**Roof options**

To provide roofing solutions for Cut / Vaulted Roof and Flat Roofs, MBC utilise open metal web Posi Joists which see parallel timber flanges plated together with an engineered steel web component. The steel webs are plated in a ‘V’ formation, providing a lightweight structural roof joist, or flat roof joist, that can span greater distances in comparison to standard solid joists. Insulation is fitted by MBC within the roof structures, with the insulation located in between the Posi Joists.

**Metal Web Joists**

MBC Timber Frame design and manufacture metal web joists. These are used within all of our timber frame systems and are also available on a supply only basis for traditional build projects.

Metal web joists make running services much quicker and easier, they are also able to span great lengths without the need for additional steel work.

**Trusses**

With our inhouse roof designer and truss press, MBC are able to utilise a wide range of trusses within our projects, these are also available on a supply only basis.

From floor trusses, to attic and raised tie trusses these are manufactured to the highest quality.

**Cut / Vaulted Roof System**

- U-Value: 0.10W/m²K

**Posi Joist Flat Roof System**

- U-Value: 0.10W/m²K

**Cut / Vaulted Roof System**

- U-Value: 0.14W/m²K

**Posi Joist Flat Roof System**

- U-Value: 0.13W/m²K

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**Cellulose Insulation**

**Engineered Rafter**

**25mm Ceiling Service Cavity Batten**

**VCL / Ceiling Airtight Membrane**

**25mm x 50mm Counter Batten**

**OSB Deck**

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**50mm minimum firring piece**

To create fall & full ventilation

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**9mm OSB & Breather Membrane**

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**PIR Insulation**

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**Superb energy efficient passive homes - reduced energy costs**

UK Office: Quedgeley Court, Shepherd Road, Gloucester, GL2 SEL.

mbctimberframe.co.uk  Tel: 01452 346499  info@mbctimberframe.co.uk  twitter.com/MBCTimberFrame  facebook.com/mbctimberframe
High Performance Range

The MBC closed panel system offers a variety of insulation options based around a 140mm dual timber frame. This section below details a U-Value of 0.14 W/m²K - 0.11 W/m²K with a 140mm dual timber frame.

Wall options

The MBC closed panel system incorporates many of the philosophies used in the passive system. All systems offer excellent tightness and are significantly greener than building regulation requirements.

Wall insulation options based around a 140mm stud timber frame. The section below details a U-Value of 0.14 W/m²K. Insulation options include:

- 300mm Cellulose Insulation
- 25x50mm Counter Battens
- Engineered 300mm Rafter
- 80mm PIR Rigid Insulation Full Height Between Joists
- External Leaf (if required)
- TF200 Thermo Reflective Mineral Wool Insulation

Foundations

The passive foundation dealer is a U-Value of 0.05 – 0.06 W/m²K and is designed to complete the continuously insulated envelope of the passive system. This is achieved by the insulation on the walls, slabs on the insulation in the foundation, removing what is usually a very difficult junction to overcome thermally. Many of our customers also incorporate the MBC foundation system into their standard timber frame projects, our experience shows that there is huge value in one company being responsible for the entire structural thermal envelope of foundations, walls and roof.

- Engineered Twin Wall - Suitable for all external finishes ie: brick, render, Cladding
- Passive Standard Twin Wall System - delivers U-Value from 0.105W/m²K - 0.13W/m²K

Passive House Technical Section

- Perimeter landscaping, footpath, paving & backfilling by others
- Airtight Membrane wrapped around junction of floor joist
- 300mm Cellulose Insulation
- 25x50mm Counter Battens
- Engineered 300mm Rafter
- 80mm PIR Rigid Insulation Full Height Between Joists
- External Leaf (if required)
- TF200 Thermo Reflective Mineral Wool Insulation

- Service Ducts Fitted & brought out 1 meter from edge of EPS
- Service Ducts Fitted & brought out 1 meter from edge of EPS
- 140mm Stud Wall - U-Value 0.14W/m²K

- Perimeter Ringbeam Footing
- 38mm Service Cavity Batten
- Airtight Membrane
- VCL / Foil Reflective

- 38mm Wall Service
- 22mm Ceiling Service
- Vapour Control Layer

- 300mm EPS Insulation
- Reinforced Concrete Slab

- 300mm Twin Studs – 38mm x 140mm x 38mm Timber Studs

- 122mm apart with 300mm

- 140mm x 38mm Timber Studs

- 110mm PIR

- 50mm PIR

- 9mm OSB External Sheathing

- 22mm Chipboard & Fitted by others

- 38mm Service Cavity Batten

- Airtight Membrane

- VCL / Foil Reflective

- Child’s Play

- Breathable wall protects thermal envelope

- From 0.105W/m²K – 0.13W/m²K

- From 0.105W/m²K – 0.13W/m²K

- From 0.105W/m²K – 0.13W/m²K