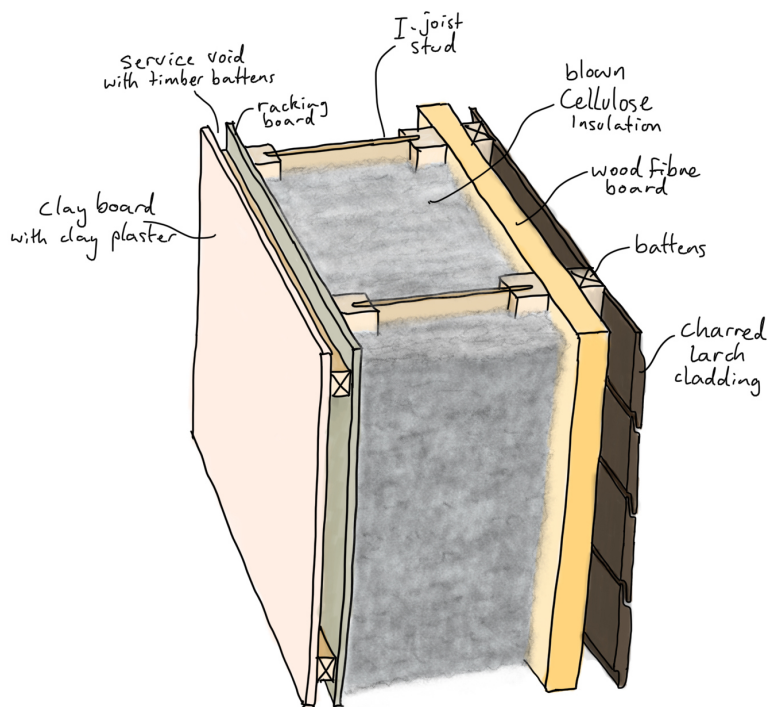


WALL : I-JOIST PANEL WITH BLOWN CELLULOSE



Construction:

This model features a pre-fabricated wall panel made by Eden Insulation (excluding finishes). It is constructed from a pre-fabricated I-Joist timber panel filled with blown insulation.

Materials:

Materials used in this example panel are:

- Charred larch cladding on timber cladding battens
- Timber wall panel by Eden insulation consisting of:
 - Vapour open Breather Membrane: 'Fronta Humida' by Pro Clima
 - Rigid wood fibre board 'Multiplex Top' by Gutex
 - I-Joist frame: 'Finnjoist' by Metsa Wood
 - Blown Cellulose insulation by Warmcell
 - AVCL (airtight vapour control layer) structural racking board: 'Smartply Propassiv' by Medite
 - Timber service cavity battens
- Clay board / timber v-line boarding

Performance:

Typical U-Value = 0.13 W/m²K - 0.16 W/m²K *

* *Varies. Based on thickness of materials shown*

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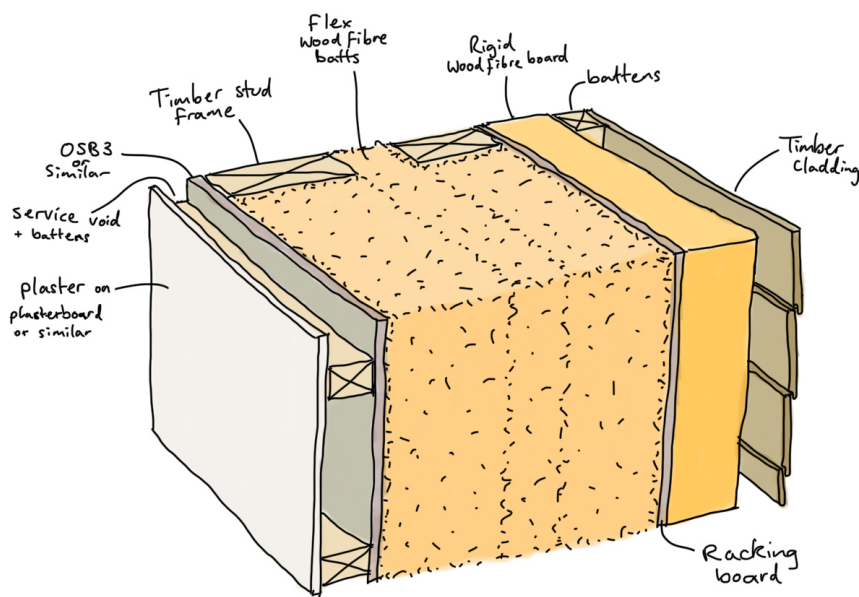
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WALL : TWIN-WALL TIMBER FRAME



Construction:

This model features a twin-wall timber frame wall panel. It is constructed from two timber frames connected via plywood gussets to create a thermal break, all filled with wood fibre insulation.

Materials:

Materials used in this example panel are:

- Untreated larch cladding on timber cladding battens
- Timber frame wall consisting of:
 - Rigid wood fibre: 'Multitherm' by Gutex
 - Vapour open racking board: 'Populair' by Spano Durelis
 - Twin-wall timber stud layers with plywood connecting gussets (*note: gussets at closer centres to suit model*)
 - Flexible wood fibre insulation batts: 'Steico Flex' by Steico
 - Vapour open AVCL (airtight vapour control layer) structural racking board: 'Vapour Block' by Spano Durelis
 - Timber service cavity battens
- Clay board - this could be finished with a clay or lime plaster

Performance:

Typical U-Value = 0.11 W/m²K *

* *Varies. Based on thickness of materials shown*

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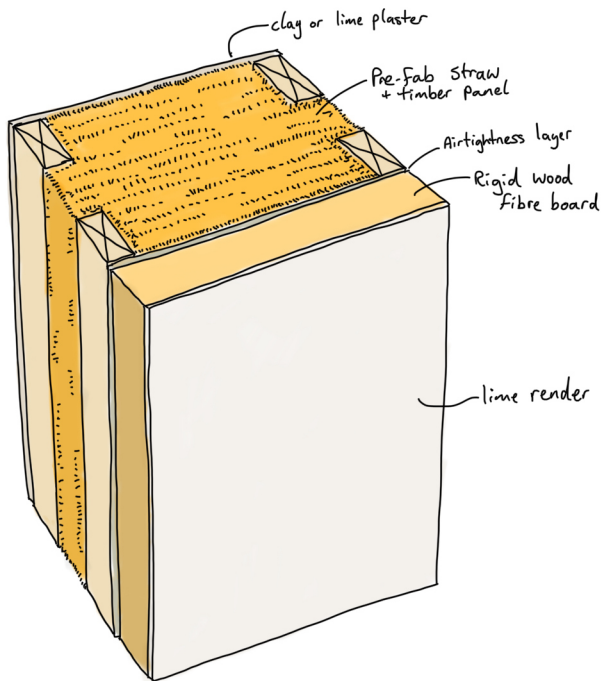
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WALL : PRESSED STRAW PANEL



This model is a pre-fabricated wall panel made by EcoCocon. It is constructed from pressed straw in a timber frame. It is typically used with a rigid wood fibre board and a lime render externally. Internally it provides an ideal surface for clay plaster, and it is also compatible with a variety of standard interior finishes.

Materials:

Materials used in this example panel are:

- Timber studs by EcoCocon
- Pressed straw by EcoCocon

Performance:

Typical U-Value = 0.123 W/m²K *

* Based on an average EcoCocon wall with 30 mm clay plaster, 400 mm timber-straw panel, and 60 mm wood fibre board.

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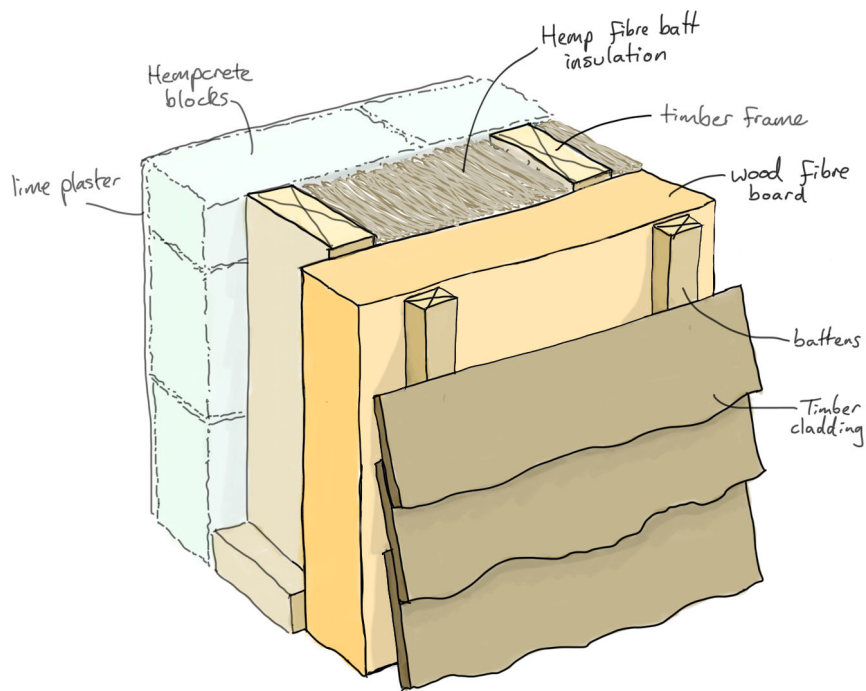
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WALL : HEMP BLOCK + TIMBER FRAME



Construction:

This model features a timber frame wall with a Hempcrete block inner leaf. Externally a variety of finishes are possible, and internally the Hempcrete blocks can be finished with a lime plaster.

Materials:

Materials used in this example panel are:

- Untreated timber cladding on timber cladding battens
- Wood Fibre insulation board
- Timber frame wall consisting of:
 - Hemp batt insulation
 - Timber frame
- Hempcrete blocks

Performance:

Typical U-Value = 0.20 W/m²K *

* *Varies. Based on thickness of materials shown*

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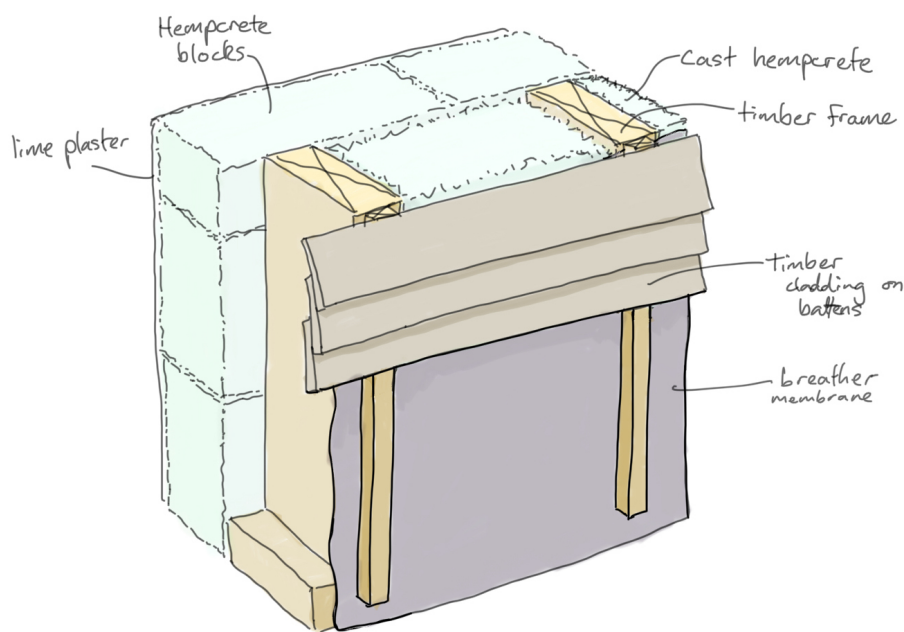
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WALL : HEMPCRETE + TIMBER FRAME



Construction:

This model features a timber frame wall with a Hempcrete fill. Hempcrete is made by wet-mixing hemp shiv with a lime binder. Externally a variety of finishes are possible, and internally the Hempcrete can be finished with a lime plaster.

Materials:

Materials used in this example panel are:

- Untreated timber cladding on timber cladding battens
- Vapour Open Breather Membrane
- Timber frame wall consisting of:
 - Hempcrete insulation
 - Timber frame
- Hempcrete blocks

Performance:

Typical U-Value = 0.27 W/m²K *

* *Varies. Based on thickness of materials shown*

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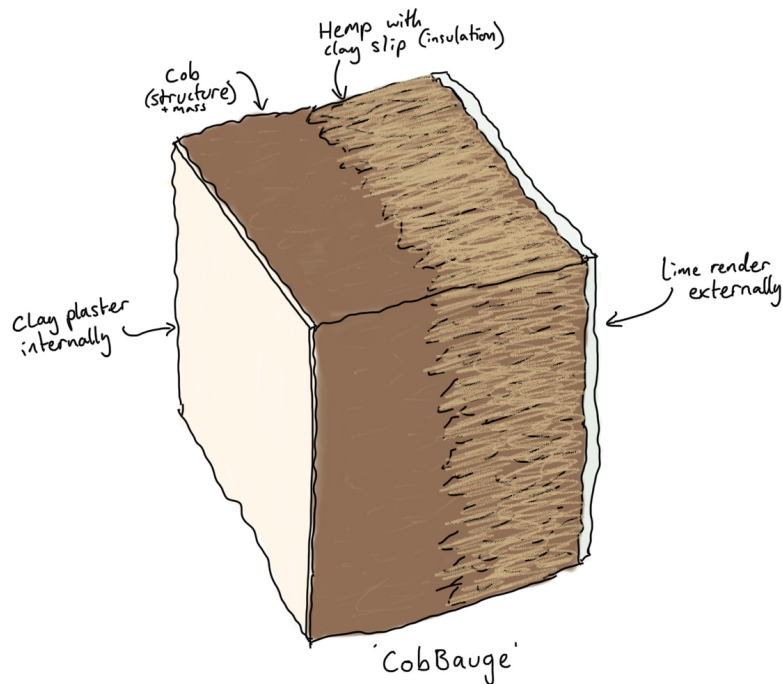
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WALL : COBBAUGE



Construction:

This model features a sample of a CobBauge wall by Hudson Architects. It is constructed from two parts: an outer layer of light-straw mixed with clay slip, and an inner layer of cob, providing the structure and thermal mass. It is typically finished with a lime render externally. Internally the cob provides an ideal surface for clay plaster. This construction builds on the principles of traditional cob whilst introducing a unique double-layered composite wall that combines traditional cob with a light weight mixture, for a combination of strength and insulation.

Materials:

Materials used in this example panel are:

- Light-straw mix
- Cob made from local soils

Performance:

Typical U-Value = 0.28 W/m²K *

* Depends on thickness of materials

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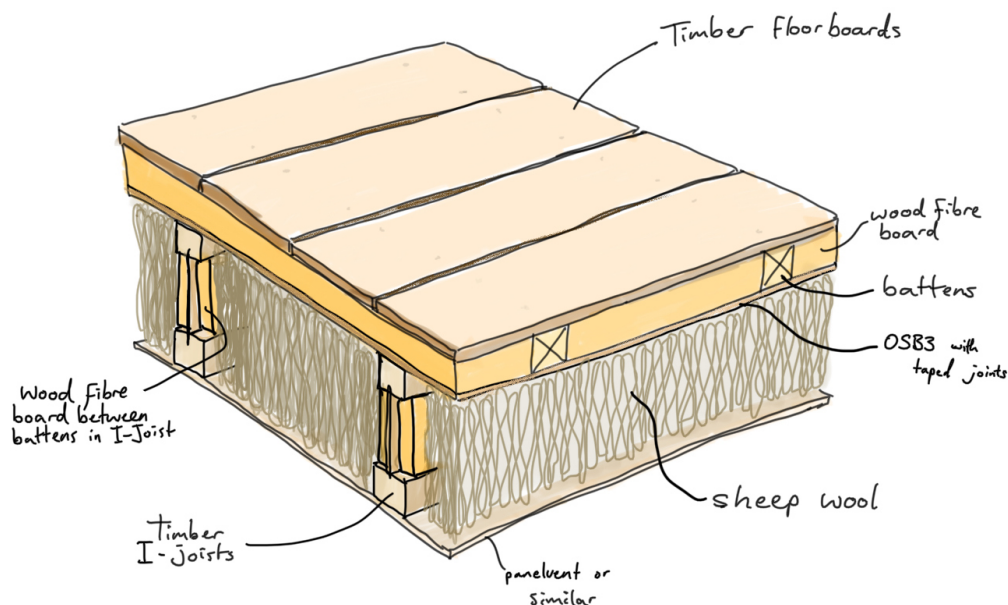
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FLOOR : SUSPENDED I-JOIST FLOOR



Construction:

This model features a suspended timber I-Joist floor with flexible insulation between the joists. There is also an additional layer of insulation between a batten space over the joists.

Materials:

Materials used in this example panel are:

- Engineered timber floor boards
- Timber battens with rigid wood fibre insulation between: 'Pavatherm-Combi' insulation by Pavatex
- Airtight board with taped joints: OSB
- Timber I-Joists
- Flexible insulation batts: 'Hemp Flax Thermo Combi Jute' by HempFlax
- Plywood

Performance:

Typical U-Value = 0.11 W/m²K *

* *Varies. Based on thickness of materials shown*

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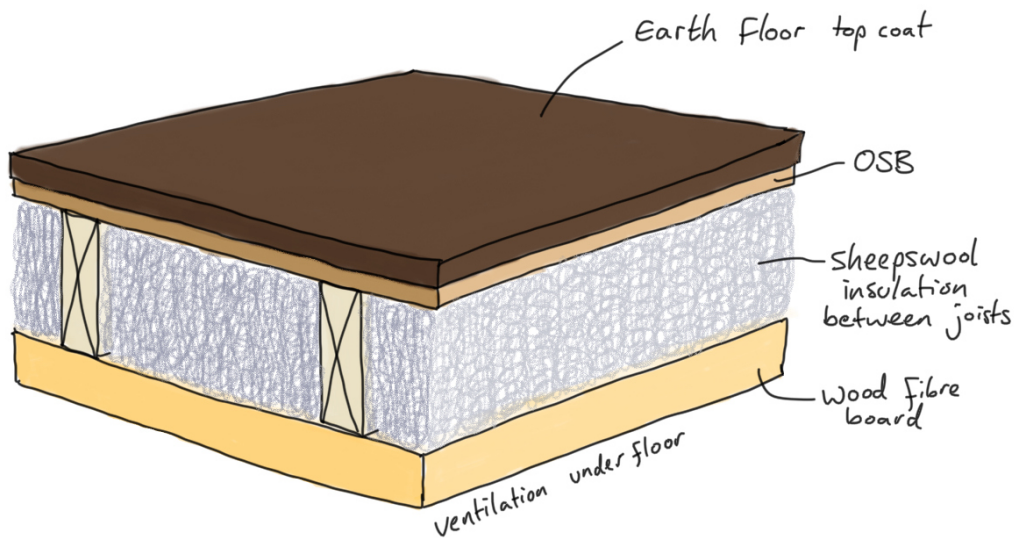
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FLOOR : EARTH TOPPED I-JOIST FLOOR



Construction:

This model features an earth top coat over a suspended timber I-Joist floor with flexible insulation between the joists, and demonstrates that earth floor coverings are possible with a suspended floor structure.

Materials:

Materials used in this example panel are:

- Earth top coat
- OSB board
- Timber I-Joists
- Flexible insulation batts: 'Thermafleece Cosywool' by Thermafleece
- Rigid wood fibre insulation: 'Pavatherm-Combi' insulation by Pavatex

Performance:

Typical U-Value = 0.16 W/m²K *

* *Varies. Based on thickness of materials shown*

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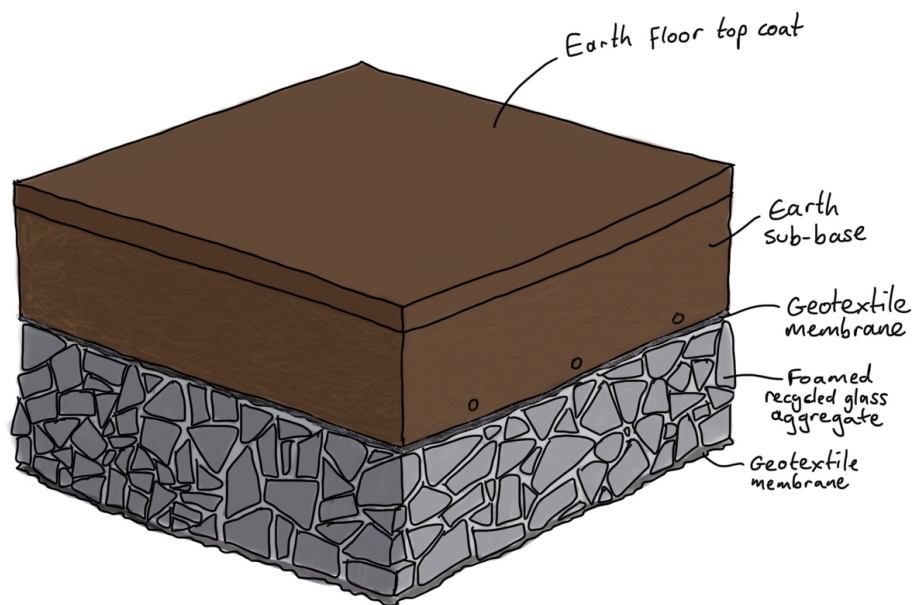
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FLOOR : EARTH TOPPED GROUND BEARING FLOOR



Construction:

This model features an earth top coat over a ground bearing floor construction.

Materials:

Materials used in this example panel are:

- Earth top coat
- OSB board
- Earth sub-base
- Geotextile membrane
- Loose fill insulating aggregate: 'Cellular glass gravel' by Glapor

Performance:

Typical U-Value = 0.19 W/m²K *

* *Varies. Based on thickness of materials shown*

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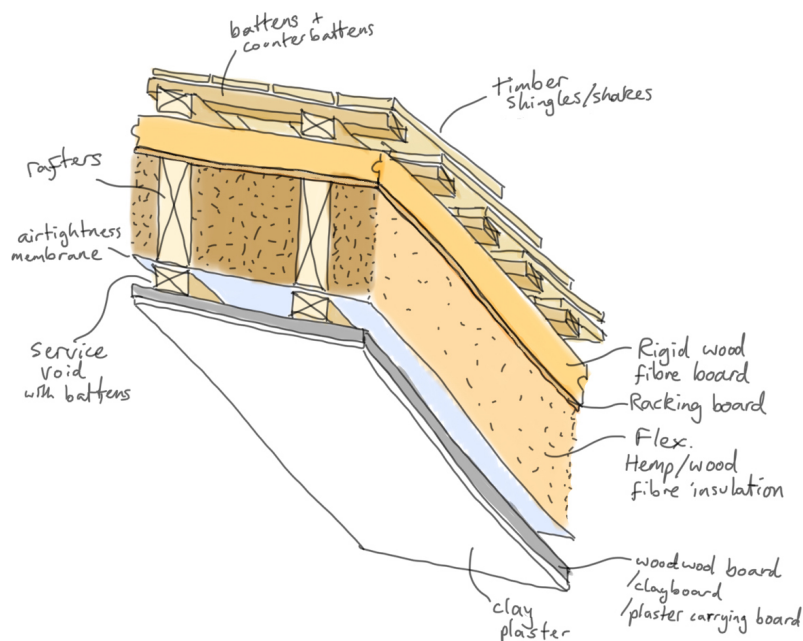
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ROOF : 40° PITCHED SOLID RAFTER ROOF



Construction:

This model features a steep pitched roof construction with solid timber rafters and both flexible and rigid fibre insulations. The external finish is timber shakes, however a variety of cladding materials would be possible.

Materials:

Materials used in this example panel are:

- Untreated timber shakes on timber cladding battens and counter battens
- Rigid wood fibre sarking board: 'Ultratherm' by Gutex
- Timber frame roof consisting of:
 - Timber frame
 - Flexible wood fibre insulation batts: 'Steico Flex' by Steico
 - Variable diffusion AVCL (airtight vapour control layer) membrane: 'Intello Plus' by Pro Klima
 - Timber service cavity battens
- Recycled cellulose-based board: 'Honext' by Honext

Performance:

Typical U-Value = 0.14 W/m²K *

* *Varies. Based on thickness of materials shown*

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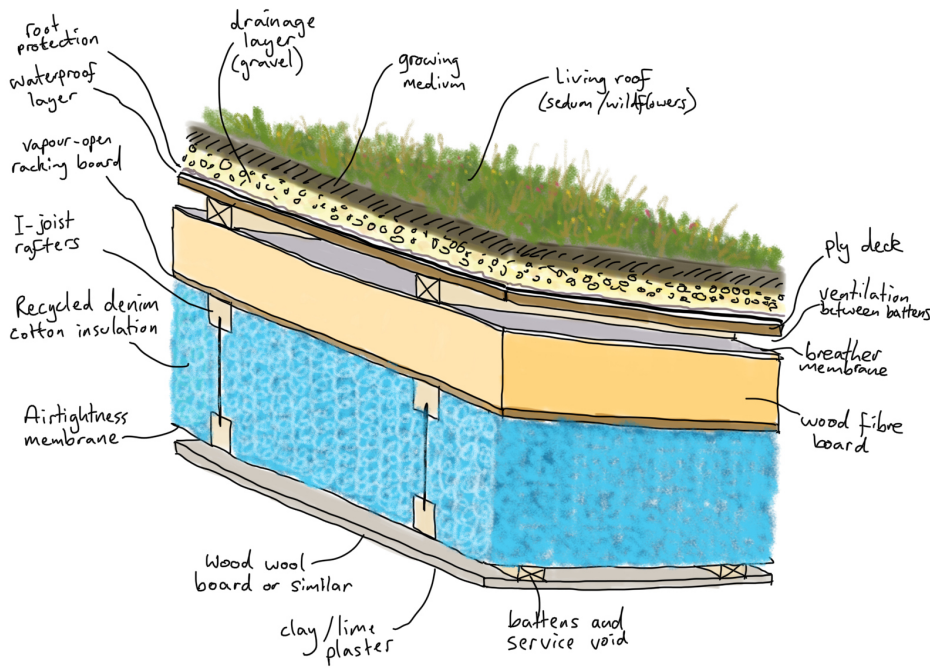
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ROOF : 10° PITCHED I-JOIST RAFTER GREEN ROOF



Construction:

This model features a shallow pitched roof construction with I-Joist timber rafters and both flexible and rigid fibre insulations. The roof is finished with a sedum roof covering system by Bauder.

Materials:

Materials used in this example panel are:

- Sedum roof covering by Bauder consisting of:
 - Extensive sedum blanket by Bauder
 - Biodiverse substrate: growing medium also providing water drainage layer by Bauder
 - Reservoir board: filled with growing medium providing water retention layer by Bauder
 - Recycled Protection Layer: 'FSM 600' by Bauder
 - Recyclable Underlying Waterproofing Membrane: 'Thermoplan FPO' single ply membrane by Bauder
- Plywood deck
- Treated timber battens creating ventilated zone
- Vapour open Breather Membrane: 'Solitex Plus' by Pro Clima
- Rigid wood fibre sarking board: 'Ultratherm' by Gutex
- Vapour Open Racking board: 'Panelvent DHF' by Panel Agency
- Timber frame roof consisting of:
 - I-Joist frame: 'Steico I-Joist' by Steico
 - Recycled cotton / denim insulation 'Inno-Therm' by Le Relais
- Variable diffusion AVCL (airtight vapour control layer) membrane: 'DB+' by Pro Clima
- Timber service cavity battens
- Wood wool or clay board - either could be finished with a clay or lime plaster

Performance:

Typical U-Value = 0.14 W/m²K *

* *Varies. Based on thickness of materials shown*

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