Guardian™
Warm Roof

Manufacturers and installers of the Guardian™

Conservatory Warm Roof Conversion System

registered LABC
Registration No. RD320

LABSS
Local Authority Building Standards Scotland

As seen at
GRAND DESIGNS LIVE

www.guardianwarmroof.co.uk

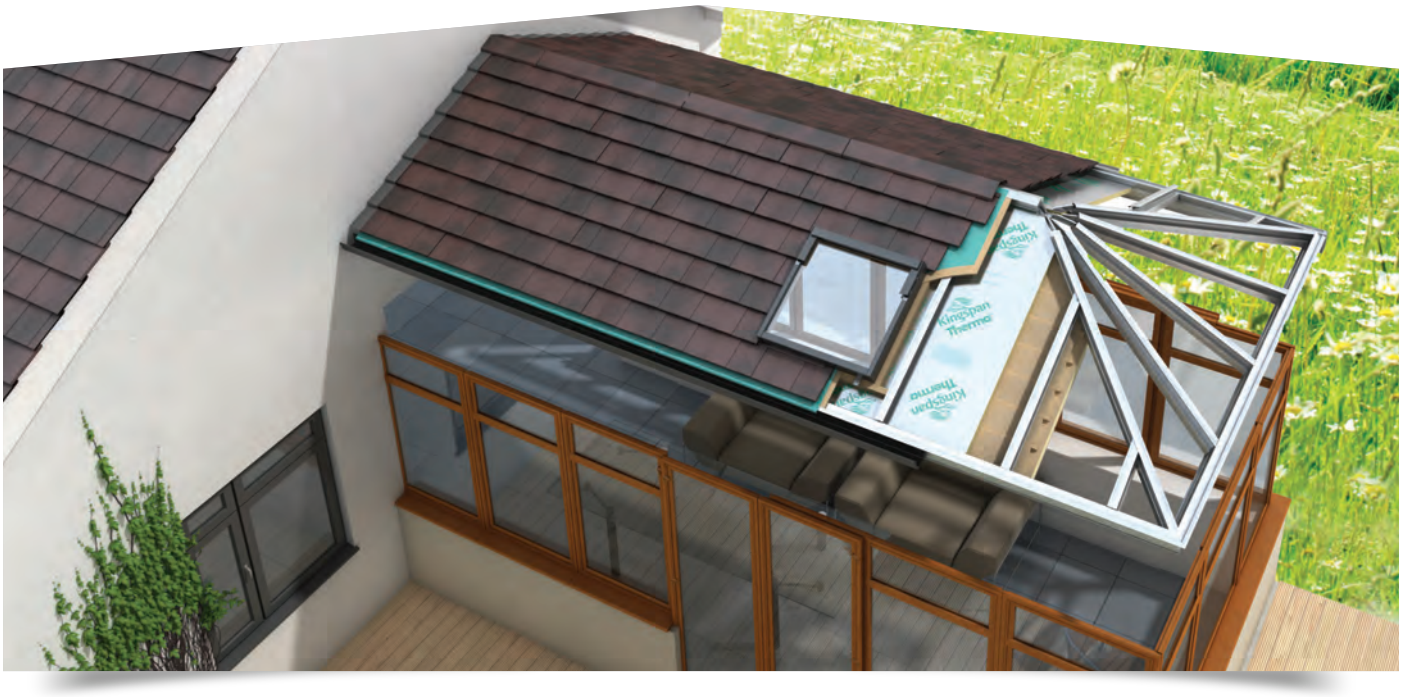
Is your existing conservatory roof:

Too hot in summer or too cold in winter? I Waste of valuable living space? I Unable to relax to watch TV?

Transform your conservatory into a comfortable, all year round living space...

...with the Guardian™ Warm Roof Conversion System:

High performance insulated warm roof conversion system I Lightweight aluminium frame
Provides energy cost savings I Reduces rain noise and glare



The Guardian™ Warm Roof System is the biggest revelation to hit the home improvement market in the last ten years.

You can now change your old conservatory roof for a new Guardian™ Roof and effectively turn your old conservatory into a new extension that can be used all year round. The complete changeover takes just a few days with very minimal disruption to your household.

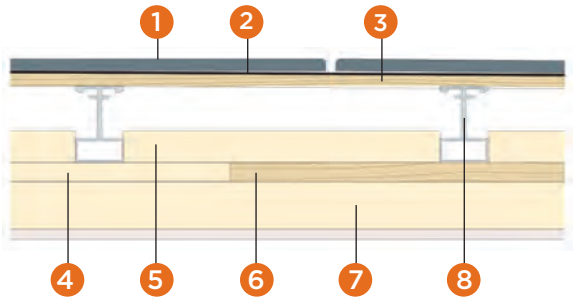
The Roof System is designed to replace the existing glass or polycarb roof of a conservatory while retaining the original windows, doors, frames and walls. At the same time providing substantial energy cost savings.

Fully tested and approved to all thermal and structural standards, the Guardian™ System is a high performance insulated roof system comprising of a pre-engineered lightweight frame, two layers of rigid insulation board, internal insulated plasterboard, exterior grade plywood, vapour membrane and a choice of external tile finishes.

With planning consent, internal dividing doors or walls can be removed to provide a permanent extension to your living room, kitchen, etc.

The affordable Guardian™ Warm Roof Conversion System

- LABC Approval (Building control England & Wales)
- LABSS Approval (Building control Scotland)
- Reduced fuel bills for the life of the roof
- Comfortable ambient temperature all year round
- A wide range of roof colours & finishes available
- Fast installation utilising existing walls, windows and doors via our **nationwide installer network**
- Achieves a U-value of 0.18 (England & Wales) and 0.15 (Scotland)
- Thermal, structural and condensation risk tested
- Fully guaranteed

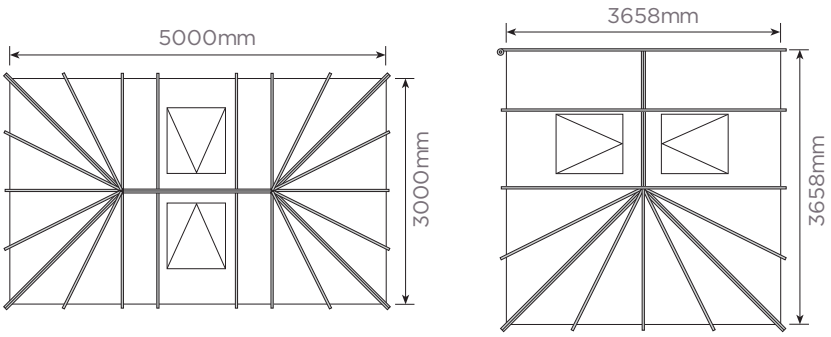


1	Choice of tile finishes
2	Membrane
3	Exterior grade plywood
4	25mm high performance insulation (timber batten cut back for clarity)
5	40mm high performance insulation
6	Timber battens
7	72mm high performance insulated plasterboards
8	Rafter

Roof design options

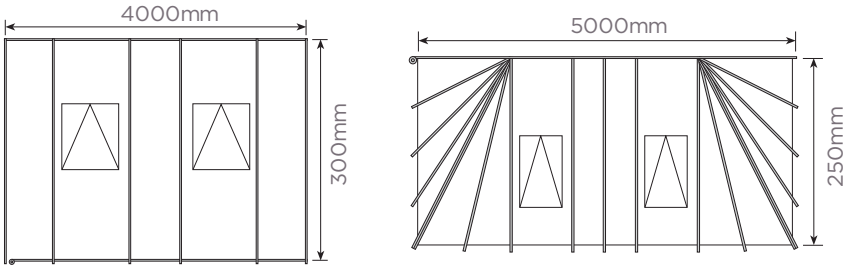
Guardian™ roof provide standard warm roof solutions for existing conservatory roof design. Bespoke solutions also available.

Edwardian



The Edwardian Guardian™ Roof is the classic shape sunroof. It is very sympathetic to most house styles and is the traditional safe bet for style and convenience. The Edwardian Guardian™ Roof shape helps to maximise the room space below and can be the perfect style for a dining room, games/playroom or simply an additional comfortable sitting room.

Lean-to



The Lean-To Guardian™ Roof is ideal to maximise space. The roof ends can have either one or two hips (slopes), it is ideal for kitchen extensions and can go as low as fifteen degrees for roof windows.

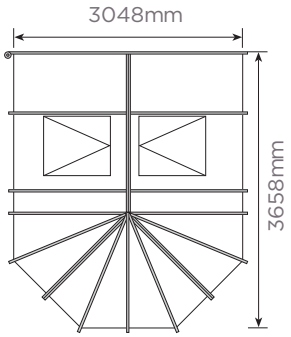
Victorian

Gable ended

Combination

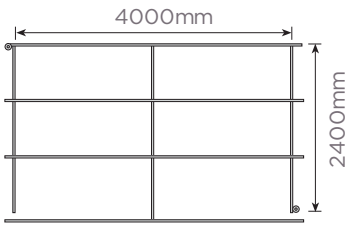
Victorian

The Victorian Guardian™ Roof can look attractive both internally and externally with the facet front finish. Traditionally they have three or five facets on their front elevation.



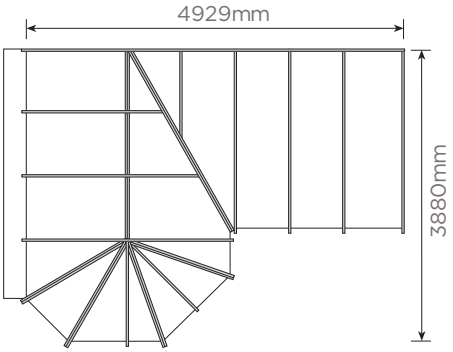
Gable ended

The Gable Ended Guardian™ Roof benefits from continuous height owing to the long ridge down the centre. The gable ended Guardian™ Roof allows you to get the most from the gable ended window resulting in enhanced lighting.



Combination

The Combination Guardian™ Roof combines the benefits of two different styles to maximise your living environment. The combination can also come as a T-shape – as individual as you are.



What you need to know

The Guardian™ Warm Roof Conversion System has been designed to provide a high performance thermal and structural solution with zero condensation risk over the life of the roof.

registered LABC
Registration No. RD320

LABSS
Local Authority Building Standards Scotland

LABSS Approval

LABSS Approval

Each of these elements has been fully tested and approved by independent industry experts to evaluate thermal performance, structural performance, condensation risk and quantify energy savings.

The Guardian™ roof best practice approach has enabled the Local Authority Building Control (LABC) to certify the Guardian™ Roof System as a LABC Registered System.

In some cases the Guardian™ roof conversion would be exempt if it was at ground level, does not exceed 30m2 floor area, be thermally separated from the building it is attached to, have an independent heating system from the main building and have glazing that meets Part N in the critical zones.

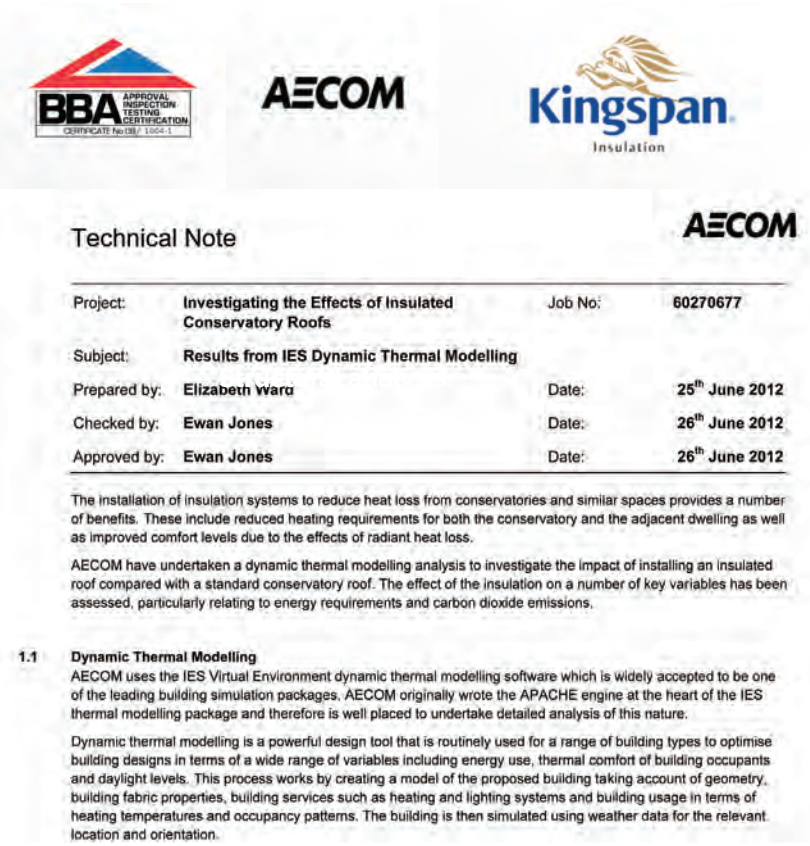
However, Building Control approval should always be sought. But with Guardian™ systems being LABC certified, this process should proceed without complication.

The Guardian™ Warm Roof Conversion System is fully compliant for use in a conventional situation such as an extension and has been fully approved by LABC for use as a full replacement conservatory roof.

With Building Control approval, Guardian™ high performance insulated roof conversions may allow the removal of the wall between the house and the conservatory, offering the flexibility to extend and enlarge an existing kitchen, living room or bedroom.

Please consult your installer for more details.

Kingspan thermal analysis & Kingspan Insulation condensation risk analysis



Technical Note

AECOM

Project:	**Investigating the Effects of Insulated Conservatory Roofs**	Job No:	**60270677**
Subject:	**Results from IES Dynamic Thermal Modelling**		
Prepared by:	**Elizabeth Ward**	Date:	**25th June 2012**
Checked by:	**Ewan Jones**	Date:	**26th June 2012**
Approved by:	**Ewan Jones**	Date:	**26th June 2012**

The installation of insulation systems to reduce heat loss from conservatories and similar spaces provides a number of benefits. These include reduced heating requirements for both the conservatory and the adjacent dwelling as well as improved comfort levels due to the effects of radiant heat loss.

AECOM have undertaken a dynamic thermal modelling analysis to investigate the impact of installing an insulated roof compared with a standard conservatory roof. The effect of the insulation on a number of key variables has been assessed, particularly relating to energy requirements and carbon dioxide emissions.

1.1 **Dynamic Thermal Modelling**

AECOM uses the IES Virtual Environment dynamic thermal modelling software which is widely accepted to be one of the leading building simulation packages. AECOM originally wrote the APACHE engine at the heart of the IES thermal modelling package and therefore is well placed to undertake detailed analysis of this nature.

Dynamic thermal modelling is a powerful design tool that is routinely used for a range of building types to optimise building designs in terms of a wide range of variables including energy use, thermal comfort of building occupants and daylight levels. This process works by creating a model of the proposed building taking account of geometry, building fabric properties, building services such as heating and lighting systems and building usage in terms of heating temperatures and occupancy patterns. The building is then simulated using weather data for the relevant location and orientation.

Kingspan Insulation

BS EN ISO 6946:2007)

Mark Stevens

BBA

Client : Merthorne Engineering Design
Contract : Example roof calculations
Structure element : Pitched or mansard roof, ceiling at fine
Description : Pitched roof - Ventilated
File reference : 1FF53565C.FCF
Humidity Class: 3 - Dwellings with low occupancy
Location: 4 Midlands

Condensation calculations performed in accordance with BS

Month	Int (°C)	Int (%RH)	Ext (°C)	Ext (%RH)	Prediction of mould growth	Prediction of surface condensation
January	20.00	51.20	1.10	88.00	No	No
February	20.00	50.80	1.10	87.50	No	No
March	20.00	59.50	3.20	83.50	No	No
April	20.00	58.40	5.80	79.50	No	No
May	20.00	60.00	8.60	80.00	No	No
June	20.00	52.30	12.00	78.50	No	No
July	20.00	55.10	13.80	79.00	No	No
August	20.00	66.20	13.40	81.50	No	No
September	20.00	64.30	11.20	83.50	No	No
October	20.00	52.80	8.00	87.00	No	No
November	20.00	51.10	4.00	86.00	No	No
December	20.00	51.30	2.20	89.50	No	No

fRsi for mould growth = 0.986
fRsi,max for mould growth = 0.776
GC = Monthly moisture accumulation = 0.616
Ma = Accumulated moisture content per area at an interface
Peak accumulated moisture content per area at interface (Ma) = 0.000 Kg/m²
Annual moisture accumulation (Ma) = 0.000 Kg/m²

Internal 61.2%RH

25°C 20°C 15°C 10°C

Aecom energy saving study

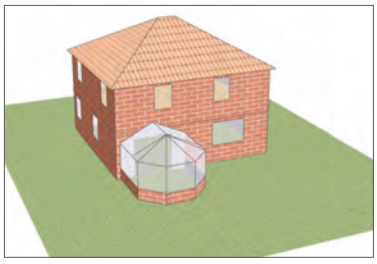
AECOM modelled a typical house with a standard "Victorian 12' x 12'" conservatory.

The conservatory was northward projecting with an electric heating system. A future energy price forecasts was accounted for under the "Green Stimulus" price forecast that yielded a saving of £5,447 after 25 years.

The key conclusion drawn from this evaluation is that the greatest benefits from installing the "Guardian™" roof are made when it is retrofitted, as a result of the greater difference between the U-values of the original roof and the new roof type.

Any of the above reports are available on request from Guardian™ Warm Roofs, please visit: www.guardianwarmroof.co.uk

Modelling Methodology and Key Modelling Inputs



The Guardian™ Service Package

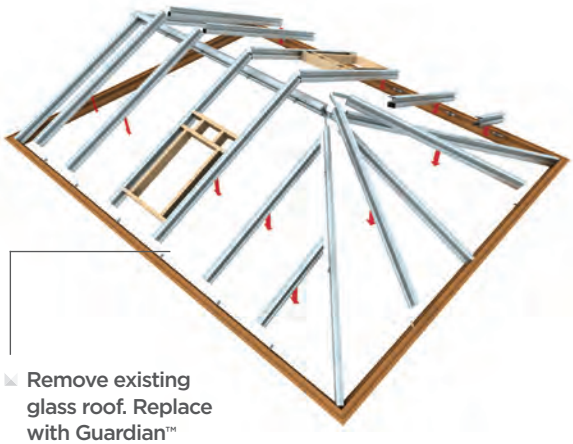
Building work of any kind can be a daunting process. The Guardian™ Service Package is the hassle-free way to achieve the roof conversion you want. We will manage your project and keep you informed at every stage, providing a seamless process from your original enquiry, through Planning Permission to final installation and completion.

5 Weeks

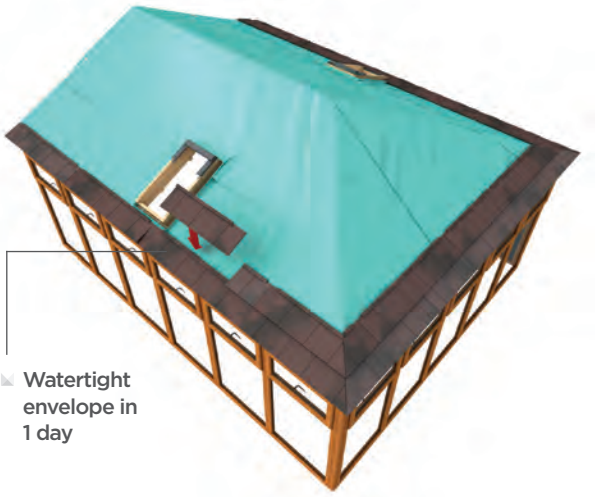
From enquiry onto home visit through to design and manufacture. The Guardian™ Conservatory Roof is a unique an innovative product that will enhance your home.

Designed and built in our 80,000 sq ft production plant the Guardian™ Conservatory Roof will be delivered to your home ready to be constructed by one of our professional installation teams.

Transform your living environment in twelve simple steps

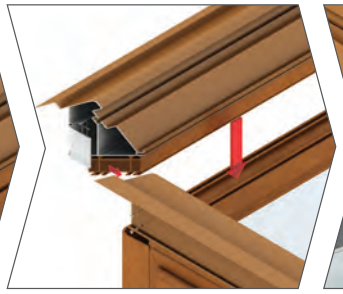


Remove existing glass roof. Replace with Guardian™ Warm Roof ring beam

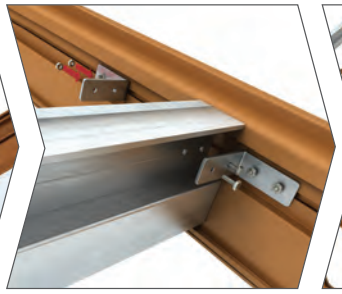


Watertight envelope in 1 day

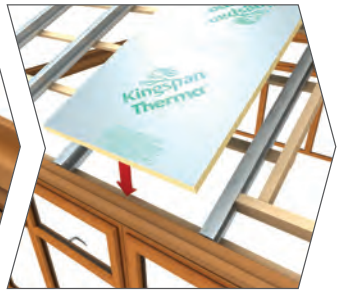
Fix box gutter to existing wall



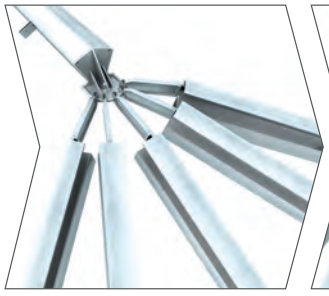
Fix ring beam to existing windows



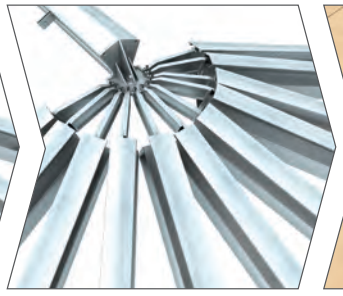
Fix rafters to ringbeam



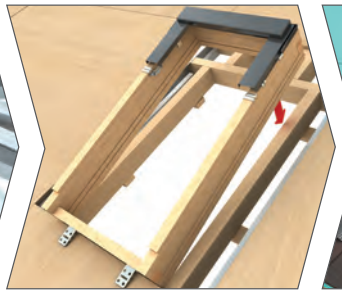
Install external insulation



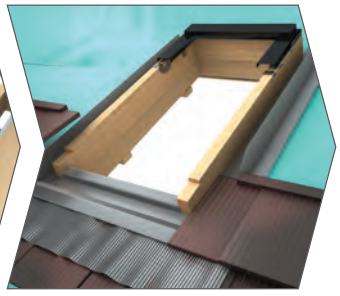
Edwardian conservatory



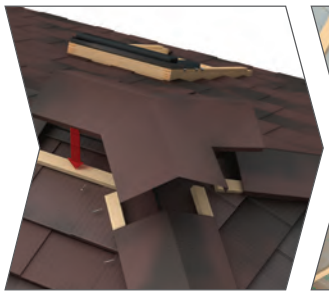
Victorian conservatory option



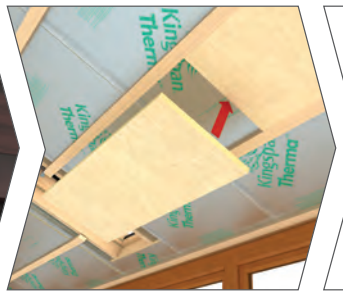
Install roof window frame



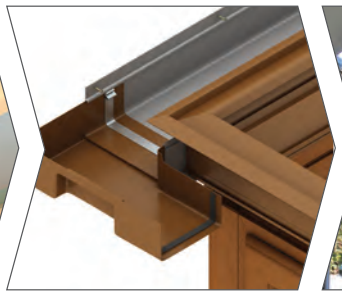
Install roof window



Fix rafter cap and ridge



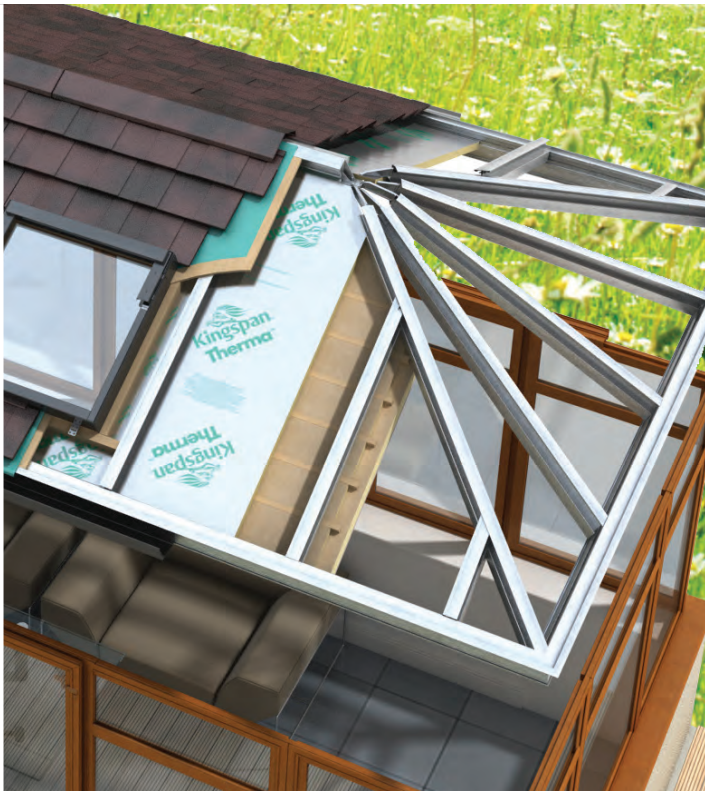
Install insulation between batten



Fit gutter

Plaster ceiling

Gallery



Your Guardian™ Roof will not only look beautiful,
it will also **reduce** your heating bills.

Gallery

If you're looking for a specific, unusual or particular type of roof and can't find it on our gallery please let us know and we'll try and source it for you.

External Finishes

There is a brilliant range of external finishes available for your new space. From a selection of attractive roof tiles to optional Fakro roof windows maximising the amount of natural light in your room.

TAPCO SLATE

Tapco Slate gives you an authentic and attractive look from a product that carries a 50 year warranty.

A massive choice of colours available!

Traditional UK slate colours available in stock:

Stone Black | Pewter Grey | Plum | Brick Red

All other colours on extended delivery.

Tapco Slate is a premium product with premium performance, offering beauty that is built to last, the highest performance ratings, and a transferable 50-year limited warranty.

LIMITED LIFETIME WARRANTY

Alternative Slate Colours

Dover Grey | Slate Grey

Charcoal Grey | Emerald Green

Chestnut Brown | Moss Green

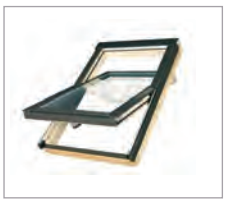
Forest Green

Blends

Grey/Black

Green/Grey

Plum/Green



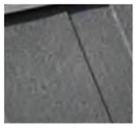
FT Centre Pivot Windows with *VP04 Automatic air vent

metrotile
LIGHTWEIGHT ROOFING

Metrotile matches closely to your existing house roof and carries a 40 year warranty.

- Lightweight high grade steel with aluzinc® coating for incredible strength and resistance
- Unique "hidden fix" feature leaves no nails exposed to corrosion
- Designed to be suitable for pitches as low as 15°

Standard colours available in stock:


Ebony

Antique Red

Burnt Umber

Charcoal

FAKRO®

- Manufactured in pine, vacuum impregnated and coated with acrylic lacquer
- Handle positioned on the lower part of the sash for easy operation, and secured open in two positions
- Suitable for roofs with pitches between 15° and 90° (complete with flashing)
- Wide range of accessories

FT centre pivot windows are the most popular type of FAKRO roof window. The well-designed centre pivot allows the sash to be opened in a range of positions, thus increasing the amount of fresh air which can be drawn into the room. The sash can also be rotated through 180° and locked, allowing easy and safe cleaning of the outer pane to be carried out. Such pivot windows are operated using a two-part hinge.

* As the air inlet is positioned at the point of the frame, FAKRO windows have a 6% greater surface area when compared with similar sized windows made by other manufacturers. As a result they maximise the amount of natural light in a room. Non-standard specifications, such as windows with automatic air-vents, are available to order: FTP-V/H, FTP-V/P. Also available in conservation style.

Guardian™ Conservatory Roofs

The only certified solution

GRAND DESIGNS 4

Guardian™ Warm Roof

BRIGHT WINDOWS

Bright Windows
9 Combe Hill
Combe St Nicholas
Nr Chard
Somerset
TA20 3NW