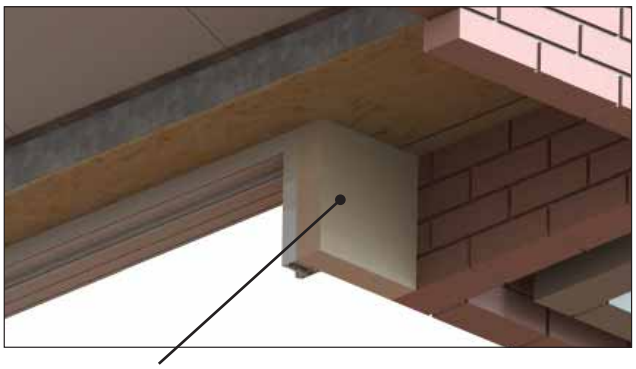
265 BOX GUTTERS

Extended soffit: The internal frame line will be 265mm from the host wall, this will result in a gap of 57.5mm down the side of the beam. This gap is packed out with 47.5mm timber and 10mm of box gutter foam. The beam is supported on the wall with abutment bracket, and by fixing to existing conservatory window frames. Finally a tapered box gutter is added, 47.5mm packed off the host wall with timber to line up correctly with the guttering.





47.5mm packed off Timber has been used to pack off the box gutter to line up with the standard gutter.



Infill 70 x 265mm In this case infill option is shown as timber.

APPROPRIATE FIXINGS

The correct selection/specification of fixings for Ultraroof380 is CRITICAL.

Ultraframe recommends HILTI chemical anchors where specified and expanding anchors in other locations (to resist pull out forces).Using HILTI product codes/descriptions, use a HIT-V 80mm x M8 threaded anchor (stud*) fastened into a 10mm clean drill hole with gun injected mortar or adhesive capsules (with a minimum 80mm embedded) - always rigorously follow the manufacturers guidance www.hilti.com

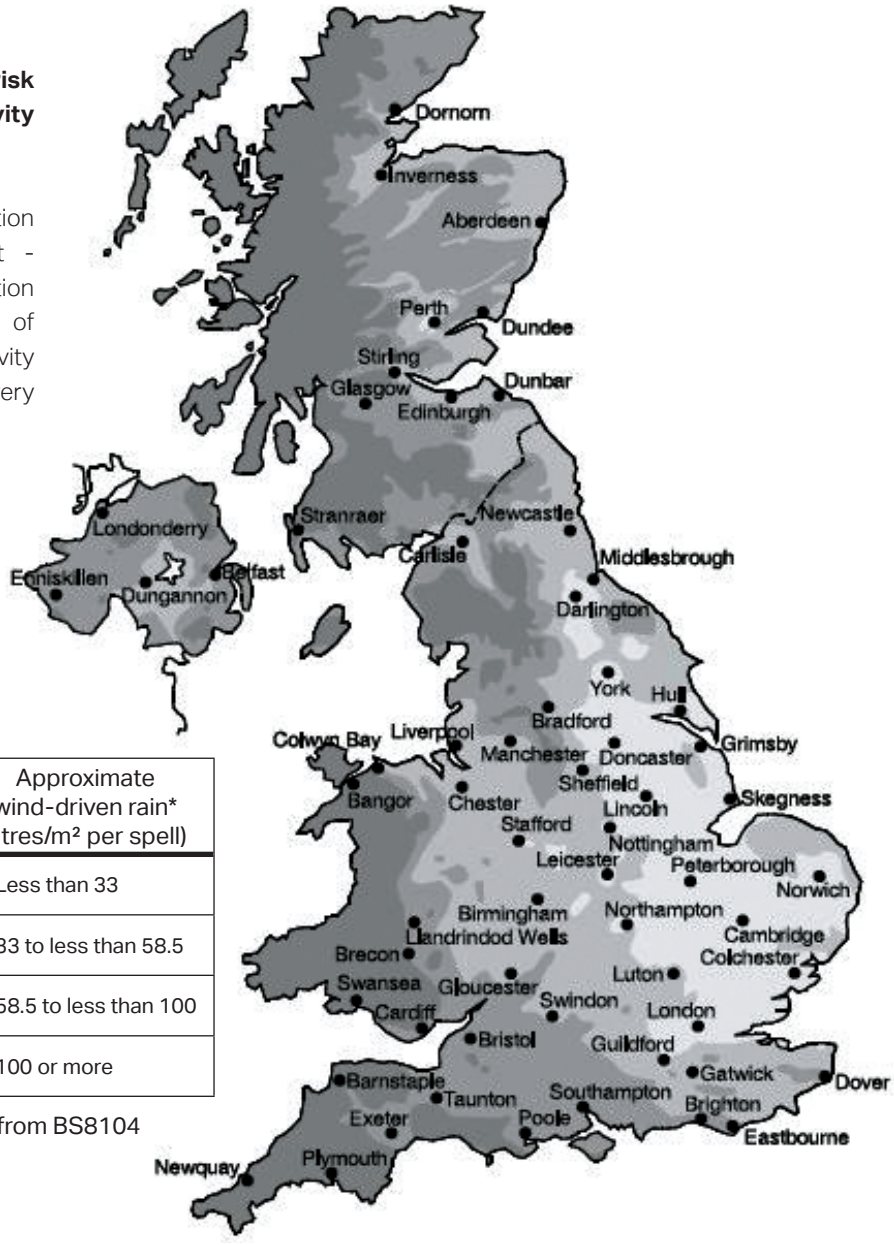
In addition Ultraframe recommends the following alternatives; Fischer M8/M10 masonry injection anchor FIS V Rawl Fixings M8/M10 CFS RM50 or CFS RP30.

* Design load for each stud 2.5kN

CAVITY TRAY ASSESSMENT / VERTICAL DPC REQUIREMENT

It is good practice to undertake a risk assessment to determine IF cavity trays should be retro fitted.

In zones 1 and 2, cavity tray installation is based upon risk assessment - factors include determining if elevation faces prevailing wind, absorbancy of brickwork and monitor joint type. Cavity trays MUST be installed in severe/very severe exposure zones (3 and 4).



KEY	EXPOSURE ZONES	Approximate wind-driven rain* (litres/m² per spell)
	1 Sheltered	Less than 33
	2 Moderate	33 to less than 58.5
	3 Severe	58.5 to less than 100
	4 Very Severe	100 or more

* Maximum wall spell index derived from BS8104

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Job No.: 3359 10/17 V3 NRSG001 Qty 200 Ultraroof380 process V2