EcoCocon Designer Guide

ECOCOCON® STRAW WALL SYSTEM



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01 Product Description & Use

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EcoCocon offers a complete prefabricated building system that integrates structure, insulation, and airtightness in one solution.

The system’s variability and digital fabrication enable precise adaptation to diverse architectural forms and structural requirements, without compromising thermal performance.

With EcoCocon you can offer your clients one of the best future-proof solutions.

Use of Panels

EcoCocon Straw Panels are suitable for the construction of both residential and non-residential buildings. They can be used in all climate zones, except in areas with permafrost.

A GALLERY OF EXAMPLES



Family house



Apartment house



Highrise apartment building



Public building

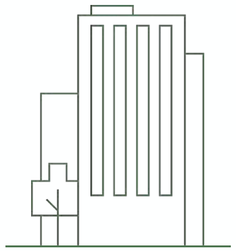


School

Suitable Applications







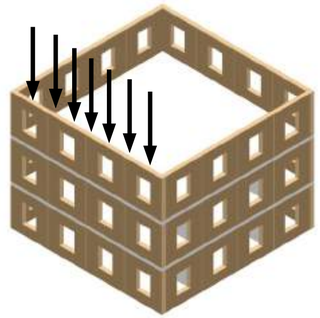
EcoCocon panels offer versatile structural solutions for:

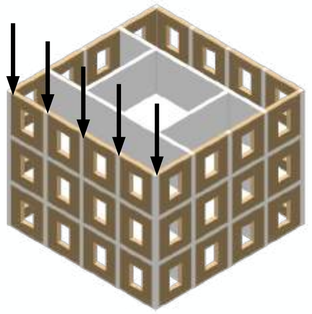
» **low-rise** buildings 1–3 storeys (up to ~10 m). EcoCocon is the main structural wall system.

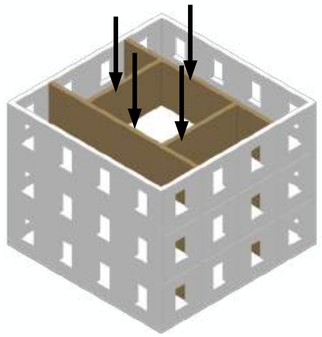
» **mid-rise** buildings 4–7 storeys (~10 – 22 m). Can be used in combination with other structural systems (e.g. CLT/Glulam, concrete, or steel) in a hybrid approach.

» **high-rise** buildings 8+ storeys (over ~22 m). Used as non-structural infill or external wrapping for CLT, concrete or steel frames.

It is NOT possible to use panels for floor or roof. Panels should not be used for exterior walls below ground level.







EcoCocon panels can serve different structural roles:

Load-Bearing External Walls:

EcoCocon panels can serve as load-bearing external walls for buildings up to 3 storeys (or more with additional structural reinforcement between panels). Panels can easily support floors, roofs, and lightweight facades.

Facade Infill or Wrapping:

EcoCocon can be used in hybrid constructions. The load-bearing structure is provided by CLT, concrete, or steel, while EcoCocon panels serve as non-structural infill or external wrapping. These methods can also be adopted for retrofitting of existing buildings.

Optional Application: Partition Walls

EcoCocon panels can also be used for load-bearing interior walls, offering excellent structural support and sound insulation.

EcoCocon Wall Components

The EcoCocon Straw Panel is the primary custom-made prefabricated wall element. For each project, EcoCocon engineers design project-specific panel types and box elements based on the provided architectural and structural documentation.



Box Elements
(lintels, beams, columns...)

Plywood
(21 mm plywood board on both sides of opening reveals)

Wall System Options
(typically diffusion open airtight membrane and woodfibre boards)

EcoCocon Panels
(many types available: standard, braced, inclined, lintel, sill, and column panels...)

Structural components other than wall panels and box elements, are not provided by EcoCocon.

Panel Types

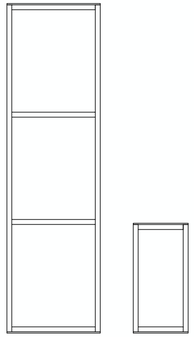
The EcoCocon panel is custom-made and consists of a load-bearing twin-stud timber frame with a straw infill of average homogeneous density of 115 kg/m³.

Panels are produced to specified dimensions in 1 mm increments, with a manufacturing tolerance of ±2 mm per panel in all directions.

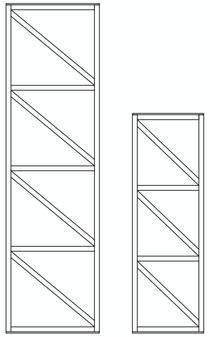
The frame is designed to be modified and adapted for use as a standard, braced, column, inclined, lintel, or sill panel. The top and bottom are enclosed with plywood, while columns also have plywood on two sides for additional stability.

- Panels are produced in 1 mm increments, for architect this means the dimensions of walls and openings must be specified in the drawings exactly (in millimeters).
- The EcoCocon engineering team plans the panel types and their size, according to the loads given by client's engineer.
- Stud spacing is determined by structural calculations and may be adjusted to accommodate fixing of additional layers or boards, e.g. 600/625 mm or 800/833 mm to match standard board lengths of 2400 or 2500 mm.

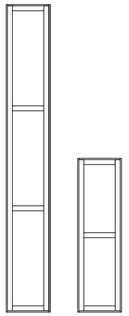
Standard panels



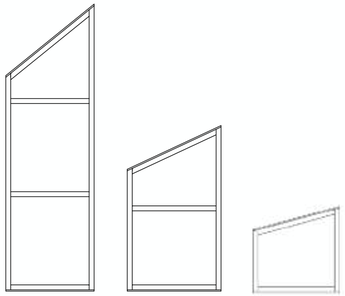
Braced panels



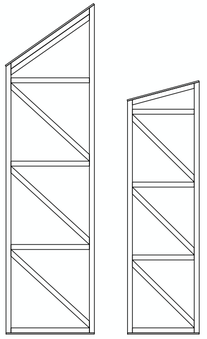
Column panels



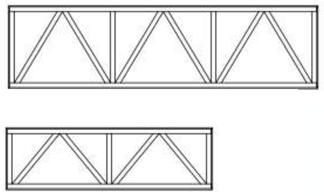
Inclined panels



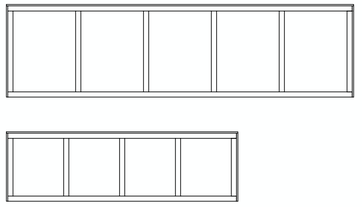
Inclined braced panels



Lintel panels



Sill panels



Refer to Technical Specification on website

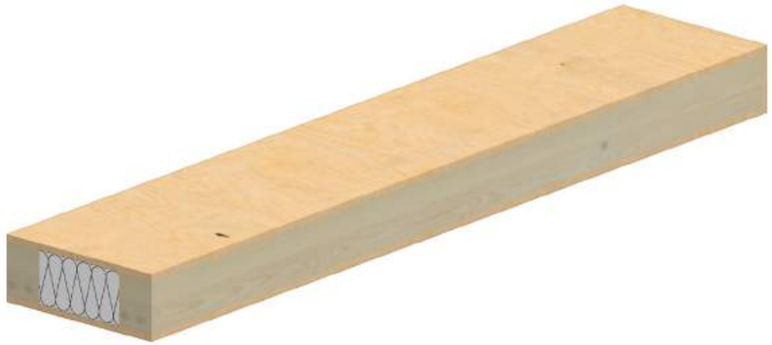
Possible sizes of standard, braced, column & inclined panels are:

Thickness:	from 300 to 400 mm
Width:	from 400* to 850 mm
Height:	from 400 to 3000 mm
*Column:	min. width 424 mm

Possible sizes of lintels and sills are:

Thickness:	from 300 to 400 mm
Width:	from 400** to 3000 mm
Height:	from 424 to 850 mm
**Sill:	min. width 600 mm

Box Elements



To complete the wall, EcoCocon provides box elements for horizontal and vertical placement, designed for demanding load-bearing applications and insulated with wood fibre (50 kg/m³).

They are used as:

- Box lintels for heights lower than 400 mm
- Box lintels for spans larger than 3 m
- Box lintels to carry greater loads
- Horizontal box elements used for fixing the floor
- Vertical box elements as columns supporting wall segments

Low Box Element



High Box Element



Exceptional option (LVL)



Possible sizes of Box elements are:

C24 - (Solid Timber Box)

Thickness:	from 300 to 400 mm
Length:	from 600 to 6000 mm
Height:	from 100 to 270 mm

GLT - (Glued Laminated Timber)

Thickness:	from 300 to 400 mm
Length:	from 600 to 9000 mm
Height:	from 100 to 600 mm

LVL - (Laminated Veneer Lumber)

Thickness:	from 300 to 400 mm
Length:	from 600 to 9000 mm
Height:	from 270 to 600 mm

Column Box Element



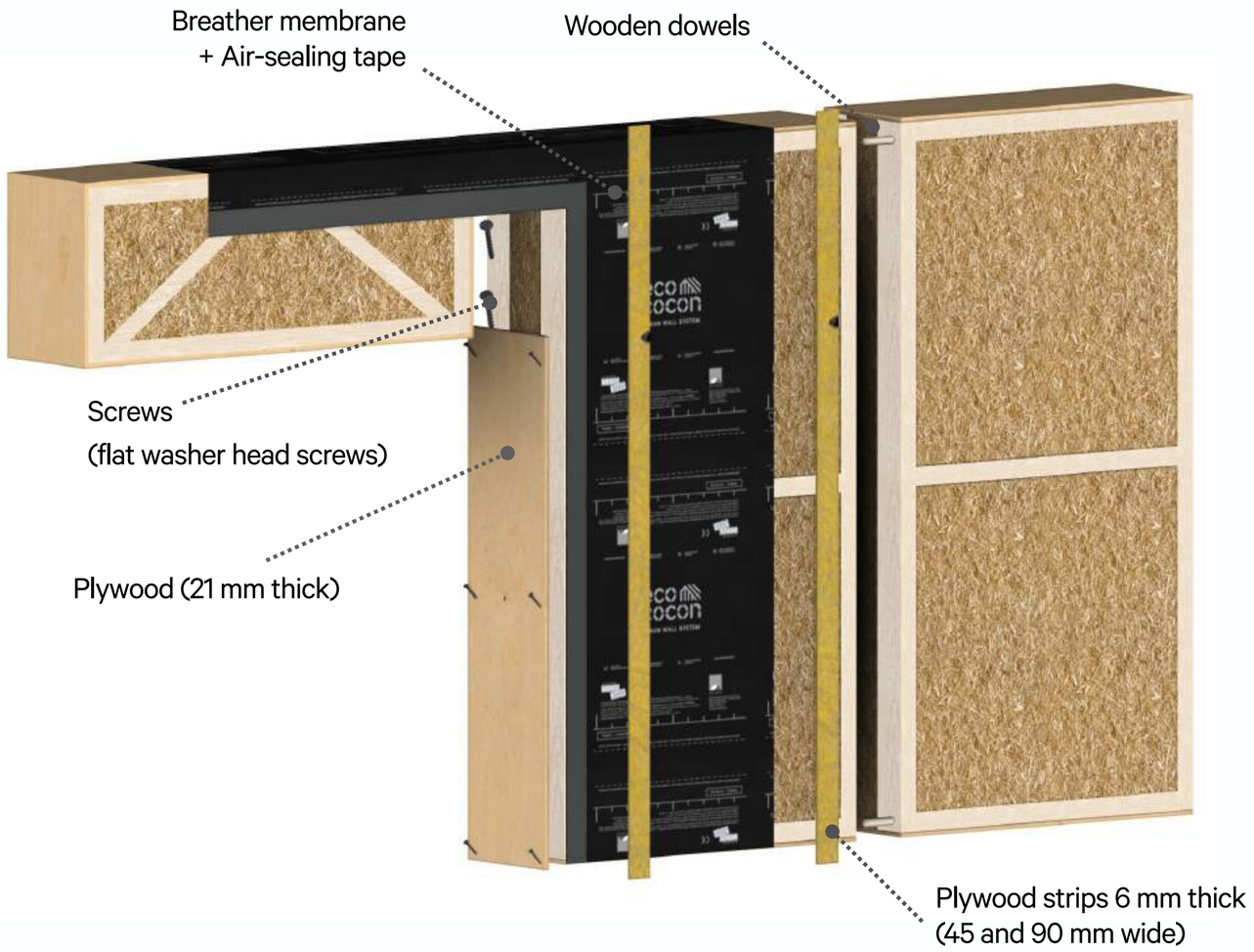
EcoCocon Wall System

EcoCocon Wall System offers 3 in 1 = Construction + Thermal insulation + Airtightness

- Screws & wooden dowels for panel assembly
- Plywood for window reveals (21 mm thick)
- Breather membrane + air sealing tape
- Plywood strips (6 mm thick, 45 and 90 mm wide) for fixing the breather membrane and leveling surface for subsequent layers

Other complementary products can be provided:

- Additional fibre insulation
- Wood fibre board (7 mm thick, 45 and 90 mm wide) for plaster support internally
- Clay plaster



Panel Description

EcoCocon Panel is a load-bearing twin-stud timber frame panel, insulated with straw infill.

Panels are connected together with screws to create a structurally sound EcoCocon Straw Wall.

Various wall build-ups with different layers are possible, collectively referred to as the EcoCocon Wall System.



Straw 89% of panel; natural, non-harmful materials.

No glues or fire retardants added; very low VOC.

Timber class C24, available as PEFC Certified or FSC® Mix Credit upon request.

PANEL COMPOSITION:

Straw

Straw makes up 89% of the panel on average. It contains no additives or fire retardants — its natural silica content helps slow combustion. During production, the straw is de-dusted and compressed into a natural, sustainable core with proven health benefits.

Wood (including plywood and screws)

Timber accounts for 9.6% of the panel volume, with plywood making up a further 1.6%. Spruce timber is used at structural grade C24 (per EN 14250) and is available as PEFC Certified or FSC® Mix Credit upon request.

C = Coniferous species; 24 = strength class.

Panel Performance

At EcoCocon, we are redefining modern construction through natural and renewable materials.

Our prefabricated straw panels offer an innovative solution for builders, architects, and homeowners seeking sustainability without compromise.

By combining high thermal insulation, quick installation, and a minimal carbon footprint, our products represent the future of eco-friendly construction.

Refer to Technical Specification on website



Characteristics	Declared value
Reaction to fire classification	E
Resistance to fire*	REI 45
Thermal resistance R (panel 400 mm thick)	6.55 (m^2K)/W
Heat transfer coefficient U (panel 400 mm thick)	0.152 W/(m^2K)
Thermal conductivity (panel) λ**	0.0645 W/mK
Thermal conductivity (straw) λ***	0.0568 W/mK
Phase shift	18 hours
Average straw density	115 kg/m^3
Water vapour resistance factor μ	3.34

* Panel covered with an airtight membrane on the exterior side
** Certified by the Passive House Institute, Darmstadt
*** Pure straw according to SK-DoP

Certified Product

EPD - Environmental Product Declaration

EcoCocon carries an EPD (ISO 14025 and EN 15804+A2), providing transparent, third-party verified data on the panel's environmental performance across its full lifecycle.

CE marked

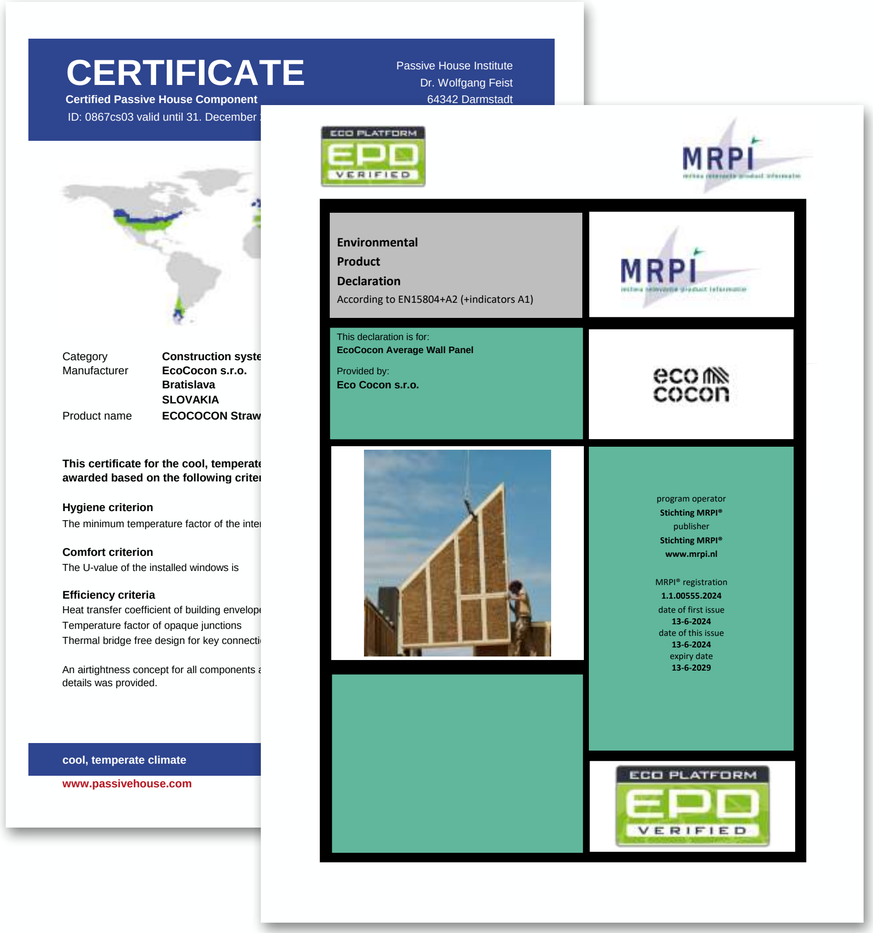
Performance declared via DoP under ETA-26/0071 (TZÚS Prague, 2026).

Passive House Component Certificate

Certified since 2016, confirming high energy efficiency and airtightness.

PEFC Certified / FSC® Mix Credit

Panels are available as PEFC Certified or FSC® Mix Credit upon request.



Certified production

SK-TP - Slovak Technical Assessment

SK-TP is National Technical Assessment issued by Slovak Technical Assessment Body (TAB).

Third-party verification

TSUS - Technický a skúšobný ústav stavebný, n.o. (Building Testing and Research Institute). Conformity according to Slovak national system (System I), incl. third-party FPC assessment.

Refer to Download section on website

Panel Benefits

Highly functional

Made to measure

Each panel is custom-made in 1 mm increments, with various types available to suit structural needs and designs—no standard sizes.

Fast and dry installation

Precision-cut for quick assembly. A 3-person team can install up to 60 m²/day, or 120 m² with a crane.

Flexible applications

Suitable for load-bearing walls up to 5 stories, infill or wrapping in taller buildings, and potentially for internal partitions.

Structure + insulation

Provides both a strong timber frame and excellent thermal insulation in one element.

Twin-stud timber frame advantage

Load-bearing on both sides, enabling thermal bridge-free details and versatile finishes.

Thermal mass, long phase shift

The dense straw core buffers temperature changes, helping to keep interiors cooler during hot days and warmer on winter nights.



Highly functional

Reliable and durable

Sustainable

Reliable and durable

A tested product

Straw insulation has over 100 years of proven use. EcoCocon panels are performance-certified and come with a 50-year guarantee.

Fire resistance

The bare panel resists fire for minimum 45 minutes; complete wall systems can reach up to 120 minutes.

Sustainable

Renewable, local byproducts

Made from local wheat straw and minimal wood, EcoCocon panels use an abundant annual crop byproduct.

Carbon storage & climate resilience

Naturally sequestering 31.5 kg C/m² (115.5 kg CO_2/m²), captured through photosynthesis during growth.

Zero waste, circular

Produced without water, with minimal energy, and designed for full circularity. (Certification is currently in progress.)

Natural, low-impact materials

Composed of 98% natural, renewable materials — timber and straw.

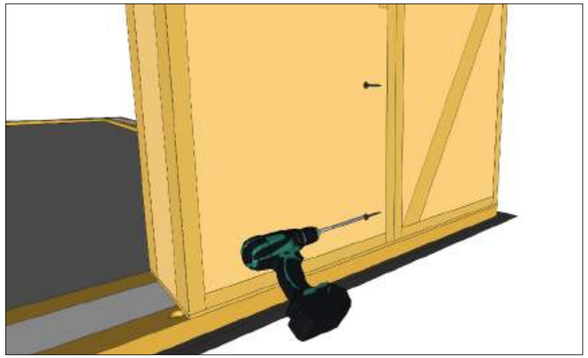
Wall Assembly

EcoCocon panels are screw-mounted and can be easily connected to any foundation type or secondary structural system.

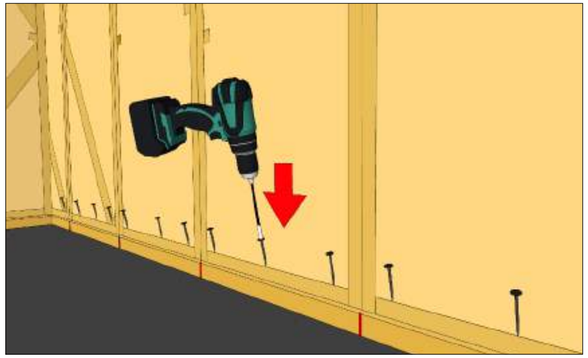
Panel-to-panel connections follow the Assembly Guide, unless otherwise specified by the structural engineer.

Connections to other construction systems (e.g. timber, concrete, steel) are outlined in the:
Annex 1 - Structural Connections
Annex 2 - Architectural Details

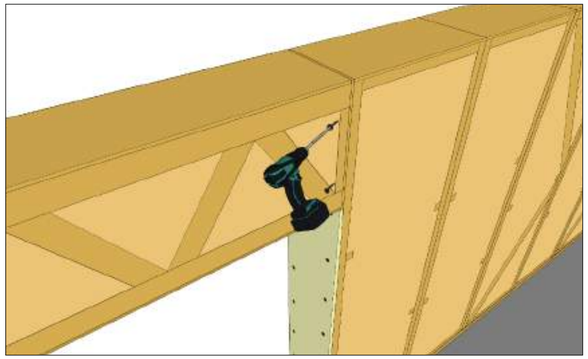
Refer to Assembly Guide on website



1.



2.



3.



Possibilities of Assembly and Pre-assembly

On site assembly

Precision-cut, prefabricated panels enable simple and rapid on-site installation. A team of three can construct an average of 60 m² of wall per day, or 120 m² with the assistance of a crane.

Video: Time lapse - erecting EcoCocon walls in 1 min



Assembled on the building site

Panels are screwed together on the building site.



Pre-assembled on the building site

To use a crane effectively, panels can be pre-assembled on the building site.

Pre-assembly in the hall

Pre-assembling of wall segments is possible, but it is NOT done by EcoCocon - it is managed by builders and contractors.

Video: JDH-Byg & EcoCocon Denmark - prefabricating in the hall. 57 sec.



Pre-assembled off site (wall segment)

Wall segments can be pre-assembled off site in dry conditions, enabling optimal accuracy and fast on-site installation.



Pre-assembled with windows off site

More complex pre-assembly requires less time on site, but needs secure and well-planned transport.

Benefits for Architect

EMPOWERING SUSTAINABLE AND INNOVATIVE DESIGN

Design flexibility

EcoCocon allows architects to create customized designs without being constrained by panel sizes or the need to design panel layouts within the wall.

EU Taxonomy Compliance

EcoCocon is made from sustainable materials with a low carbon footprint and high energy efficiency. The system meets the strict criteria of the EU Taxonomy, contributing to environmental objectives and sustainable construction goals.

Various wall build-ups to meet regulatory requirements

EcoCocon offers dozens of wall configurations to adapt to different insulation, fire resistance, and acoustic requirements—ensuring compliance with local building codes and regulations.

Certified Passive House Component

EcoCocon panels eliminate thermal bridging, enhancing energy performance and indoor comfort. They are certified to Passive House standards, with verified U-values and pre-calculated thermal bridges for PHPP (Passive House Planning Package).

BIM integration (Revit & IFC)

Ready-to-use BIM files in Revit format make it easy to integrate EcoCocon panels into architectural models and streamline design workflows. IFC export enables 3D model import into any architectural software.

Expert technical support

EcoCocon provides comprehensive support throughout the design and construction process, assisting architects to ensure smooth and successful implementation.



02

Designing with EcoCocon

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Design Concept

CONCEPT FOR CREATING A HIGH-PERFORMING ECOCOCON BUILDING

EcoCocon Straw Panels come with Passive House certification, but to fully unlock their potential, your building design should adhere to Passive House standards. This approach ensures optimal energy efficiency, comfort, and indoor air quality with effective moisture control.

Standard timber construction

EcoCocon panels work like standard timber structure, based on Eurocode 5. Their twin-stud frames support loads using standard screws, nails, and brackets.

Shear walls must be planned in the structural design.

Thermal bridge-free detailing

You can use proven standard timber detailing techniques to effectively manage moisture and water ingress while preventing thermal bridges.

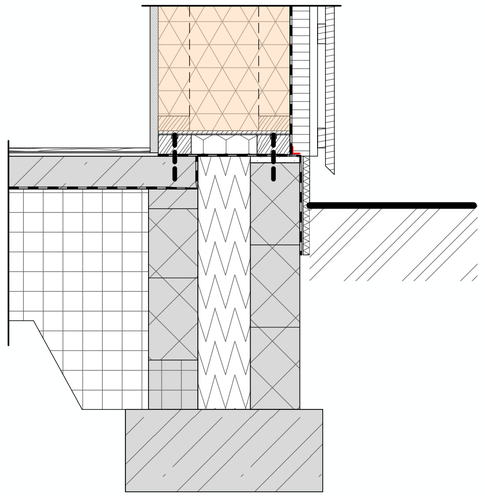
Vapour-permeable design

EcoCocon panels are designed to be vapour-permeable, allowing moisture to diffuse naturally through the structure - the entire wall build-up must follow this same vapour-open principle.

Airtight design and secure ventilation

EcoCocon buildings are airtight yet vapour-open to prevent uncontrolled moist air leaks. Ventilation – typically with heat recovery – is also essential to prevent humidity buildup.





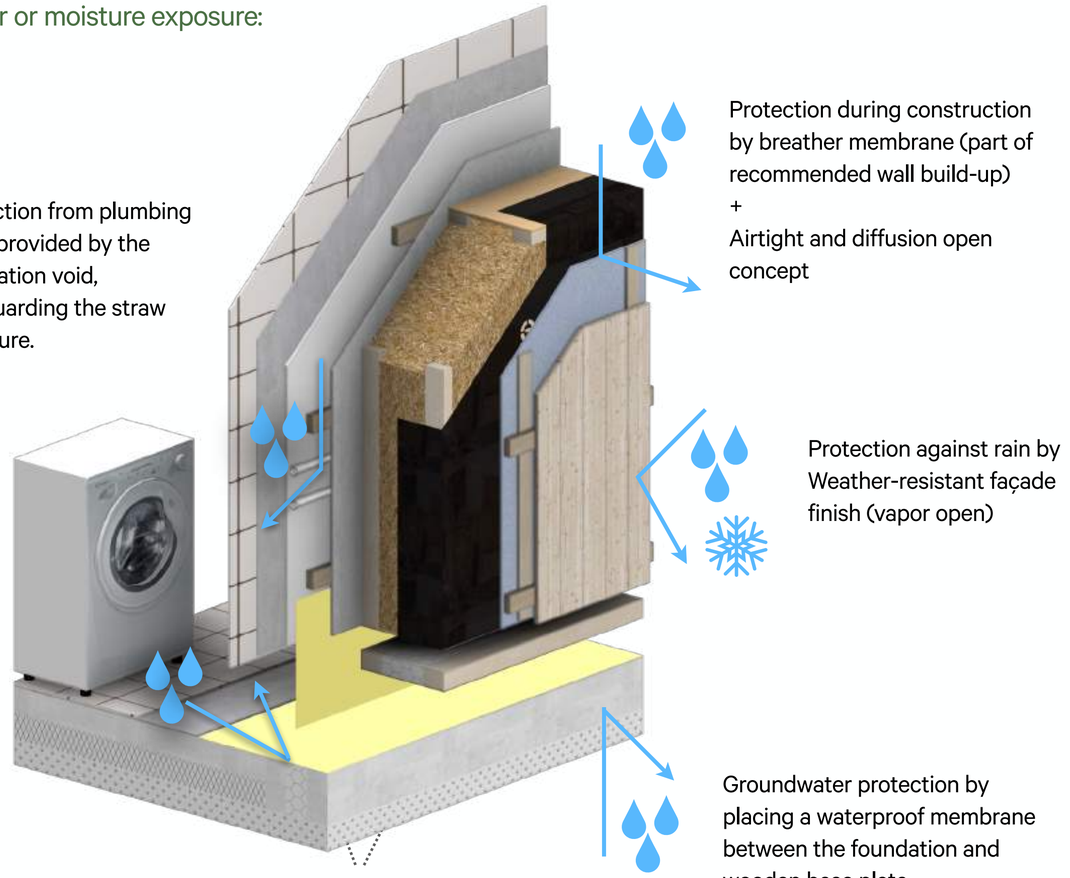




Water Ingress Prevention Strategy

This strategy ensures effective protection of the structure from moisture and water infiltration through proper detailing, material selection, and construction techniques.

Preventing water ingress requires protection against various types of water or moisture exposure:



Weather protection

- The EcoCocon standard build-up provides immediate rain protection with a weather-resistant, airtight breather membrane applied after panel assembly.
- Exterior finishes further protect the panels from weather while remaining vapor-permeable.

Groundwater protection

A waterproofing membrane is placed between the foundations and the base plate to prevent groundwater infiltration.

Accidental water exposure protection

Protection against incidents (e.g., washing machine leaks) is ensured by:

- A raised wall base, where the straw wall begins above floor level.
- Sealing the wall base with a waterproof membrane.
- The installation void helps protect the straw structure from potential plumbing leaks or failures.

Protection against excess moisture in construction

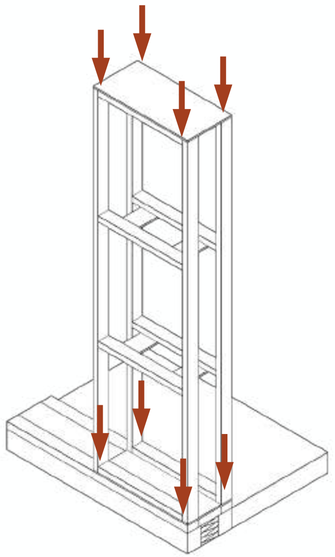
- The structure is sealed airtight to prevent moisture ingress while allowing vapor diffusion to the exterior, maintaining healthy moisture balance.
- WUFI calculations guide the selection of appropriate layering for optimal performance.
- EcoCocon's carefully designed connections and structural details (see Annexes) ensure airtightness, structural stability, and moisture protection.
- Indoor moisture is controlled through natural or mechanical ventilation to protect the building from humidity-related damage.

Twin-Stud Timber Frame Construction

EcoCocon adapts to almost any design. Architects can work as usual, though incorporating timber construction principles can simplify the process.

Foundation

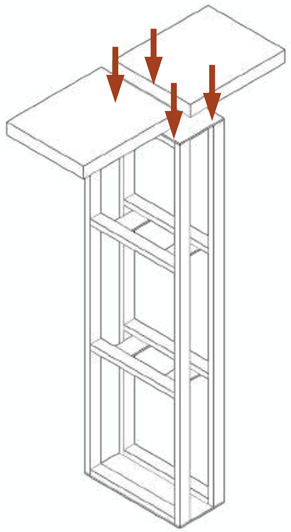
» Any type of foundation is possible, as long as it eliminates thermal bridges and supports both the internal and external studs. (Typically, a twin-beam base plate, anchored to the foundation, supports the EcoCocon wall panels)



Floor or roof

» The system allows the floor and roof to be supported by separate studs, internal or external, or both.

» A variety of structural solutions can be used, depending on the design requirements.

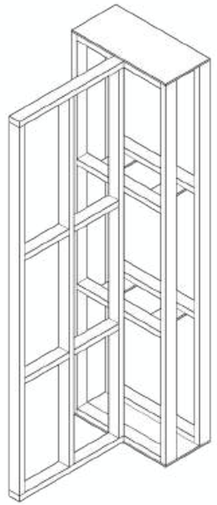


Partition walls

» Horizontal beams between studs enable the attachment of internal partitions to the structure.

» Some partition walls should be designed as shear walls for additional stability.

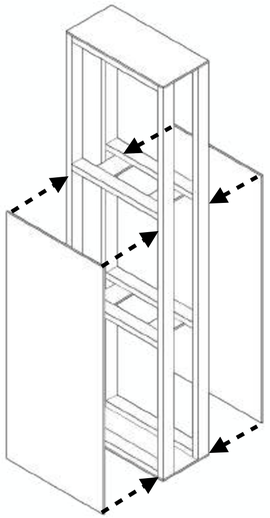
» Partitions can be made from timber frames, gypsum board systems, masonry, or other.



Fixing secondary constructions and loads

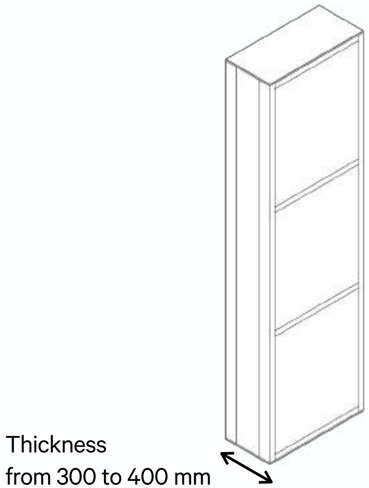
» It can be used to create installation voids, fix various boards, or support structural loads.

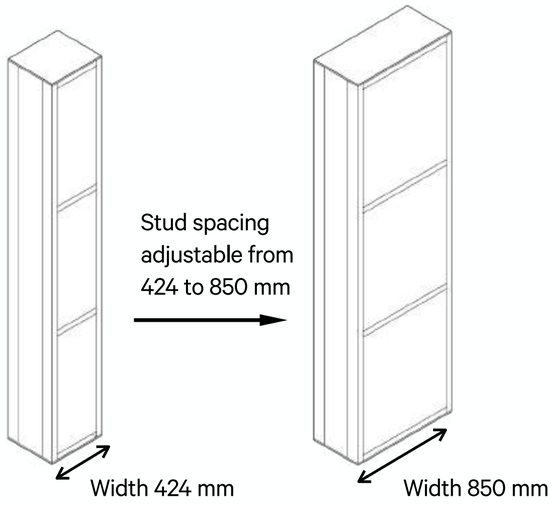
» It also works well as a backing board for mounting kitchen cabinets.

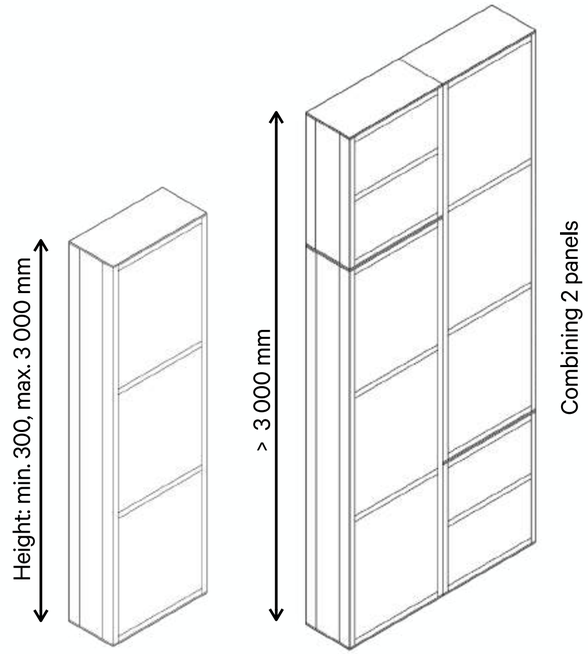


Panel Variability

This is for information only, the panel project is carried out exclusively by the EcoCocon team.







Variable thermal insulation options

- Variable panel thickness (from 300 to 400 mm) results in variable thermal performance.
- The final wall thickness and overall thermal performance depends on the complete wall build-up. Additional insulation layers, such as wood fibre boards (available in 60, 80, 100, or 120 mm), can be added to further improve thermal efficiency as required.

Optimizing stud spacing

Stud spacing ranges from 424 mm to 850 mm, offering flexibility to meet specific project needs, such as:

- Facilitating board installation:
  Studs can be spaced at 600/625 mm or 800/833 mm to match standard board lengths of 2400 or 2500 mm.
- Supporting high loads:
  Stud spacing can be adapted to structural requirements, as designed by EcoCocon engineers.

Higher walls

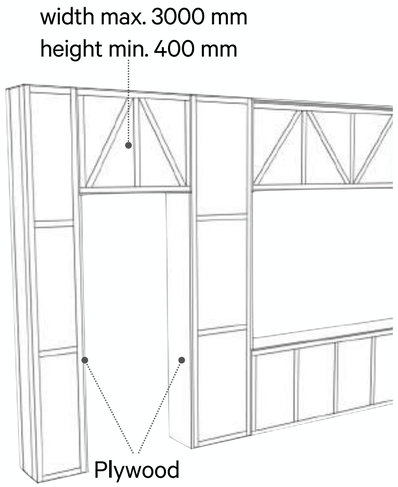
- Higher walls can be achieved by stacking panels, as designed and verified by EcoCocon engineers.

Lintel Variability

This is for information only, the panel project is carried out exclusively by the EcoCocon team.

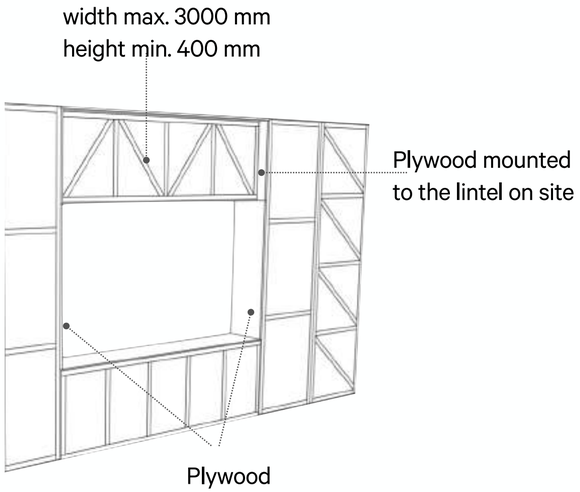
Lintel panel

A lintel panel is suitable for small openings where structural load requirements are minimal.



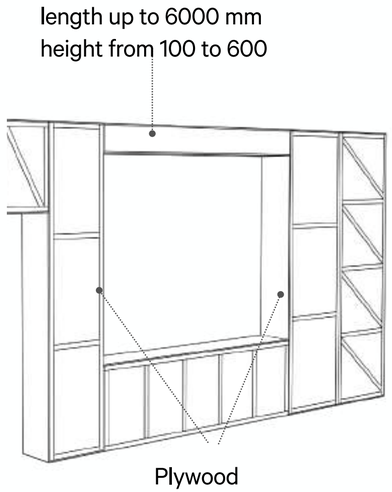
Narrow Lintel panel

A narrow lintel panel is used above small openings with lower structural loads, allowing space for external blinds.



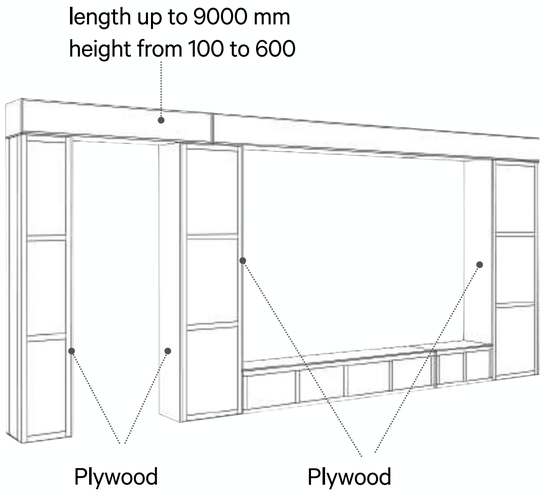
Box Element as lintel

A box element (made of solid wood C24) is used to carry higher loads or when there isn't enough height to install a lintel panel.



Box Element for large openings

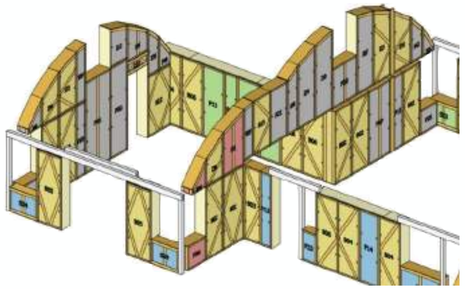
For larger openings, a box element (made of LVL, GLT) is installed above the panels to transfer loads around the opening.



Special Shapes

Round gables

Round gables can be created by combining multiple inclined gable panels made from straight segments.

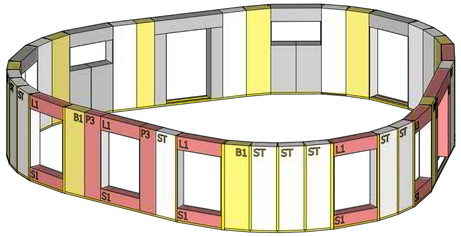






Curved walls

Large-radius curved walls are formed by arranging narrower panels in a segmented pattern, which creates a smooth curve once finished with render or cladding.

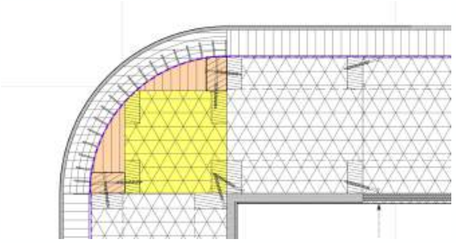






Round corners (small radius)

Panels with offsets, setbacks, or narrower widths are arranged in a segmented pattern. Once finished with render or cladding, they form a smooth curved corner.







Round or curved walls can be technically designed with custom solutions; however, such applications are not recommended due to increased complexity and cost.

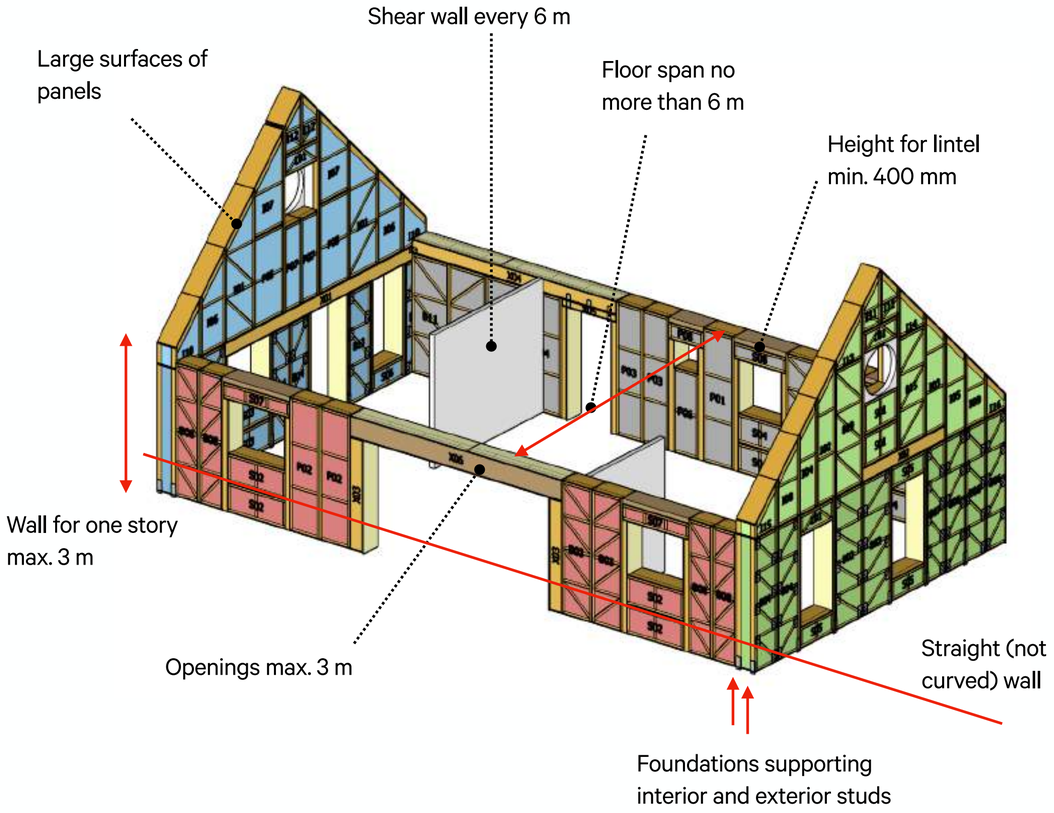
Cost-Effective Design Optimization

GOOD PRACTICE FOR EASY ENGINEERING

Bespoke houses are possible but tend to be more structurally complex, resulting in longer Panel Project preparation. By comparison, houses with simpler structural solutions are generally cheaper to produce and build.

Projects with the following characteristics allow the panel project to be prepared more quickly and efficiently.

- Simple projects with low loads
- Infill projects
- Repeat projects
- Large projects with repeating patterns



Optimal way to design:

- Spans between structural supports for floor or roof no more than 6 m
- At least one shear wall every 6 m
- The walls of each individual storey do not exceed a height of 3 m
- Foundation detail allows to support the panels on both interior and exterior studs
- Large surfaces of EcoCocon panels
- Openings are not wider than 3 m
- Shape of the wall is straight, not curved
- The height of the space left for lintels must be at least 424 mm

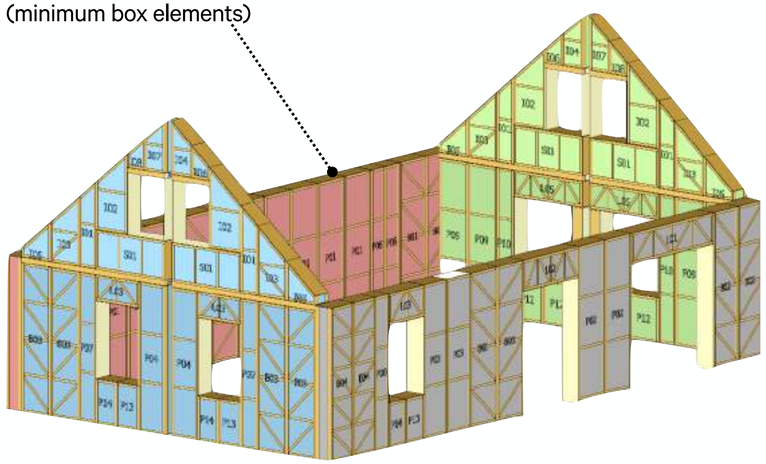
COST-EFFECTIVE DESIGN OPTIMIZATION

Comparison of Two Designs

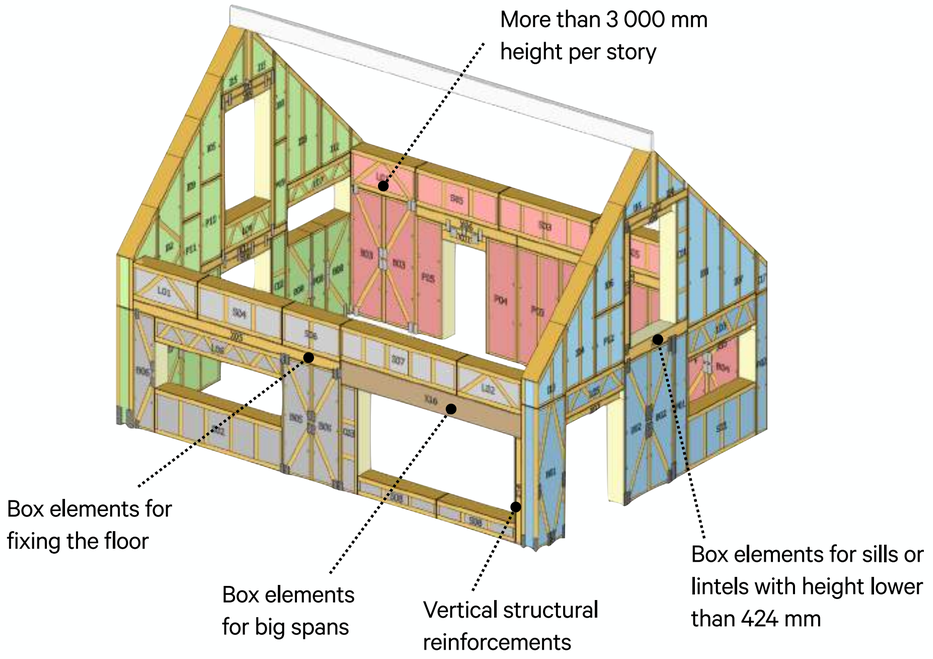
Example of two designs with the same panel size area (113 m²), but with a 15% price difference.

Simple design - less expensive

Predominant use of straw panels (minimum box elements)



More complex design - more expensive



How can you achieve "cost-optimised design"?

Smart planning of spans, heights, interior shear walls and connection details helps keep the client's costs down.

Features demanding complex structural solutions may increase the price:

- Enabling walls higher than 3 000 mm per story
- Larger box elements
- Missing shear walls

COST-EFFECTIVE DESIGN OPTIMIZATION

Comparison to Other Building Systems

Performance comparison

The overall cost of building with EcoCocon is very competitive with other high-quality building systems, when you consider factors such as:

- Energy efficiency
- Sustainability
- Durability

Construction process comparison

Even if EcoCocon panels cost more upfront, their faster and more efficient construction helps balance out the initial expense:

- Rapid installation and less labour with pre-fabrication and pre-assembly
- The dry construction process enables installation without delays, even during winter conditions.
- Lower site costs through reduced handling, logistics, and material waste
- High quality reduces costly errors and rework



03 Wall Build-up Principle and Examples

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Wall Variations and Performance	38

Finishing Options

EXAMPLES OF EXTERIOR FINISHES

EcoCocon wall build-ups can be finished with various surfaces, including vapor-open exterior coatings or ventilated façades. The choice of finish may affect fire resistance and sound insulation performance.



Silicate render (on wood fibre board)



Lime render (on wood fibre board)



Clay render, if protected from rain



Ventilated brick facade



Ventilated wood cladding with gaps



Ventilated wood cladding without gaps



Wood shingles



Ventilated metal or composite facade

Finishing Options

EXAMPLES OF INTERIOR FINISHES

EcoCocon Wall build-up can be finished with different surfaces. Choosing different surfaces may impact fire resistance and sound resistance.



Clay plaster



Gypsum plaster



Paint on gypsum board / gypsum fibre board



Tiles (on a board) in bathroom



Decorative clay plaster



Lime Plaster



Plywood/wood



Just straw

OPTIMAL INTERIOR FINISH:

Clay Plaster

Is a 100% natural earthen interior finish made from clay, sand and water. It is fully compatible with the vapour-open EcoCocon wall system.

While less common than conventional gypsum or cement plasters, it offers functional benefits, and several producers provide a wide range of colours and shades to suit the designer's preferences.

Benefits:

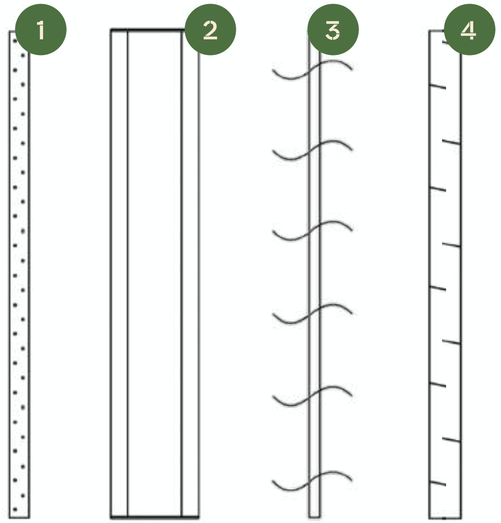
- Clay acts as the binder with no synthetic additives or VOCs
- Highly hygroscopic – provides moisture buffering – clay absorbs and releases indoor humidity
- Local, low embodied energy & recyclable material
- Improves acoustics and creates soft light reflection
- Suitable for beautiful interior surfaces and decorations



Photo credits: Collaboratorio

Wall Build-up Principle

Airtight but vapour permeable.
Moisture behavior must be verified by WUFI calculations.



Overall thickness of the wall = = EcoCocon panel + interior & exterior layers

Panels are available in thicknesses ranging from 300 to 400 mm, depending on the architect's choice to meet energy standards.

Thermal insulation can be enhanced by adding wood fibre board on the exterior or by incorporating an installation void filled with insulation.

1

Interior vapor permeable* layer

The interior vapor-permeable layer allows moisture to pass through gradually, contributing to an improved indoor climate.

Possible examples:
Clay plaster (standard), gypsum plaster, gypsum fibre board or gypsum board

2

Straw panel 300 - 400 mm thickness

Insulating and load-bearing EcoCocon panel.

3

Airtight breather membrane (Sd<0.2 m)

Must be taped airtight to other building components (windows, foundation, penetrations...)

Possible variations:

- This layer can be omitted if an airtight membrane is applied on the interior side.
- It can also be left out when facade gypsum fibre board is installed airtight.
- For increased fire resistance, the membrane Fassawall Fire Stop A2 is an alternative.

4

Exterior protective vapor open layer

Serves as mechanical protection, additional insulation (if needed), and resistance to weather.

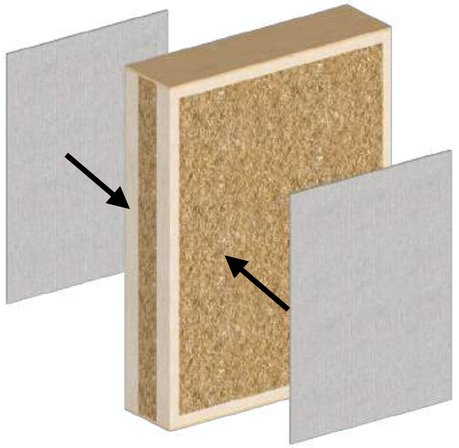
Possible examples:

- Wood fibre board (60 mm) or facade gypsum fibre board
- Various final surfaces such as permeable render or ventilated cladding

* impermeable layers on the inside do not cause any building physics issues

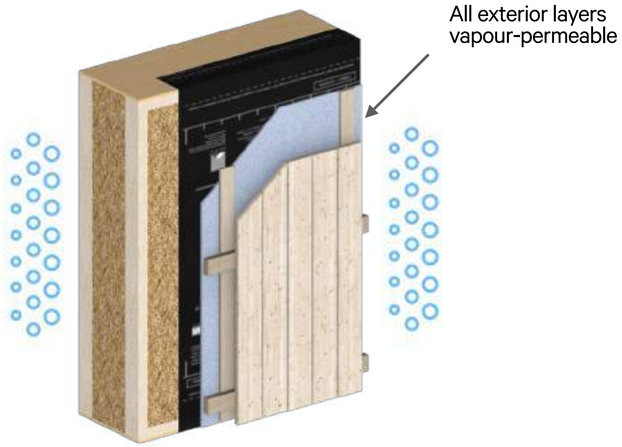
Wall Build-up Principle

EXPLANATION



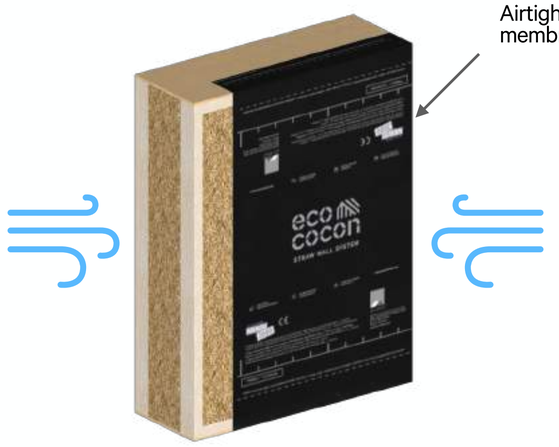
Material application variability

- EcoCocon panels allow flexible application and attachment of materials. The compressed straw core supports plastering, while the twin-stud construction enables fixing membranes or boards.
- This versatility allows for various material combinations within the EcoCocon system.



Vapour permeability

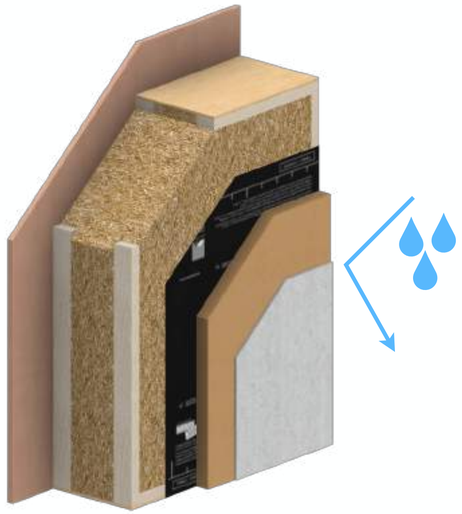
- Vapour-closed constructions can risk condensation if defects occur. EcoCocon uses a vapour-permeable build-up as a safer approach.
- EcoCocon system offers variations with fully diffusion-open exterior layers, while interior layers usually have higher sd-values to limit vapour flow.
- Moisture movement through fibrous materials is carefully analyzed using WUFI calculations to ensure safe and effective moisture management.



Airtightness

- An airtight wall build-up with proper detailing is essential to prevent condensation and moisture damage, especially in timber construction. Ideally it is verified by a blower door test.
- The EcoCocon system achieves this using an airtight breather membrane (Sd = 0.05 m). In some countries, such as France, an additional interior airtight layer is required.
- Various wall build-ups are possible, but moisture performance should always be verified through WUFI analysis.

Refer to WUFI reports on website



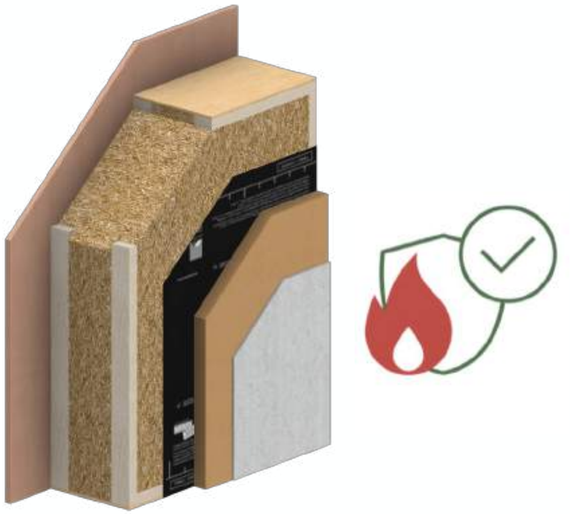
Preventing water ingress

- Protection against rain requires a weather-resistant, vapor-open façade finish.
- The EcoCocon wall system offers various finishing options, such as wood fibre board with durable renders or a wide range of ventilated façade finishes, that effectively protect the panels.



Adjustable thermal insulation

- To comply with regulations, the wall build-up enables adjustable thermal insulation.
- EcoCocon easily meets these requirements by allowing the addition of fibre boards of varying thicknesses (density > 270 kg/m³), tailored to the climate.
- The EcoCocon **U-value Calculation** supports precise planning and enables building to Passive House standards, as it is certified along with thermal bridge values for selected details.



Complying with fire resistance

- Meeting fire resistance requirements calls for build-ups with fire-resistant layers compliant with national codes. Regulations vary significantly between countries, especially for timber construction.
- The EcoCocon wall system supports various wall build-ups and surface options, as some tests were performed without final finishes, allowing for great design flexibility.

Exterior Layers

WALL BUILD-UP EXAMPLES

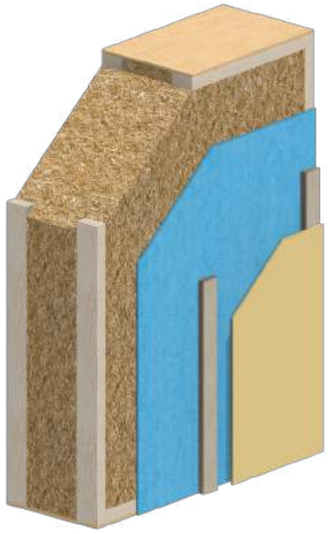
Breather membrane (Sd = 0.05 m)
+ Wood fibre board
+ Render or Ventilated facade



- Ideal for family homes
- Woodfibre for added insulation
- Finishing options: rendered façade or ventilated façade

Facade gypsum fibre board*
+ Ventilated composite board

* for example Weatherboard 365



- Suitable for larger buildings
- No additional insulation
- Ventilated façade finish

Breather membrane (Sd = 0.05 m)
+ Diffusion-open wood fibre sheathing board
+ Ventilated timber facade

* for example Egger DHF; Hunton Windproof wood fibre board



- Suitable for smaller or larger buildings
- No additional insulation
- Ventilated façade finish

Interior Layers

WALL BUILD-UP EXAMPLES

Clay plaster



- Best for family homes
- Unique surfaces
- Wet, slow drying application process

Gypsum plaster



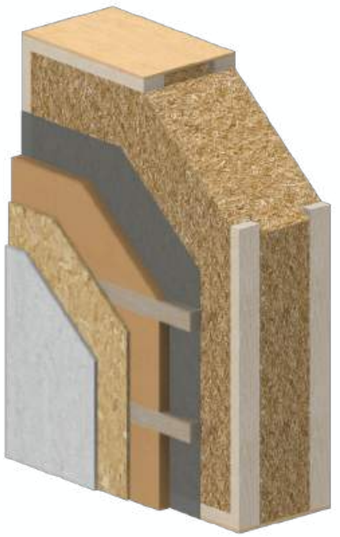
- Suitable for larger buildings
- Wet, fast drying application process

Gypsum fibre board



- Suitable for larger buildings
- Fast wet application process

Breather membrane + Service Void (battens + soft wood fibre board) + OSB board



- Ideal for walls with extensive electrical installations
- Used in bathrooms if the membrane is replaced with suitable moisture-resistant boards

Partition Wall

WALL BUILD-UP EXAMPLES

EcoCocon partition walls use the same panels as exterior walls, with different build-ups. **Any build-up is possible**, depending on acoustic requirements.

2x Gypsum board with Sound-fastener screws





- Acoustically best performance
- Suitable as partition between two apartments.

OSB + Gypsum fibre board



- Suitable for partitions with lower acoustic requirements
- Possibility to mount loads

EcoCocon breather membrane + Gypsum fibre board



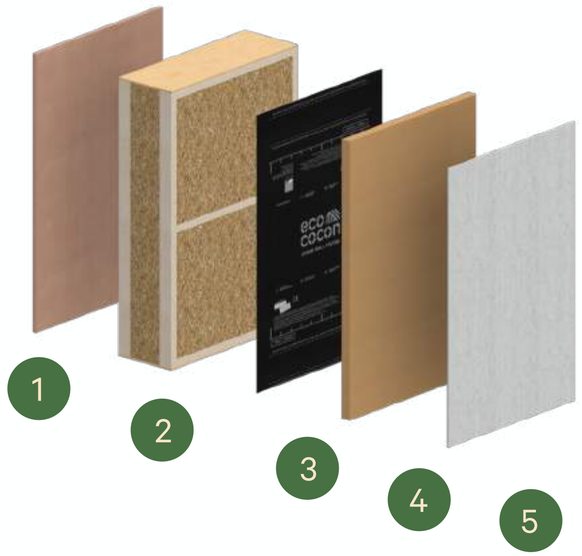
- Suitable for partitions with lower acoustic requirement (membrane helps the acoustics).

Example A

Clay plaster, exterior wood fibre board with finish

Clay plaster provides natural environment while added fibre board improves insulation and allows for individual finish - render or ventilated façade.

Interior



Exterior

Resistance to fire (interior)	REI 120 (Clay plaster)
Resistance to fire (exterior)	REI 120-ef (Wood fibre board Steico 60mm - 270kg/m³)*
Reaction to fire (interior)	B-s1, d0 (Clay plaster)
Reaction to fire (exterior)	B-s1, d0 (Render)
Sound insulation	Rw ((C; C_{tr}; $C_{tr,\ 100\text{-}5000}$) = >54 (-1; -3; -3) dB
U-value	0.128 W/m²K**

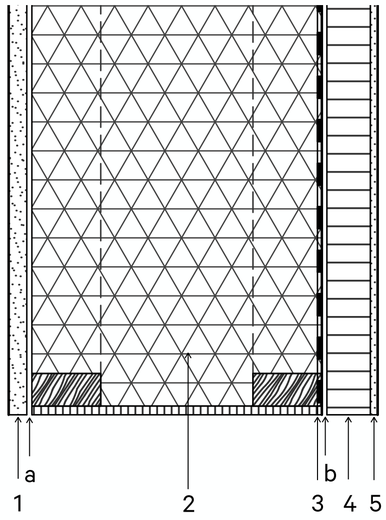
* or equivalent

** applied Passive House certified λ = 0.0645 W/mK (wood construction of panel included)

1. 25 mm Clay plaster (interior)
   a) 7 mm Wood fibre strips
2. 400 mm EcoCocon panel
3. Breather membrane (Sd = 0.05 m) fixed with
   b) 6 mm Plywood strips
4. 60 mm (Wood fibre board 60mm - 270 kg/m³)
5. 10 mm Render or Ventilated facade

a) Wood-fibre strips are used to cover wood construction for plastering, or to level the surface.
b) Plywood strips are fixed to the wood construction to fix the membrane and at the same time to level the timber frame with straw infill, creating a flat surface for subsequent layers.

Interior

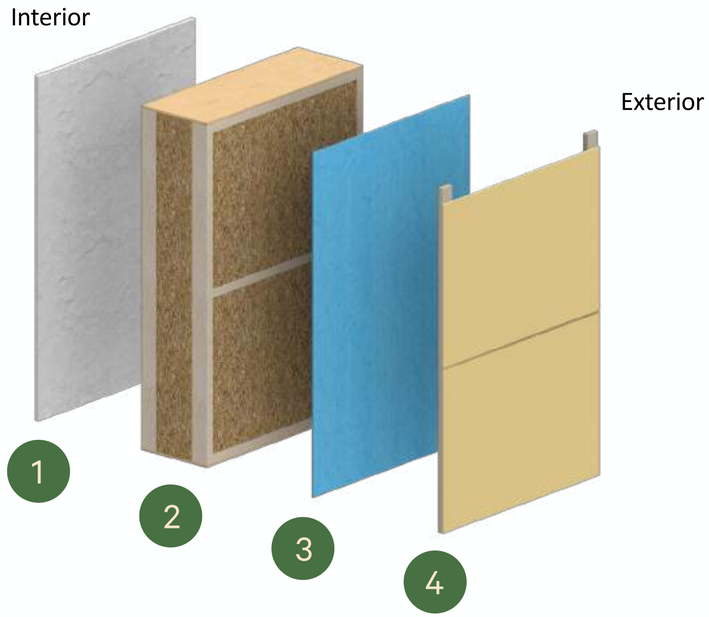


Exterior

Example B

Gypsum plaster, exterior weatherboard & ventilated composite board

Cost efficient wall build-up proposal for larger buildings.



Weatherboard 365 with airtight taping can substitute for the breather membrane.

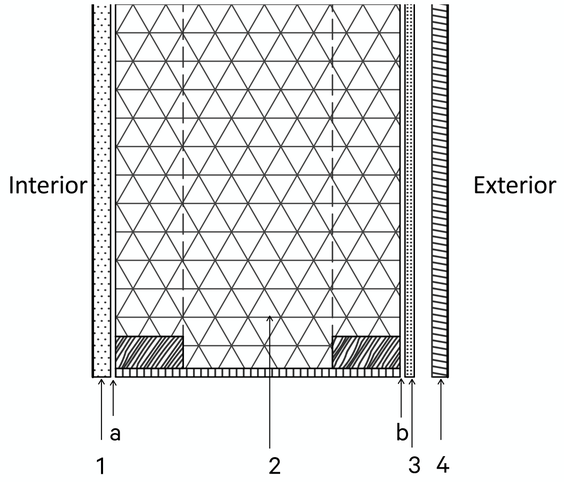
1. 25 mm Gypsum plaster (interior)
   a) 7 mm Wood fibre strips
2. 400 mm EcoCocon panel
   b) 6 mm Plywood strips
3. 9.5 mm Gypsum fibre board (or Weatherboard 365*)
4. 25 mm Vertical wooden battens
   8 mm Composite board

a) Wood-fibre strips are used to cover wood construction for plastering, or to level the surface.
b) Plywood strips are fixed to the wood construction to level the timber frame with straw infill, creating a flat surface for weatherboard.

Resistance to fire (interior)	REI 90 (Gypsum plaster)
Resistance to fire (exterior)	Not tested, assumed REI 60-ef (Knauf Weather board 365)*
Reaction to fire (interior)	B-s1, d0 (Gypsum plaster)
Reaction to fire (exterior)	Not tested
Sound insulation	Rw (C; Ctr; $C_{100\text{-}5000}$) = >42 dB
U-value	0.147 W/m²K**

* or equivalent

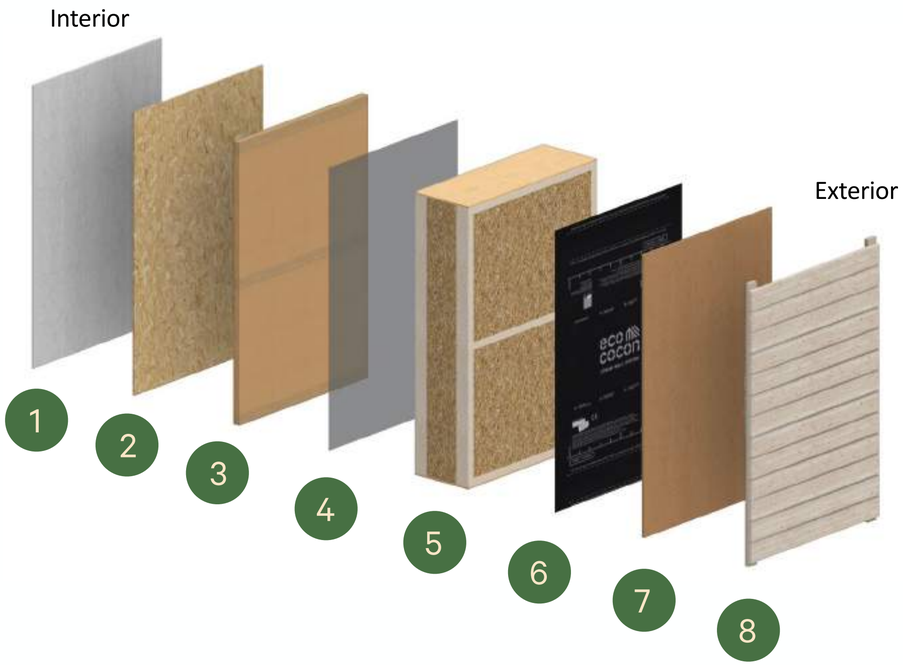
** applied Passive House certified λ = 0.0645 W/mK (wood construction of panel included)



Example C

Interior service void
Exterior wood fibre sheathing board and ventilated facade

Integrated service void, strong Fermacell interior, and durable, natural wooden façade.

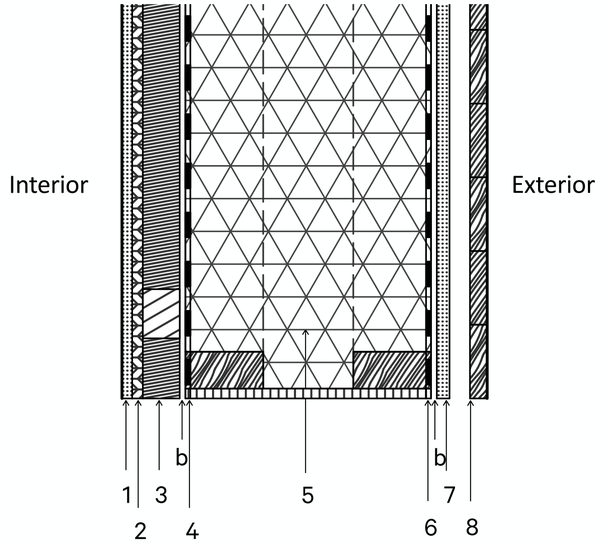


1. 12.5 mm Gypsum fibre board (interior)
2. 12.5 mm OSB
3. 50 mm Installation void (battens + soft wood fibre board)
4. Airtight vapor barrier or retarder b) 6 mm Plywood strips
5. 300 mm EcoCocon panel
6. Breather membrane (Sd = 0.05 m) b) 6 mm Plywood strips
7. 15 mm Diffusion-open wood fibre sheathing board (for example Hunton Windproof wood fibre board; Egger DHF)
8. Ventilated facade: 25 mm Vertical wooden battens 21 mm Horizontal facade cladding

b) Plywood strips are fixed to the wood construction to fix the membrane and at the same time to level the timber frame with straw infill, creating a flat surface for subsequent layers)

Resistance to fire (interior)	Not tested, assumed REI 60 (OSB+Fermacell 12,5 mm*)
Resistance to fire (exterior)	Not tested, assumed REI 60-ef (15 mm wood fibre sheathing board*)
Reaction to fire (interior)	Not tested
Reaction to fire (exterior)	B-s1, d0 (Fermacell)
Sound insulation	Rw = 41 dB
U-value	0.124 W/m²K**

*or equivalent
** applied λ-value: 0.0560 W/mK (according to SK-DoP)

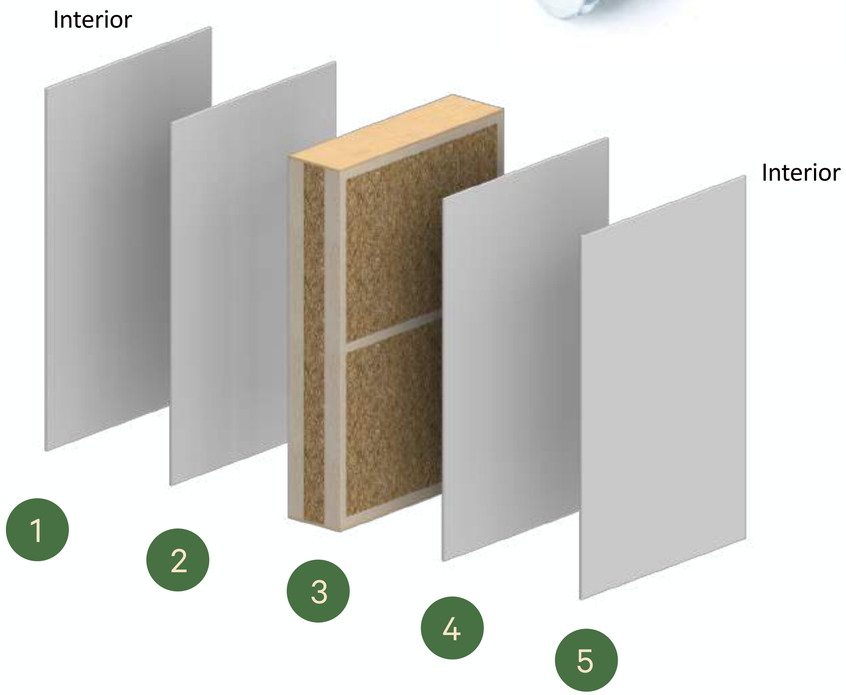


Example

Partition: 2 x gypsum board, sound-fastener screws

Acoustic interior partition with sound-fastener screws.



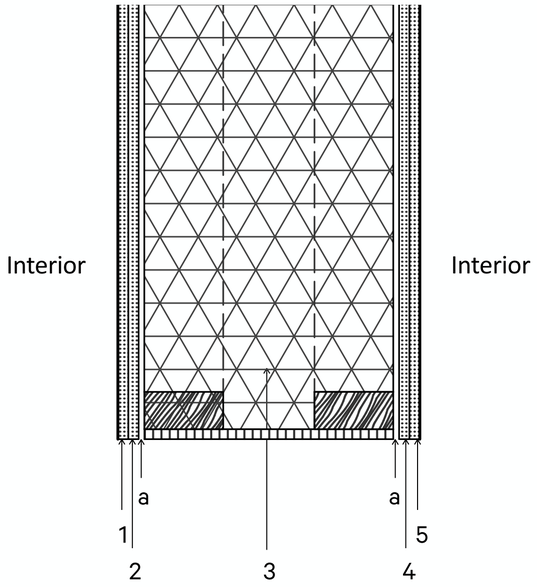


Resistance to fire (interior)	Not tested - assumed REI 60 (2x Knauf Gypsum board)*
Resistance to fire (interior)	Not tested - assumed REI 60 (2x Knauf Gypsum board)*
Reaction to fire (interior)	B-s1, d0 (Gypsum board)
Sound insulation	Rw (C; C_{tr}; $C_{tr,\ 100\text{-}5000}$) = 65 (−2; −7) dB

* or equivalent

1. 12.5 mm Gypsum board
2. 12.5 mm Gypsum board (acoustic screws)
   a) 7 mm Wood fibre strips
3. 300 mm EcoCocon panel
   a) 7 mm Wood fibre strips
4. 12.5 mm Gypsum board (acoustic screws)
5. 12.5 mm Gypsum board

a) Wood-fibre strips are used to cover wood construction for plastering, or to level the surface.



Planning the traditional “window of truth”

An architect can use the visible straw as a design element. No matter the wall build-up, there is a tradition of incorporating a 'window of truth' in various creative shapes and forms to reveal the straw beneath. It has to be planned before plastering.

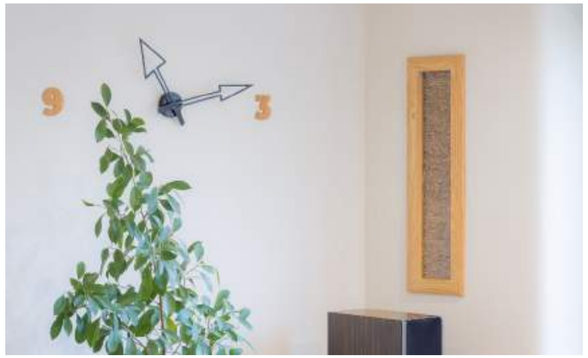


Photo credits: Milan Hutera



Photo credits: Milan Hutera



Photo credits: Createrra



Wall Variations and Performance

WALL WITH THE FOLLOWING
BUILD-UP COMBINATION

External layer: Membrane Fassawall Fire Stop A2 (+ external finish)

Internal layer	Uncovered Straw panel	Clay plaster 25 mm	Gypsum plaster 25 mm	Gypsum board 12.5 mm	Gypsum fibre board 12.5 mm
Reaction to fire classification	E	A	A1-s1, d0	A2-s1, d0	A2-s1, d0
Resistance to fire (under load of 83 kN/m)	REI 45 REI 90-ef	REI 120 REI 90-ef	REI 90 REI 90-ef	REI 45 REI 90-ef	REI 45 REI 90-ef
Panel 300 mm* Thermal resistance R (m^2K)/W Heat transfer coefficient U W/(m^2K)	4.872 0.205	4.913 0.204	4.936 0.203	4.922 0.203	4.911 0.204
Panel 400 mm** Thermal resistance R (m^2K)/W Heat transfer coefficient U W/(m^2K)	6.558 0.152	6.599 0.152	6.622 0.151	6.608 0.151	6.597 0.152
Airborne sound insulation*** Rw(C;Ctr;C100-5000)	26 dB	> 26 dB	> 26 dB	> 26 dB	> 26 dB

*applied λ-values for panel 300 mm: straw (86%) λ = 0.0568 W/mK (SK-DoP), wood (14%) λ = 0.130 W/mK
**applied λ-value of the Passive House–certified EcoCocon panel (400 mm thick) including the timber structure λ = 0.0645 W/mK
***panels are equipped with airtight membrane on the exterior side.

Wall Variations and Performance

WALL WITH THE FOLLOWING
BUILD-UP COMBINATION

External layer: Membrane Proclima Mento 3000 + 60 mm Wood fibre board >260 kg/m³ (+ external finish)

Internal layer		Uncovered Straw panel	Clay plaster 25 mm	Gypsum plaster 25 mm	Gypsum board 12.5 mm	Gypsum fibre board 12.5 mm
Reaction to fire classification		E (TR 2021)	A	A1-s1, d0	A2-s1, d0 (TR 2021)	A2-s1, d0
Resistance to fire (under load of 83 kN/m)		REI 45 REI 120-ef	REI 120 REI 120-ef	REI 90 REI 120-ef	REI 45 REI 120-ef	REI 45 REI 120-ef
Panel 300 mm*	Thermal resistance R (m²K)/W Heat transfer coefficient U W/(m²K)	6.096 0.164	6.1383 0.163	6.160 0.162	6.146 0.163	6.135 0.163
Panel 400 mm**	Thermal resistance R (m²K)/W Heat transfer coefficient U W/(m²K)	7.782 0.129	7.824 0.128	7.846 0.127	7.832 0.128	7.821 0.128
Airborne sound insulation** Rw(C;Ctr;C100-5000)		>26 dB	61 dB	55 dB	54 dB	53 dB

*applied λ-values for panel 300 mm: straw (86%) λ = 0.0568 W/mK (SK-DoP), wood (14%) λ = 0.130 W/mK
**applied λ-value of the Passive House–certified EcoCocon panel (400 mm thick) including the timber structure λ = 0.0645 W/mK
***panels are equipped with airtight membrane on the exterior side.

Wall Variations and Performance

WALL WITH THE FOLLOWING
BUILD-UP COMBINATION

External layer: EcoCocon airtight breather membrane + Knauf cement board CB (9 mm) + Weatherboard WB 365 (9.5 mm) (+ external finish)

Internal layer		Uncovered Straw panel	Clay plaster 25 mm	Gypsum plaster 25 mm	Gypsum board 12.5 mm	Gypsum fibre board 12.5 mm
Reaction to fire classification		E	A	A1-s1, d0	A2-s1, d0	A2-s1, d0
Resistance to fire		REI 45 REI 60-ef	REI 120 REI 60-ef	REI 90 REI 60-ef	REI 45 REI 60-ef	REI 45 REI 60-ef
Panel 300 mm*	Thermal resistance R (m^2K)/W Heat transfer coefficient U W/(m^2K)	4.941 0.202	4.983 0.201	5.141 0.195	4.911 0.200	4.980 0.201
Panel 400 mm**	Thermal resistance R (m^2K)/W Heat transfer coefficient U W/(m^2K)	6.627 0.151	6.669 0.150	6.691 0.149	6.677 0.150	6.666 0.150
Airborne sound insulation** Rw(C;Ctr;C100-5000)		> 26 dB	39 dB	37 dB	38 dB	36 dB

*applied λ-values for panel 300 mm: straw (86%) λ = 0.0568 W/mK (SK-DoP), wood (14%) λ = 0.130 W/mK
**applied λ-value of the Passive House–certified EcoCocon panel (400 mm thick) including the timber structure λ = 0.0645 W/mK
***panels are equipped with airtight membrane on the exterior side.

Wall Variations and Performance

PARTITION WALL WITH THE FOLLOWING BUILD-UP COMBINATION

Performance of 3 different build-up configurations

Configuration	Internal wall 1	Internal wall 2	Internal wall 3
Layers	2x12.5 mm Gypsum board (acoustic screws) - Membrane - Panel 300 mm - 2x12.5 mm Gypsum board (acoustic screws)	Fermacell fibreboard 15 mm - Membrane - Panel 300 mm - OSB 12.5 mm - Fermacell fibreboard 12.5 mm	Fermacell fibreboard 12.5 mm - Membrane - Panel 400 mm - Fermacell fibre board 12.5 mm
Reaction to fire classification	A2-s1, d0	A2-s1, d0	A2-s1, d0
Resistance to fire*	REI 60 REI 60-ef	REI 60 (expected, ”pre-accepted solution”) REI 60-ef (expected, 12.5 mm Fermacell withstood 58 minutes)	REI 45 REI 45-ef
Airborne sound insulation Rw(C;Ctr;C100-5000)	65 dB	41 dB	41 dB

04 Performance Characteristics

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Thermal Performance

Passive house certified Product/ Performance

Thermal insulation

The Passive House certified EcoCocon panel has a declared thermal conductivity of **λ = 0.0645 W/mK** (Includes timber structure). Certification is valid only for EcoCocon panel 400 mm thick.
Pure straw according to SK-DoP (λ = 0.0568 W/mK)

Details and pre-calculated thermal bridges

The system includes details and their pre-calculated thermal bridges.

Airtight concept

EcoCocon Wall System confirms the airtight layer concept with breather membrane (sd<0.2m).

Thermal mass, phase shifting

The relatively heavy straw insulation in EcoCocon panels provides an 18-hour thermal phase shift, extended to 25 hours when combined with a 60 mm wood fibre board. This significantly reduces summer overheating and helps retain warmth during cooler nights, ensuring year-round indoor comfort.



Increasing the thickness of the added fibre board enhances the thermal performance of the EcoCocon Straw Wall System.

EcoCocon Panel without finishes	Passive House certified U-value*	Calculated U-value**
300 mm (86% straw, 14% timber)	Not applicable	0.205 W/m²K
400 mm (90% straw, 10% timber)	0.152 W/m²K	0.150 W/m²K
EcoCocon Panel 400 mm + Wood fibre board		
+ 60 mm	0.129 W/m²K	0.127 W/m²K
+ 80 mm	0.122 W/m²K	0.120 W/m²K
+ 100 mm	0.116 W/m²K	0.115 W/m²K
+ 140 mm	0.106 W/m²K	0.105 W/m²K

*applied λ-value:
EcoCocon panel λ = 0.0645 W/mK
Wood fibre board λ = 0.049 W/mK

**applied λ-value:
Straw λ = 0.0568 W/mK
Wood λ = 0.130 W/mK
Wood fibre board λ = 0.049 W/mK

Passive House certification supports, but does not guarantee, compliance with the full Passive House standard, which depends on the overall building design.

EcoCocon U-value calculator

Mechanical Resistance and Stability

EcoCocon panels fulfill key structural requirements for mechanical resistance and stability according to Eurocode 5 construction regulations.

Load resistance and structural integrity

» Designed to safely withstand applied loads during both construction and use, preventing collapse or excessive deformation

Key mechanical parameters

» Load capacity, material density, and dimensional stability

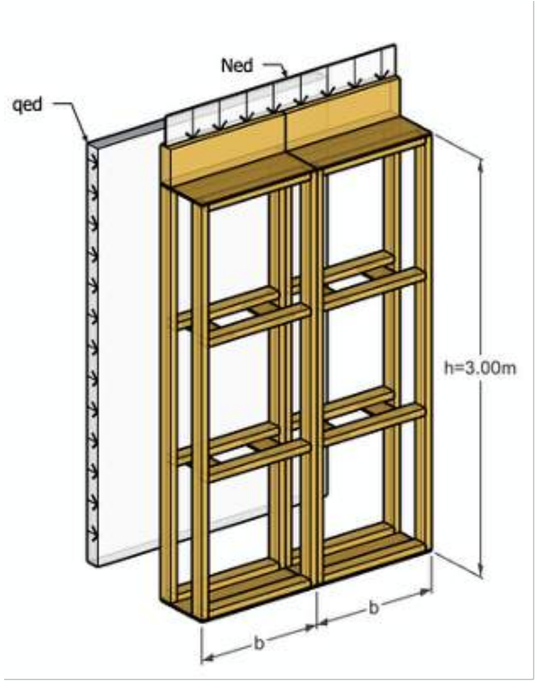
» Engineered load-bearing, twin-stud timber frame panel with insulating straw infill ensures robustness and reliability

Connection details

» Panel joints and connection details are available in Annex 1 - Structural Connections.

Calculation and verification

» Structural performance is calculated/verified by EcoCocon Structural Engineers.



Panel type & dimensions	Vertical design load-bearing capacity Ned (kN/m) under horizontal design wind load qed (kN/m²)			
Horizontal wind load (kN/m²)	**No wind**	**± 0.8**	**± 1.2**	**± 1.6**
Standard panel 0.85 m x 3.00 m	25 kN/m	24 kN/m	18 kN/m	12 kN/m
Standard panel 0.40 m x 3.00 m	53 kN/m	53 kN/m	53 kN/m	53 kN/m

The table presents values determined under the following assumptions:

» EcoCocon panels use a twin-stud system with internal and external studs capable of carrying loads independently. The listed load-bearing capacities apply to one side only (either internal or external); the contribution of the opposite side is not included.

» The values are applicable only when a timber beam is installed above the panel and is assumed to behave as a simply supported beam between studs.

Reaction to Fire

This Reaction to Fire rating applies to specific EcoCocon interior wall build-ups with defined finishes. It may differ from the fire classification of individual finishing materials when used separately.

Internal wall face finish	Thickness	Reaction to fire classification:
Uncovered panel		E
Clay plaster	25-30 mm	B-s1, d0
Membrane + Steico Protect H 60 mm + mineral plaster finish	12.5 mm	B-s1, d0
Gypsum boards	12.5 mm	B-s1, d0
Gypsum fibre boards	12.5 mm	B-s1, d0
Gypsum plaster	25 mm	B-s1, d0

Tested in accordance with EN 13823 and EN ISO 11925-2

Refer to reaction to fire tests on website





Fire Resistance

EcoCocon Straw Panels achieve REI 45 fire resistance even when uncovered. Adding layers further enhances their fire performance.

An uncovered EcoCocon panel with an airtight membrane resists fire because compressed straw chars on the surface and its natural silica content slows combustion.

Tests were conducted on EcoCocon wall segments made of 250 mm straw panels under load of 83 kN/m. These results apply to panels defined as load-bearing walls with a fire-separating function and are valid for EcoCocon panel thicknesses from 300 to 400 mm. Any additional layers shall not reduce tested fire resistance performance of the EcoCocon panels. For complete wall configurations and test results refer to Classification of fire resistance report.

Internal wall face	External layers	**Fire resistance classification:**
Panel without surface treatment	Breather membrane-airtight (Tyvek Solid)*	RE 30 / REI 45 / REW 30
Gypsum boards (Knauf GKBI H2)* 12.5 mm	Breather membrane-airtight (Tyvek Solid)*	RE 30 / REI 45 / REW 30
Gypsum fibre boards (Fermacell)* 12.5 mm	Breather membrane-airtight (Tyvek Solid)*	RE 30 / REI 45 / REW 30
Gypsum plaster (Knauf MP75)* 25 mm	Breather membrane-airtight (Tyvek Solid)*	RE 90 / REI 90 / REW 90
Clay plaster 25-30 mm	Wood fibre boards (Steico Protect H)*	RE 120 / REI 120 / REW 120

External wall face	Internal layers	**Fire resistance classification:**
FireStop A2 membrane*	Gypsum plaster (Knauf MP75)* 25 mm	RE 90-ef / REI 90-ef / REW 90-ef
Straw fibre boards (VestaEco PROTECT)* bulk density of 180 kg/m^3	Gypsum boards (Knauf GKBI H2)* 12.5 mm	RE 90-ef / REI 90-ef / REW 90-ef
Wood fibre boards (Steico Protect H)* bulk density of 265 kg/m^3	Breather membrane-airtight (Tyvek Solid)*	RE 120-ef / REI 120-ef / REW-ef 120

* or equivalent

Tested in accordance with EN 1365-1, EN 13501-2

Examples of Tests

Carried out on EcoCocon Straw Panels

Fire resistance REI 120

Fire test on a 250 mm EcoCocon wall (with clay plaster inside and wood fibre outside) reached REI 120 under EU standards — 120 minutes of resistance, integrity, and insulation at 1050 °C.

Fire test from interior



Fire resistance REI 120-ef

Exterior fire test on wood fibre board achieved REI 120-ef — with max. deformation of 7.7 mm, no visible exterior damage, and interior clay surface staying below 40 °C.

Fire test on exterior woodfibre layer
Video 1min. 24 seconds



Fire behavior of EcoCocon wall with interior clay plaster and exterior wood-fibre board.

Fire Protection Ability

K1 10, K2 10

Fire protection ability (K1, K2) refers to how well surface materials protect underlying structures from ignition during the early stages of a fire.

Requirements for K1 10 or K2 10 surfaces apply in several European countries, particularly for escape routes and internal wall or ceiling linings.

Fire protection ability

Certificate K1 10 and K2 10 ensure 10 minutes integrity of the EcoCocon panel covered by the following materials with fire protection ability:

- Clay 25 mm, see Classification Report
- Gypsum-fibre board (Fermacell) 12.5 mm, see Classification Report

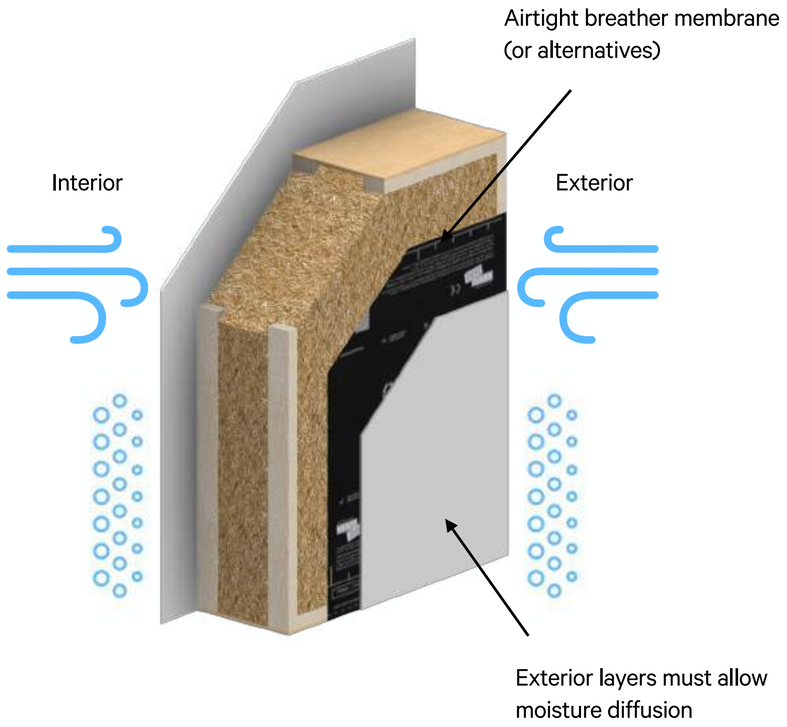
Tested in accordance with EN 14135 and DS/EN 1363-1

Refer to Classification Reports on website



Hydrothermal Performance

EcoCocon provides an airtight yet vapour-open wall system, allowing safe moisture diffusion through the construction.



Diffusion / Vapour-permeable wall system

Rules:

- Any materials installed on the exterior must be fully diffusion-open (Sd<0,2m).
- The sd-value of interior layers are typically higher supporting a safe outward drying potential.

Requirements:

- Moisture behavior must be verified by WUFI calculations.
- If the wall build-up hasn't already been verified with WUFI, it must be checked.

Water vapour resistance factor (μ) of the uncovered pane isl 3.34

Airtight (yet vapour-permeable) wall system

Rules

- Airtightness prevents moisture damage by stopping warm, moist air from entering the wall and condensing.
- The EcoCocon Wall System typically uses a vapour-permeable membrane (Sd = 0.05 m) on the exterior, sealed with 60 mm airtight tape and secured with plywood strips after assembly.
- Always use a vapour-permeable membrane (Sd < 0.2 m) or a verified wall build-up with airtight, taped vapour-open boards.

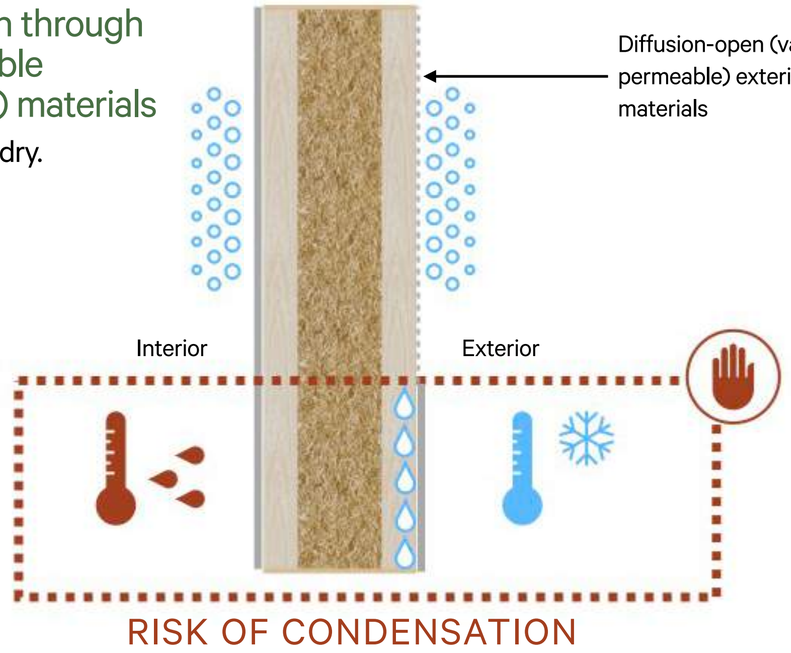
Requirements:

- All joints must be detailed airtight, and the membrane must be connected to the foundation, roof, windows, and penetrations.
- A ventilation system should be designed to manage moisture and maintain healthy indoor humidity.
- A blower door test is recommended during construction to verify airtightness.

Vapour Diffusion vs. Airtightness

Vapour diffusion through vapour-permeable (diffusion-open) materials

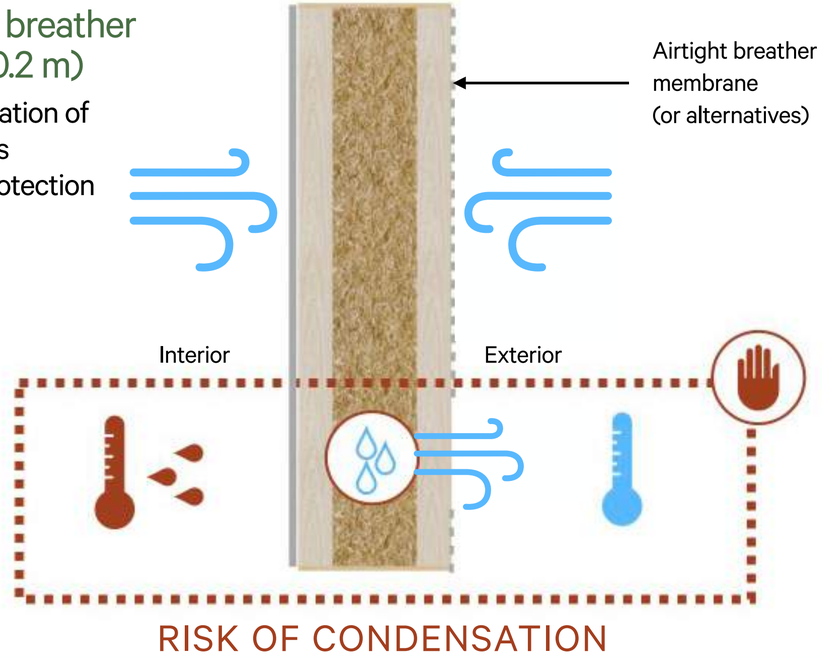
Keeps construction dry.



Vapour diffusion through a vapour-permeable wall surface allows only about 1 g of water per day per square meter. WUFI simulations are essential to verify moisture safety.

Airtightness with breather membrane (Sd <0.2 m)

Protects against infiltration of moist air (and provides temporary weather protection during construction).



Through a 1 mm wide gap running 1 meter in length, up to 360 g of water per day per meter can enter the construction with moist air. It is recommended to verify airtightness with a blower door test after the airtight layer is completed.

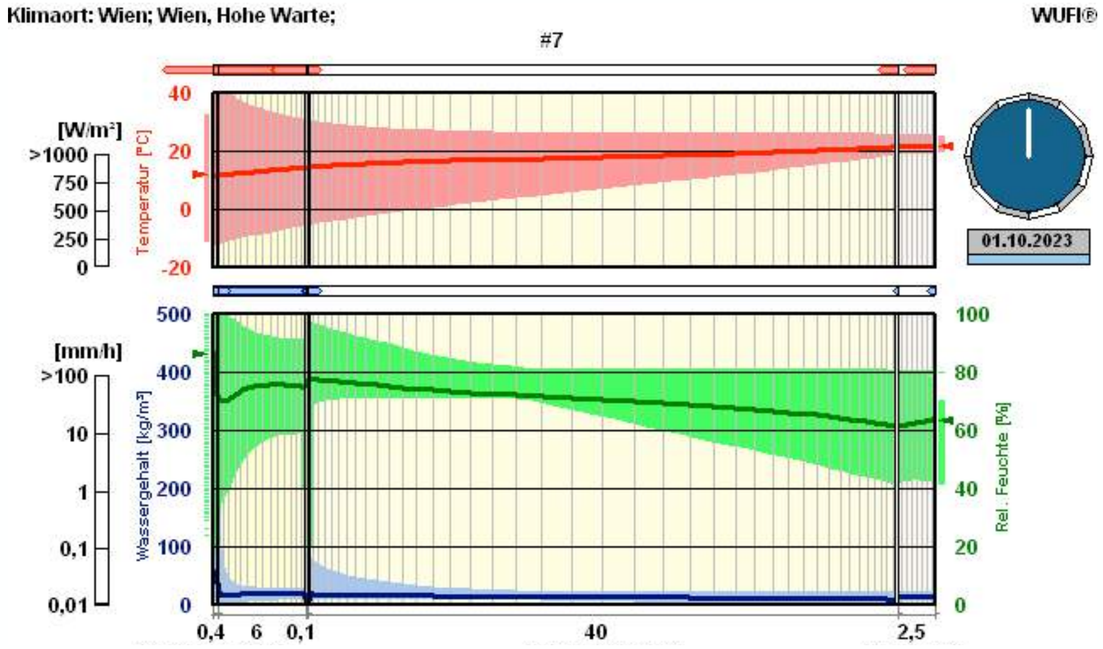
WUFI Simulation - Example

The hygrothermal performance of EcoCocon walls has been verified through WUFI simulations for various climate conditions and supported by on-site monitoring.

Refer to WUFI Reports on website

Example:

WUFI simulation of the standard EcoCocon wall build-up with interior clay plaster and exterior wood-fibre board 60 mm with vapour open render in climate of Vienna.



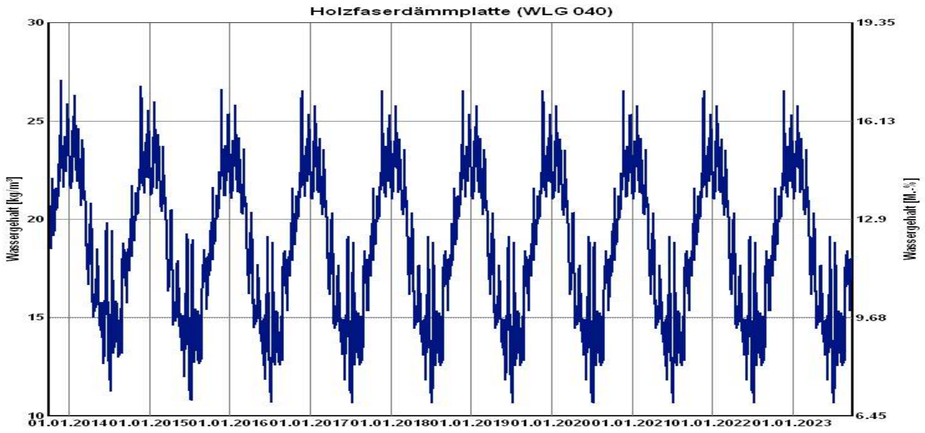
Certified render for wood-fibre board
Wood-fibre board
Airtight breather membrane

Straw panel

Clay plaster

Role of wood fibre board

Wood fibre boards efficiently move moisture away from the breather membrane. Winter humidity stays below 25%, and boards dry quickly in summer.

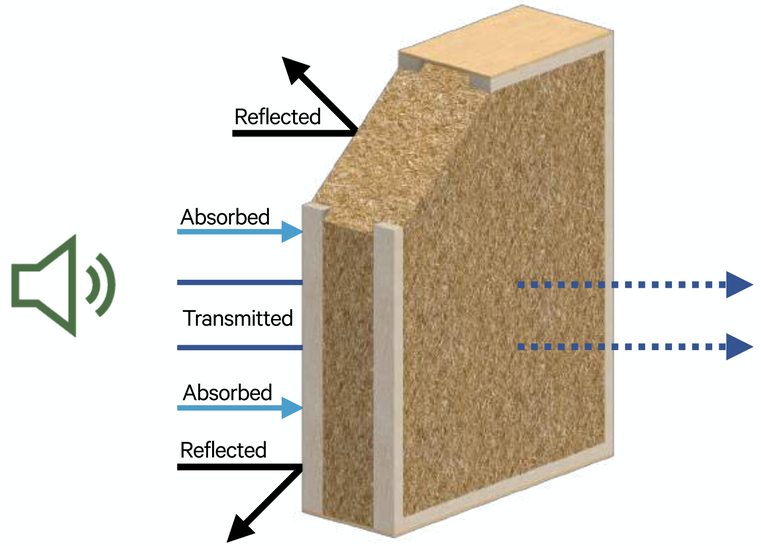


In some build-ups, a vapour-open board with airtightly taped joints can function as the airtight layer. However, it must be verified with WUFI to ensure hygrothermal safety.

Acoustic Performance

Noise protection

Acoustic tests show that EcoCocon panels reduce airborne sound, and performance can be further improved with additional layers to meet acoustic standards for residential, commercial, and public buildings.



Exterior wall

Panel thickness	EcoCocon panel and build-up		Sound reduction index R_w (C; C_{tr}; $C_{tr,\ 100\text{-}5000}$) (dB)
400 mm	Interior:	clay plaster 25 mm, reinforced fine clay plaster 5 mm thick	**54** (-1; -3; -0)
	Exterior:	60 mm thick wood fibre board	
300 mm	Interior:	60 mm thick wood fibre board clay plaster 25 mm	**61** (-2; -9)
	Exterior:	vapour-permeable membrane 60 mm thick wood fibre board clay plaster 25 mm	
300 mm	Interior:	gypsum fibre board 12,5 mm	**53** (-3; -10)
	Exterior:	vapour-permeable membrane 60 mm thick wood fibre board	

Partition wall

Panel thickness	EcoCocon panel and build-up		Sound reduction index R_w (C; C_{tr}; $C_{tr,\ 100\text{-}5000}$) (dB)
300 mm		uncovered straw	**26** (-1; -4)
300 mm	Side 1	2x gypsum board 12.5 mm	**52** (-1; -4)
	Side 2	vapour-permeable membrane, 2x gypsum board 12.5 mm, standard screws	
300 mm	Side 1	2x gypsum board 12.5 mm	**65** (-2; -7)
	Side 2	vapour-permeable membrane, 2x gypsum board 12.5 mm, sound-fastener screws	
300 mm	Side 1	2x gypsum fibre board 12,5 mm	**52** (-2; -5)
	Side 2	vapour-permeable membrane 2x gypsum fibre board 12,5 mm	

Hygiene, Health and Environment

The system is based on natural, non-toxic materials and designed to be resistant to mould, supporting both indoor health and building durability.

Refer to EPD on website

Release of hazardous substances

EcoCocon Straw panels have been independently tested (accredited test lab Eurofins) for indoor air quality according to strict standards (CDPH Section 01350). The results are extremely positive and show that:

- All chemical emissions are well below safety limits.
- The product is safe for use in classrooms and office buildings, which are one of the most strict environments.

It meets VOC international standards for low emissions and healthy indoor air.

Moisture resistance

EcoCocon's vapour-permeable wall system is designed to manage moisture safely, eliminating the risk of excess moisture being trapped in the construction.

- Moisture can diffuse outward, while the structure remains protected against ingress.
- Maintaining normal indoor humidity through proper ventilation is essential.
- WUFI simulations are essential to verify moisture safety and ensure long-term performance.

Mould resistance

EcoCocon wall system shows good biological durability and suitability for healthy indoor environments when properly protected and ventilated. Pressed straw used in EcoCocon panels shows:

- Good mould resistance under normal indoor conditions (50% RH), with no visible fungal growth.
- Even under extreme humidity (95% RH), fungal growth remains limited (max. 25% surface coverage).

05

Panel Project Requirements

Panel Project Information 60

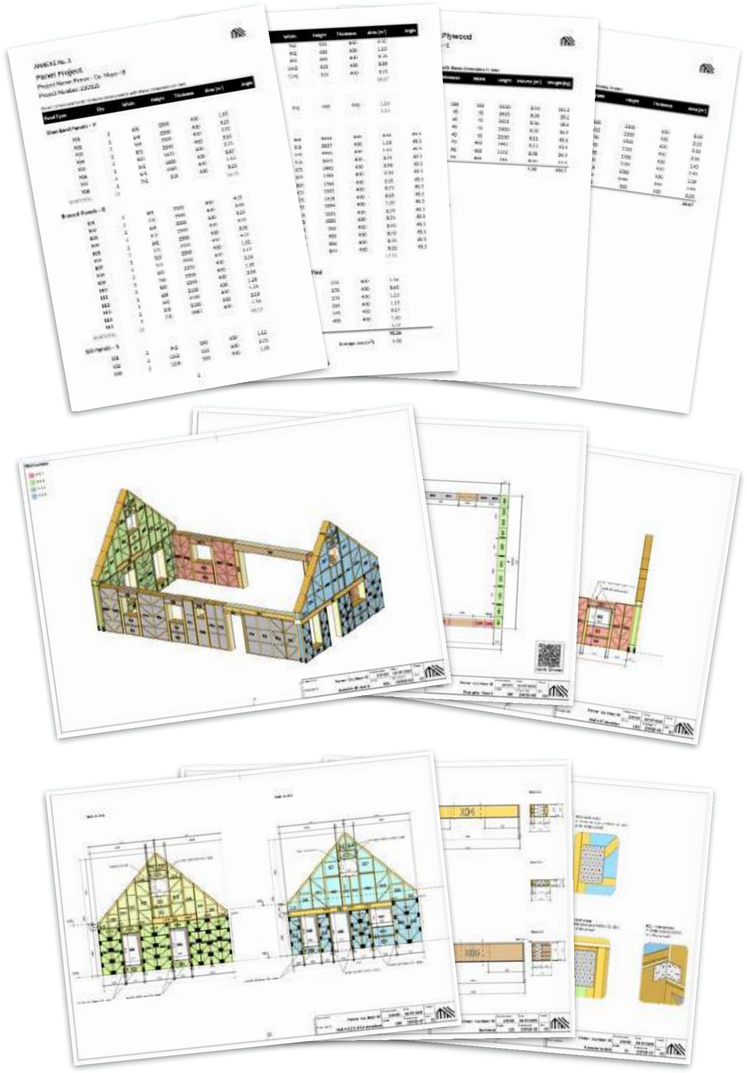
Design Process 63

Panel Project Information

A Panel Project is the most important document and serves as a basic design and production document as well as a panel layout plan for assembly.

Panel types and sizes are planned exclusively by the EcoCocon in-house engineering team, using load specifications provided by the client's engineer.

Preparation of a Panel Project is managed by your Technical Sales Consultant.



The Panel Project consists of:

- Table of panel types with dimensions
- 3D views of EcoCocon walls (walls are colour-coded)
- Elevations of EcoCocon walls, dimensions of walls and clear opening widths and heights
- Shop-drawings of box lintels (if applicable)
- List of required additional timber and plywood goods
- List of structural openings
- Floor plan depicting the assigned wall numbers
- 3D file of the final model in .ifc or .skp format

Along with The Panel Project, the client's architect and structural engineer will receive The Calculation Package.

The Calculation Package, consists of:

- Structural calculation scheme with sections
- Loads and load combinations
- Detailed calculations for critical elements (studs, columns, beams)
- Support reactions for foundation design
- Additional comments if necessary

Panel Project in Order Chain Context

	Time needed		
PRICE ESTIMATE	**1 week**	Client provides architectural drawings. Based on exterior wall surface without openings, we estimate the price of EcoCocon including all the supplementary materials.	Initial estimates are nonbinding.
PANEL PROJECT	**Up to 8 weeks**	Once the client accepts the estimate, we prepare a detailed, technical Panel Project together with the designer and engineer.	The Panel Project preparation fee is separate from the main order and is non-refundable, even if no order is placed.
ORDER	**Up to 2 weeks**	Client approves the detailed offer and the purchase agreement is signed.	For large scale projects time and schedule will be adapted according to the project.
PRODUCTION	**12 weeks**	After receiving 50% advance payment, the project is included in the production lineup.	
DELIVERY	**Up to 2 weeks** (region-dependent)	When the order is complete, and upon the receipt of the final payment, the panels are shipped directly to the construction site.	

PANEL PROJECT INFORMATION

Before You Start

Consider:

- Consult the Technical Sales Consultant (TSC) and/or EcoCocon engineering team early in the process.
- Respect timber design characteristics and its implications.
- Design with assembly in mind from the start.
- Try to avoid overly complex bespoke shapes to prevent unnecessary complications.
- Read the Guides: EcoCocon Designer Guide & EcoCocon Structural Engineer Guide.
- Complete all Project Submission Requirements thoroughly.



Design Process

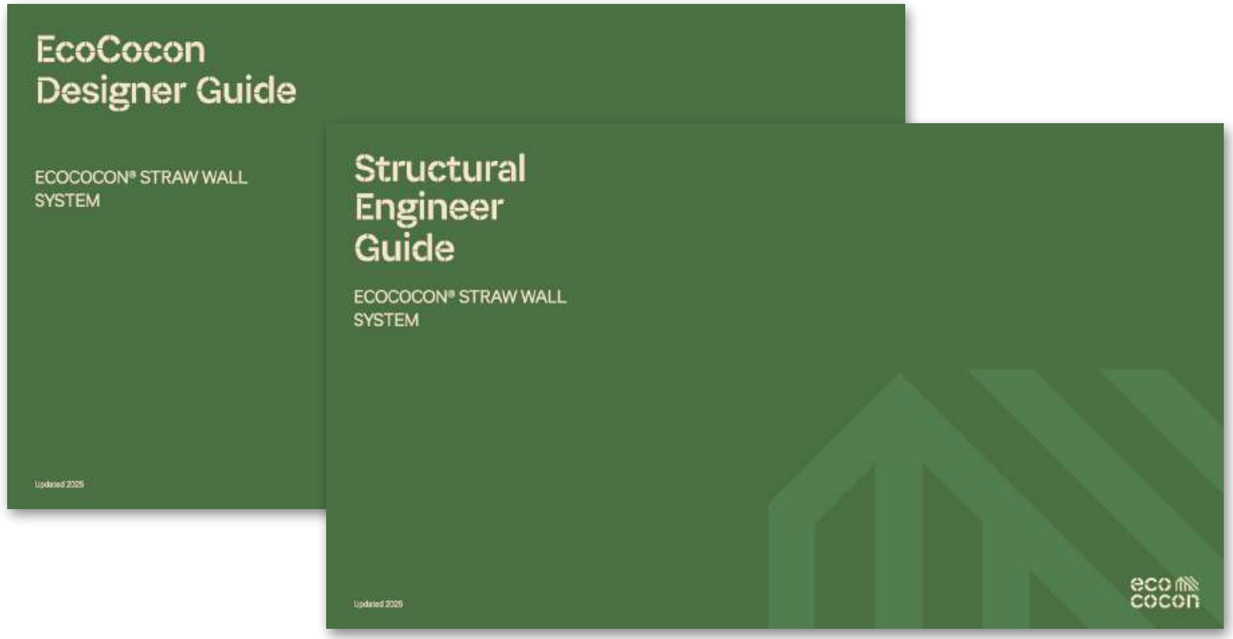
During step 4, only minor adjustments are allowed. Any design change from the client may require full recalculation and a new Panel Project, causing delays and extra fees.

	Preparation	Creation		Authorisation	
	1	2	3	4	5
Client's Designer & Structural Engineer	**Designer & Structural Engineer** prepare conceptual design referring to the EcoCocon Designer Guide & EcoCocon Structural Engineer Guide (and details in downloads).	**Designer & Structural Engineer** must provide fully coordinated wall outlines, details and loads in accordance with the Project Submission Requirements document.	**Designer** checks 3D outlines; provides comments, requests consultation if needed.	**Designer** verifies Panel Project, **Structural Engineer** reviews Calculation Package and both provide comments if necessary.	On behalf of the client a competent person (Builder, Designer, Engineer) verifies Panel Project with signature.
	Preliminary design	Detailed design & Panel Project Preparation		Panel Order	
EcoCocon Technical Sales Consultant (TSC)	**TSC** sends Panel Project Information document. Provides support and consultations, initiates meeting between **Client's Engineer and EcoCocon Engineer.**	**TSC** sends 3D outlines in SketchUp or IFC.	**TSC** sends Panel Project & Calculation Package.	**TSC** sends final Panel Project, Quotation, & Calculation package.	
		TSC coordinates all parties and technical consultations, arranges corrections regarding EcoCocon. If convenient, the Client's and EcoCocon Engineers can communicate directly.			
EcoCocon Engineering & Technician team	Technical consultations by EcoCocon Engineer.	The EcoCocon Structural Engineer calculates wall members from the given loads and prepares a calculation package, while the EcoCocon Technician develops the Panel Project and makes corrections if needed.		Client's Structural Engineer takes responsibility for the overall structural engineering	

Preliminary design

1 The Client's Designer prepares conceptual design with Structural Engineer

- Refer to the Guides on webpage: EcoCocon Designer Guide & EcoCocon Structural Engineer Guide (and Details in downloads).
- Communicate & consult with TSC (Technical Sales Consultant)
- Meeting between Client's Engineer and EcoCocon Engineer can be arranged through TSC (Technical Sales Consultant)



You can find EcoCocon Designer Guide and Structural Engineer Guide on website

2 Project submission by the Client's Designer and Structural Engineer (via the Client's Nominated Person to the Technical Sales Consultant)

» Client's Designer and Structural Engineer must provide fully coordinated wall outlines, details and loads in accordance with the Project Submission Requirements document.

» The Client's Nominated Person (for example project manager, designer, or structural engineer) is responsible for complete submission.

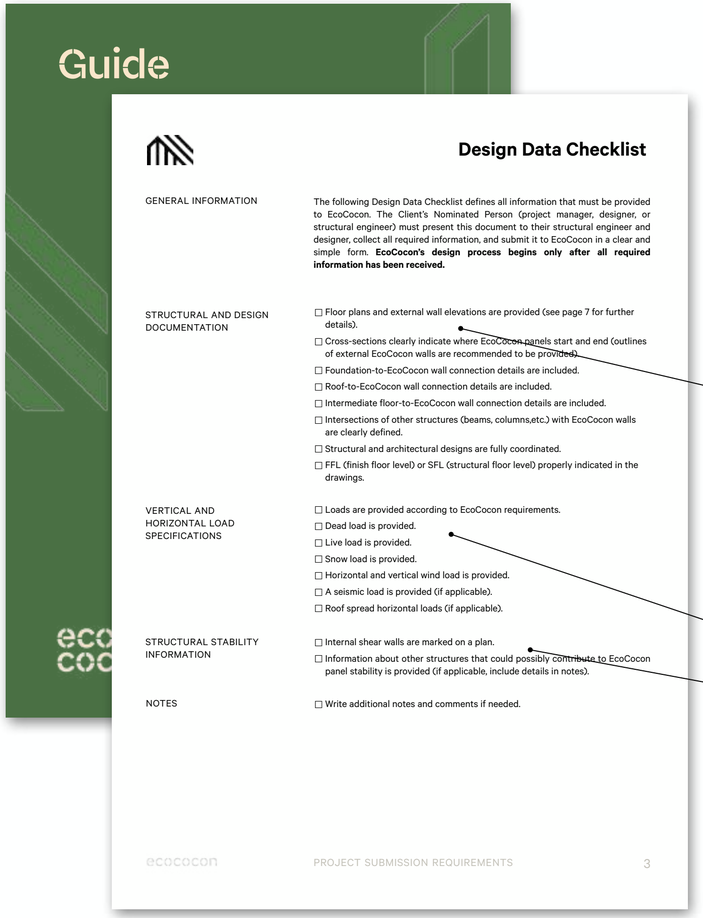
The Client's Nominated Person:

- **serves as the main contact** for the EcoCocon Technical Sales Consultant (TSC)
- **responsible** for completeness and accuracy
- **coordinates** submission data from Client's Designer & the Client's Structural Engineer

Refer to Project Submission Requirements on website

EcoCocon will not begin work on Panel Project until all the required information is provided by the client's project design team.

The Project Submission Requirements Guide:



The checklist in the Guide is used throughout the design process to guide the Designer and Structural Engineer in identifying the required data. It also helps the Client's Nominated Person coordinate the submission requirements.

The Client's Designer has to submit **floor plans and external wall elevations** (or 3D **outlines** of external EcoCocon walls)

In coordination with the Client's structural engineer:

Required details

Required shear walls

See next page for more information about submission requirements.

Shear walls are elements that the designer must consider as part of the overall design process.

2D (dwg) floor plans and external wall elevations or 3D IFC/SKP wall outlines of external EcoCocon walls need to be provided

Specified structural details must be provided by the Designer and/or Structural Engineer and must be mutually coordinated.

The Project Submission Requirements Guide:

OBJECTIVE

The objective of this
engineers on how to pr
includes a working ex
information in a simple

RECOMMENDED SOFTWARE

We recommend using
downloaded from https
draw on architectural d
this application is not r
using any drawing softw

LOADS

All loads which may af

- Dead Load (EN 199
- Live Load (EN 1991
- Snow Load (EN 199
- Wind Load (EN 199
- Seismic Load (EN 1
- Horizontal roof spr

Please note:

- Loads must be ca
  Eurocode.
- All given loads mus
- Only the self-weigh

MULTI-STOREY BUILDING

The load plan may fol
however, if necessary,
indicated.

ROOF AND FLOOR STRUCTURE

Structural roof and floo
EcoCocon engineers,
supported on EcoCoc
composite slab, it mu
openings. If lintels are
specified.

Load De

SHEAR WALLS

Lateral stability to the building is provided by shea
another from the ground floor level to the roof leve

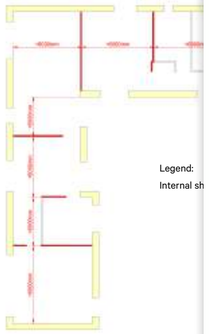
The Client's Structural Engineer should:

- Ensure that the shear walls are distributed ev
  both orthogonal directions and in proportion t
  that distribute the wind load into the braced
  installed at intervals of no more than 6 metre
- Prepare a building stability analysis with a ste
  which could take part of the shear loads, if it
  walls at intervals of every 6 meters. These st
  the client's structural engineer.
- If braced load-bearing walls drop out at
  Engineer must ensure that the shear force a
  elsewhere or is resisted by the steel/timb
  provided.
- Indicate shear walls or other structures (e.g.
  load plan.
- Design all internal shear walls (partitions, part

The EcoCocon Structural Engineer:

- Designs the external shear EcoCocon panels o

Figure 1:
Plan with shear walls indicated.



Legend:

Internal sh

Outlines

GENERAL INFORMATION

It is recommended to submit the contours of external EcoCocon walls in 3D (IFC, SKP) format or 2D (DWG) drawings. The following should be included in the outlines:

- **Openings:** All door and window openings must be shown as structural openings (rough openings)
- **Wall pockets:** Clearly show all wall pockets for floors, beams, and columns.
- **Structure:** Show foundation or other important structural elements. Also, indicate whether base and top wall plates are included in the wall contours.
- **Floor levels:** Show finish floor level or structural floor level.
- **Floor plans:** Plans showing EcoCocon wall outlines without any additional layers.

Figure 2:
Clear and detailed IFC model example showing EcoCocon wall outlines.

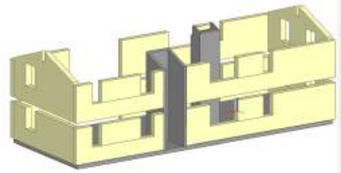
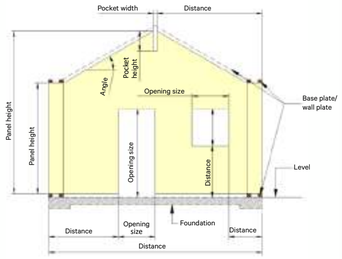


Figure 3:
Front elevation with clearly marked EcoCocon wall contours



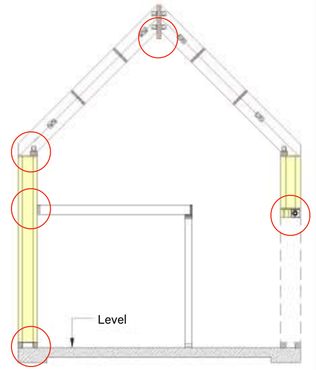
Deta

The client's structural engineer must ensure that all main details (see Figure are provided for EcoCocon engineers. These details are important for EcoCo engineers when analysing the loads presented.

These structural details include:

- External EcoCocon wall to the foundation.
- External EcoCocon wall to intermediate floor structure.
- External EcoCocon wall to roof structure.
- Beam-to-EcoCocon wall and column-to-EcoCocon wall connections.
- Other structural details affecting the EcoCocon structure (exterior shut detail, curtain wall detail, canopy detail, etc.)

Figure 4:
Main details and locations of the EcoCocon system.

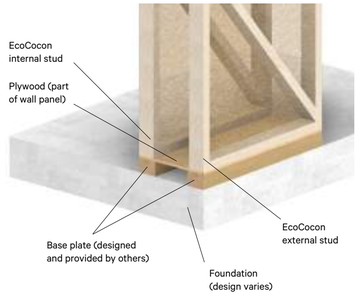


Details

It should be noted that the EcoCocon panel consists of a twin stud system, which can carry loads separately. It is necessary to ensure that both internal and external studs are properly supported (see Figure 5). It is recommended to support the floor & roof structure on the internal stud, and then the external stud carries its self-weight, half of the wind load/seismic load.

The design of base plate and fixings to foundations must be provided by the client's engineer. For single storey buildings, it is recommended that the plate is at least 45 × 95 mm. For two-storey and taller buildings, it should be at least 70 × 95 mm. Base plate details must be designed to withstand not only vertical compression forces but also lifting & shear forces. For lifting forces, please consult an EcoCocon engineer.

Figure 5:
EcoCocon wall panel foundation detail



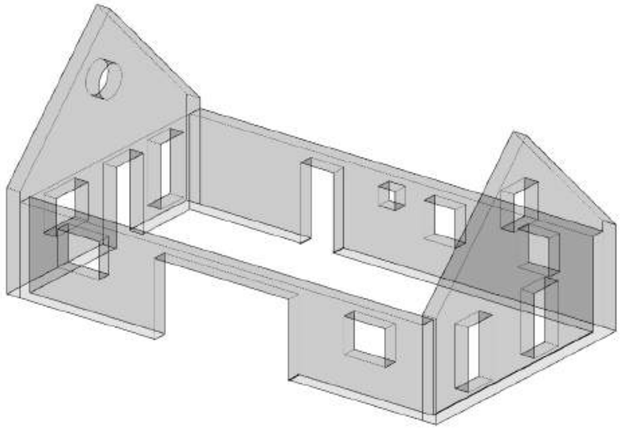
3

The Designer checks the 3D outlines provided by EcoCocon.

EcoCocon Design Technicians provide the 3D outlines.

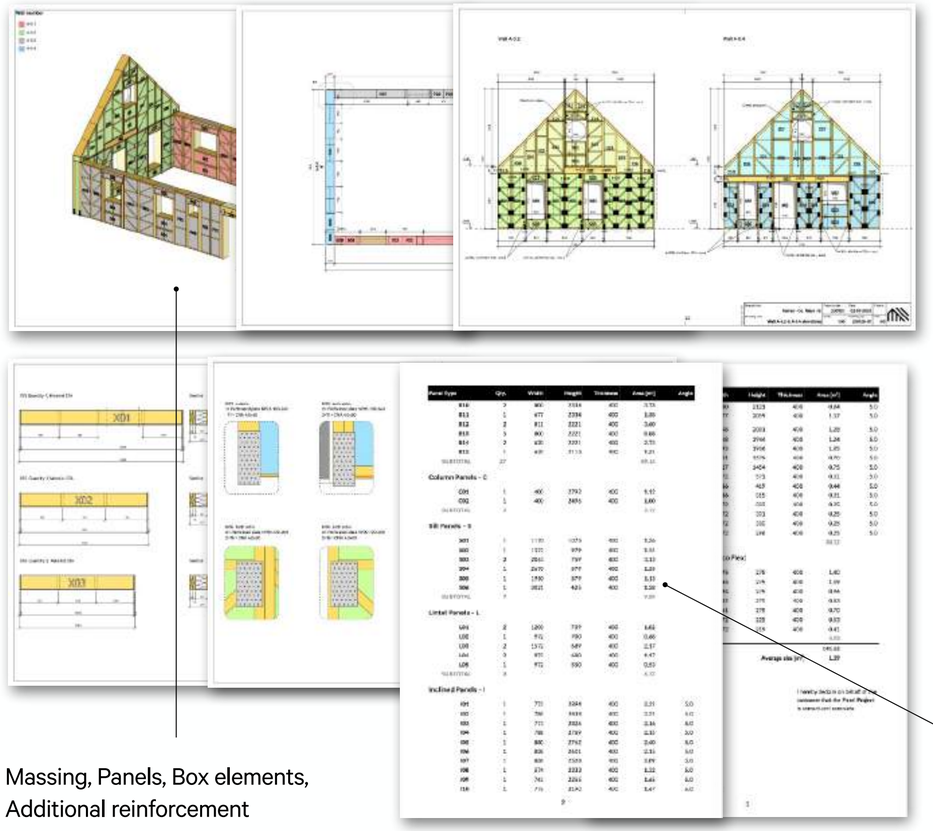
- If outlines align with the design, the Client's Designer approves them or provides comments
- The Client's Designer requests consultation if needed

(At the same time, the EcoCocon Structural Engineer reviews the submitted loads and structural data.)



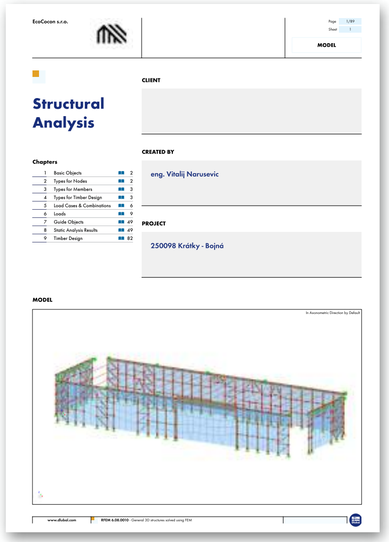
3D outlines provided by EcoCocon

The Panel Project



Massing, Panels, Box elements, Additional reinforcement

Calculation Package

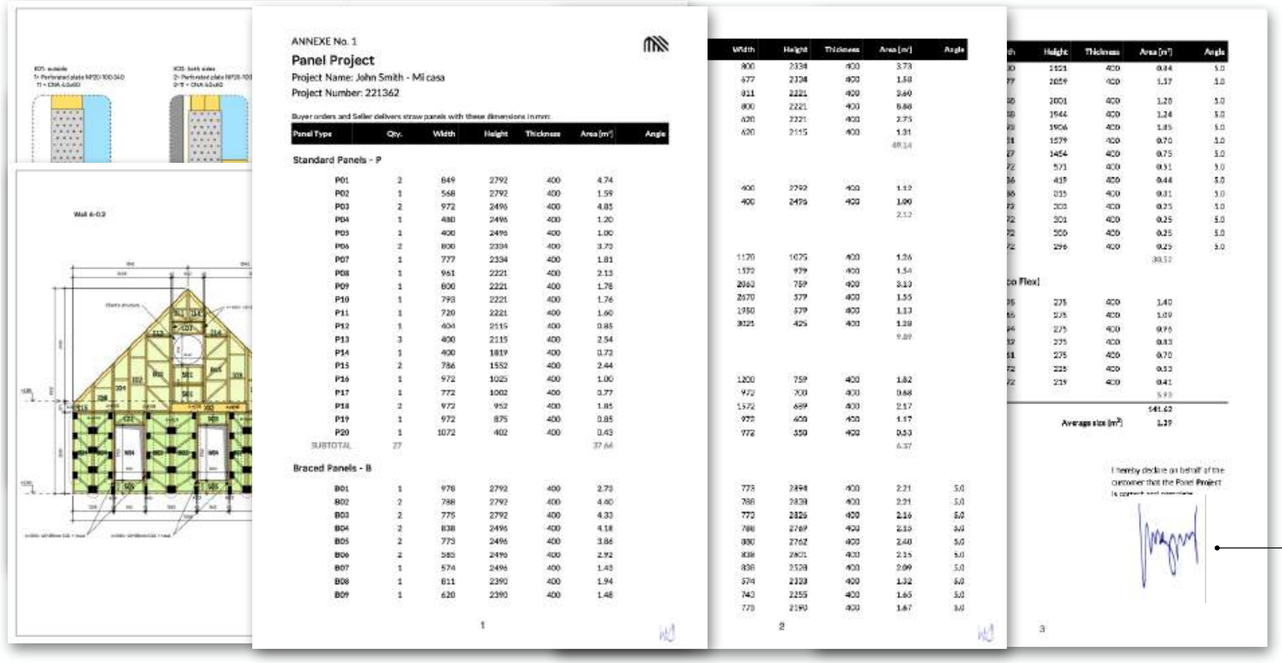


List of panels, additional materials and openings

4 Designer verifies Panel Project

After EcoCocon provides the 3D panel model, the client's designer reviews it.

- If the massing matches the design, the Client's Designer approves it allowing the Panel Project to move forward to electronic signing.
- If the massing does not match, the Client's Designer provides comments on the model and it is adjusted accordingly.
- Client's Structural Engineer reviews The Calculation Package and provides comments if necessary.



Signature

5 Signing Panel Project

After careful verification, the Panel Project is signed by a competent person on behalf of the client.

When Panel Project is completely finished, the Client's Designer should check the Panel Project for any additional details, such as metal nail plate reinforcement, that should be included in the final execution project.

The Client's Structural Engineer should verify the foundation's design.

Client's Structural Engineer takes responsibility for the overall structural engineering

Production & Delivery

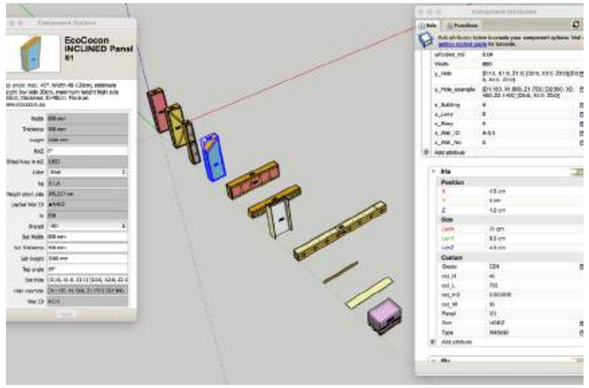
Parametric panels & digitalisation

The approved Panel Project then moves into the production phase. EcoCocon is the first company to industrialise and automate straw construction using parametric modelling and robotic manufacturing.

The entire production process — from straw de-dusting, pressing, and cutting to woodwork — is fully digitalised and automated.

Optimised packing and delivery

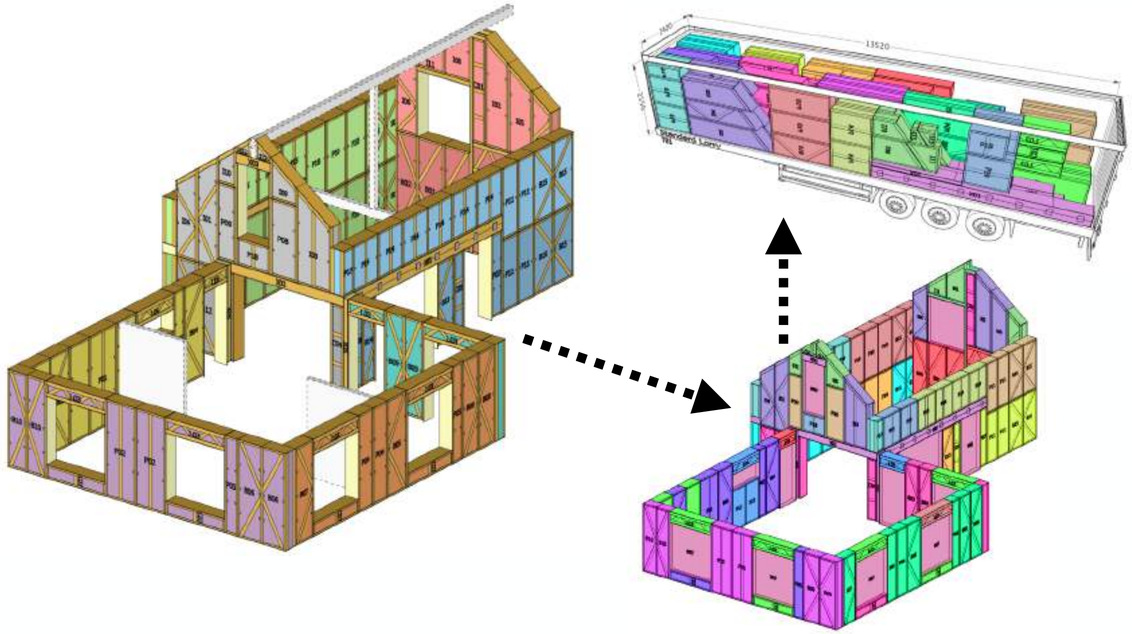
Panels are labelled, packed and loaded in a logical sequence to streamline on-site assembly, reducing handling time and improving efficiency during construction.











Refer to the Order & Transport Guide on website

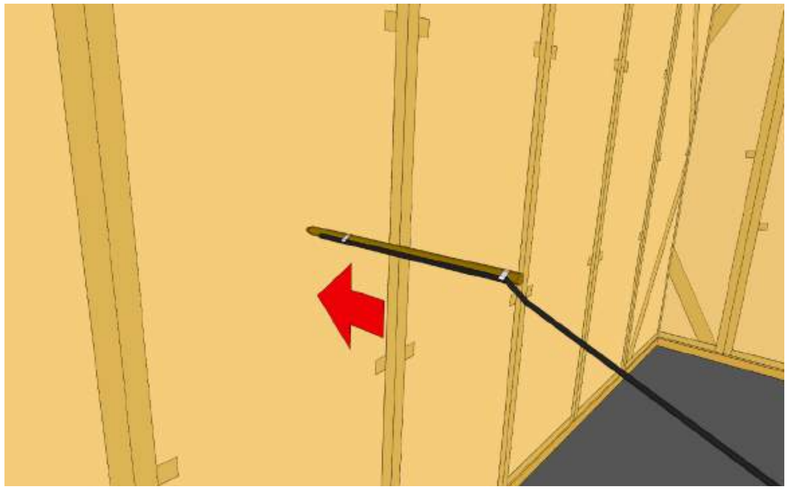
06 Service Installations

Wall Penetrations for Installations	72
Electrical Installation	74
Plumbing	76
Wall Mounts	77

Wall Penetrations for Installations

For installation, refer to the Assembly Guide on website

The architect/engineer should include a note in the project: Airtightness of wall penetrations must be ensured by an airtight connection to the breather membrane (or to an alternative airtight layer, such as a vapour-permeable weatherboard).



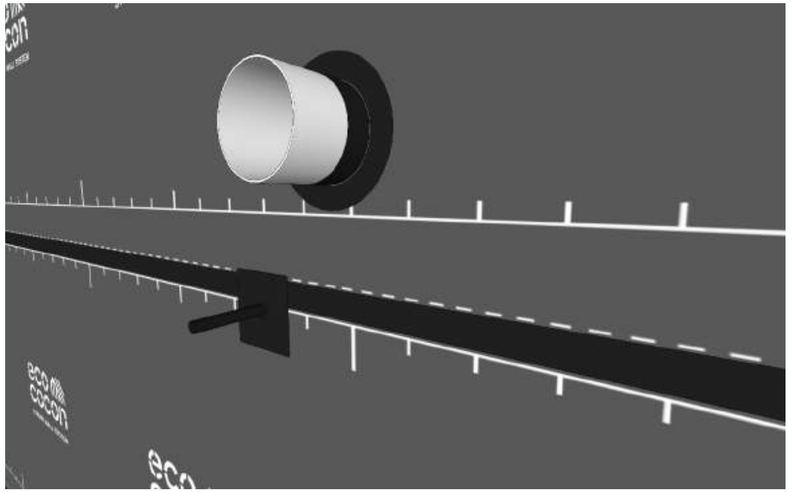
Small diameter cable

Small diameter cable can be pulled through using a thin stick.



Larger diameter pipe

Larger diameter pipe can be drilled with a diamond drill on site or panels can be delivered with predrilled holes.



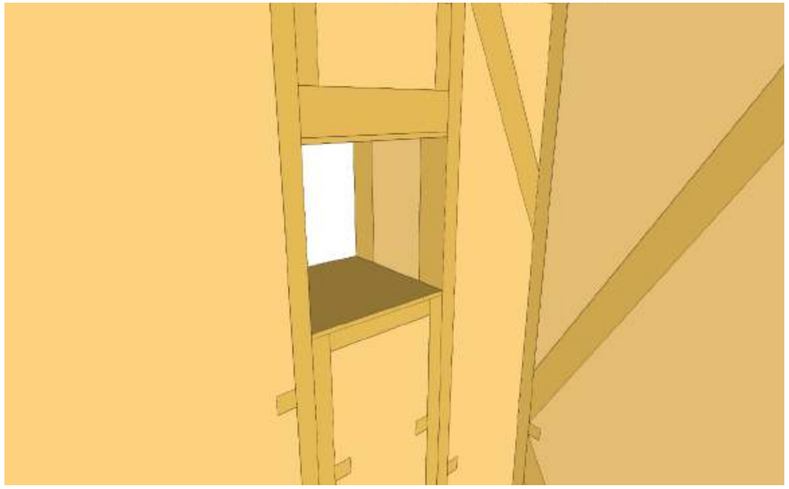
Airtightness is required

The system is designed to easily make all penetrations and connections airtight, at the interface with the airtight breather membrane on the exterior of the panel, ensuring the building's overall airtightness.

Wall Opening for Chimney or Ventilation

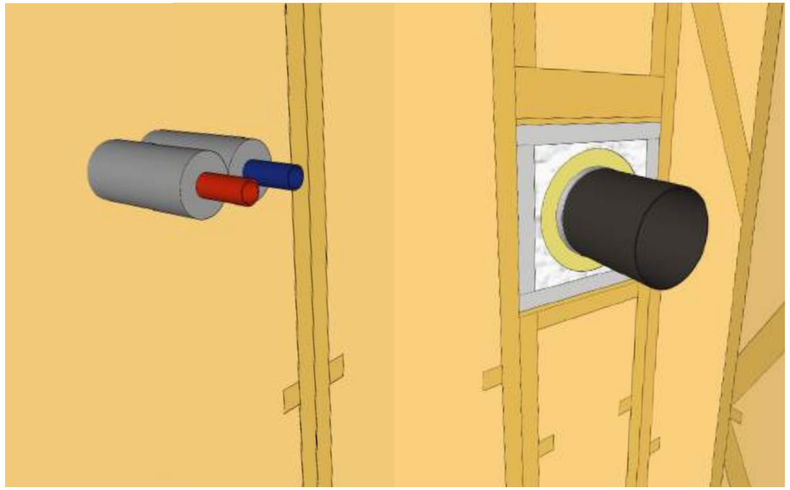
For ventilation ducts, chimneys, etc., wall openings should be planned in the Panel Project (PP) according to the architect's or engineer's specifications, including their size and position.

Penetrations and connections must be airtight and securely sealed to the exterior breather membrane or alternative, as specified by the architect or engineer in the project details.



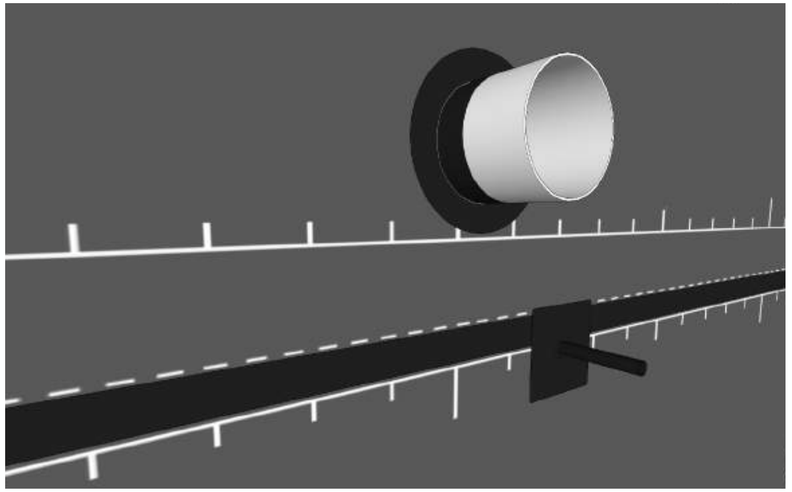
Openings for larger installation

Openings for ventilation ducts, chimneys, and other elements should be integrated into the Panel Project (PP) according to the architect's or engineer's specifications for size and location.



Ensuring compliance with regulations

All pipes and, if relevant, cables passing through the EcoCocon wall must be properly insulated to avoid condensation inside the wall. Smoke ducts and chimneys must be enclosed in fire-resistant materials, as required by national building regulations.



Airtightness is required

To help achieve the building's overall airtightness, the system allows for easy, airtight penetrations and connections at the intersection with the exterior breather membrane.

Electrical Installation

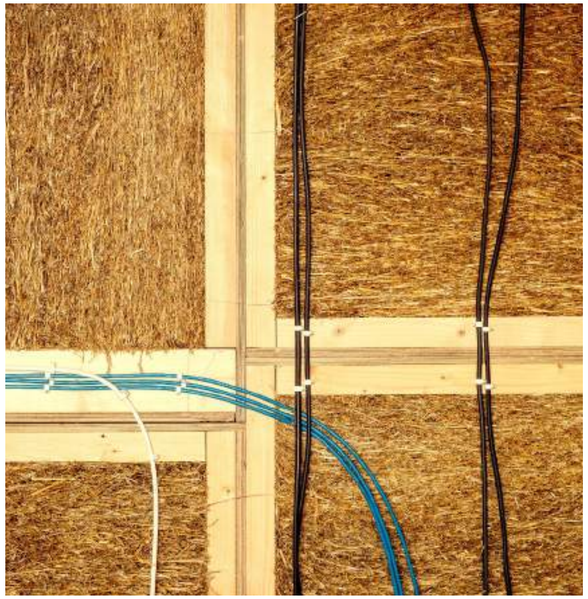
ELECTRICAL WIRING OPTIONS FOR ECOCOCON WALLS

Electrical installation must strictly adhere to national regulations.

- Depending on the region, electrical wiring can be attached to studs or directly to the straw before being plastered.
- Some countries require use of protective conduit.
- An installation void can be utilised universally.

Surface-mounted & plastered over

Wiring is fixed to the surface and embedded within the plaster layers.



Side-mounted & routed into straw

Cables are fixed along structural elements, with shallow channels routed into the straw.



Universal installation void

A dedicated service void allows flexible, accessible, and protected routing of all installations.



Electrical Installation

SOCKET INSTALLATION

Electrical installation must strictly adhere to national regulations.

Socket side-mounted on stud

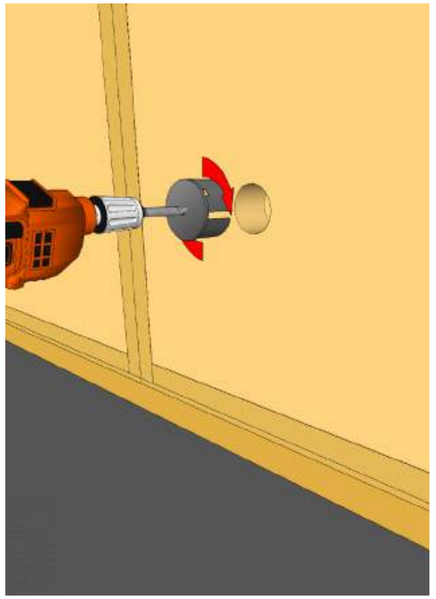
The socket can be fixed to the side of a stud.

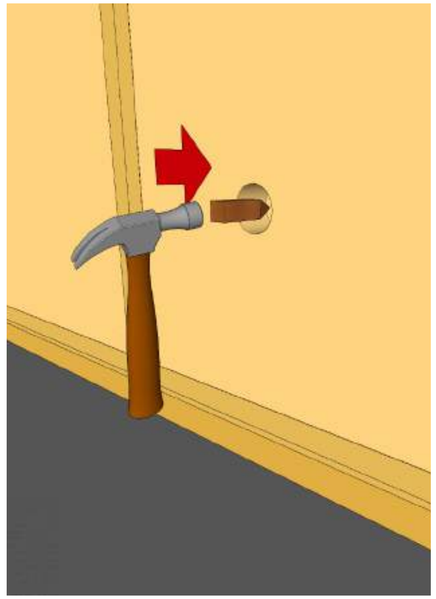


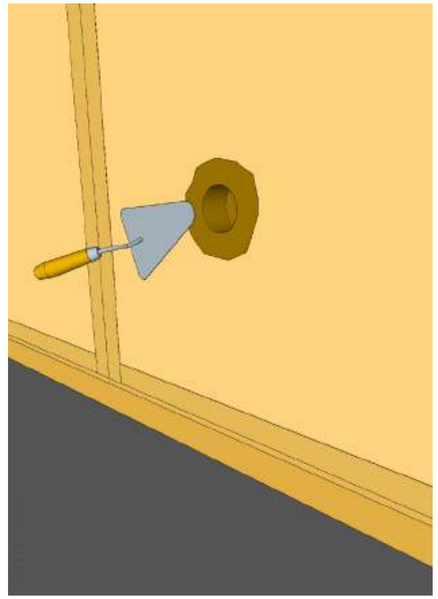
Socket mounted with peg support

Sockets are installed by routing an indent in the straw wall, inserting a wooden peg (~45×45×200 mm), applying plaster (clay or gypsum) behind the socket, and fixing it to the peg with a screw.

Socket mounted with peg support.
Video 1 min. 16 seconds









Plumbing

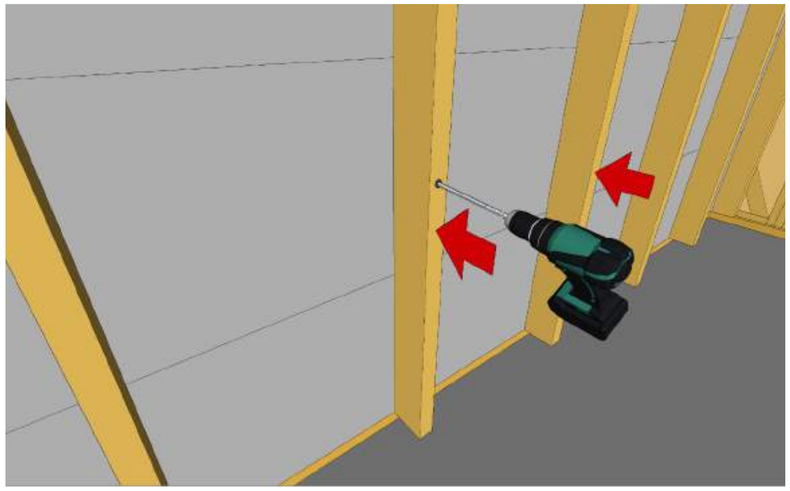
The plumbing should not be mounted directly in contact with straw. It is necessary to use a water resistant board (plywood, gypsum fibre boards, OSB) on the walls where the services and plumbing will be installed.

Possibilities to install plumbing:

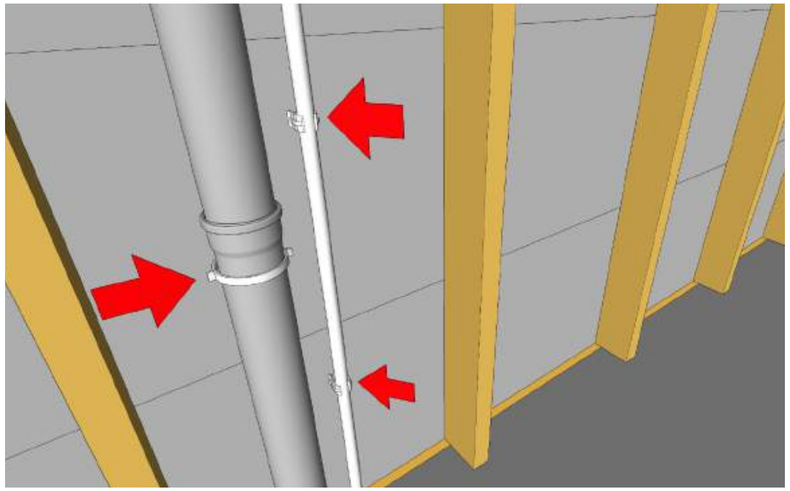
- Preferred: Route plumbing through separate partition walls keeps straw dry and simplifies access.
- Not Recommended: Direct installation on straw poses moisture risk.
- Best Practice: Use a service void. Install a protective layer over the straw, then create a gap for plumbing. This enhances durability and simplifies maintenance access.

Tiling on EcoCocon Straw Wall System:

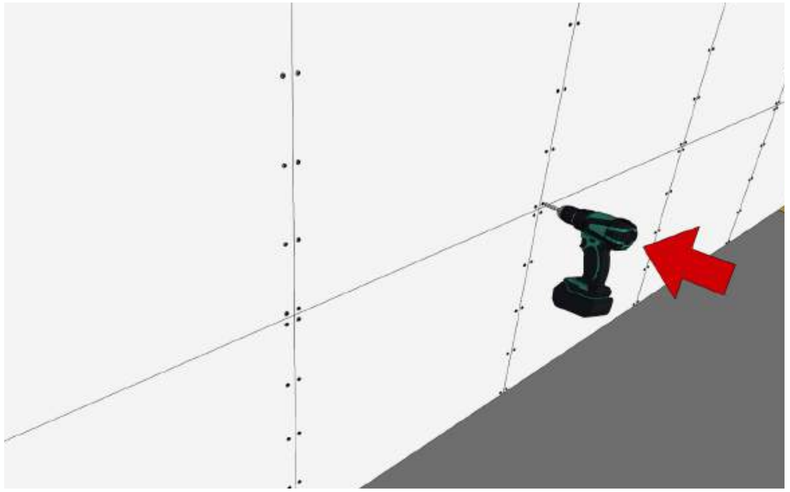
- Service Void Installation: ceramic tiles are fixed to a moisture-resistant gypsum board or gypsum fibre board mounted to the studs within the void space.
- Direct Mounting: moisture-resistant gypsum board or gypsum fiber board may be installed directly over the straw panels, then covered with ceramic tiles.



Using a service void to install services.



Easy fixing services to the board.



Covering the services void.

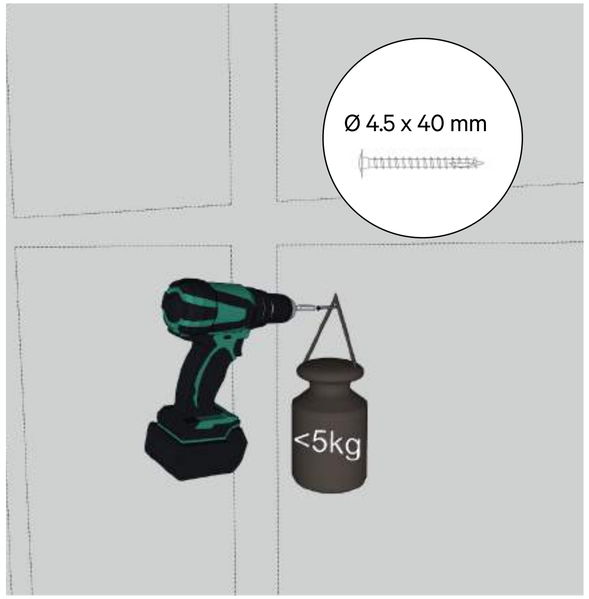
Wall Mounts

The following recommendations ensure secure mounting of fixtures, furniture, and heavy elements on EcoCocon walls based on different load capacities.

- Loads up to 5 kg, it is possible to mount with screws directly in the plaster.
- Loads up to 50 kg can be fixed in studs or horizontal elements.
- For any heavy elements, design mount boards, such as: plywood, gypsum fibre boards, OSB.

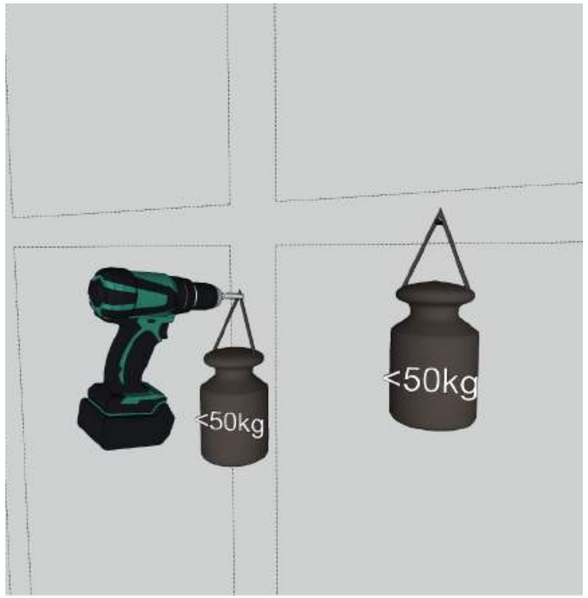
Loads up to 5 kg

For loads up to 5 kg, a 4.5 x 40 mm full-thread screw can be secured directly into the clay or gypsum plaster.



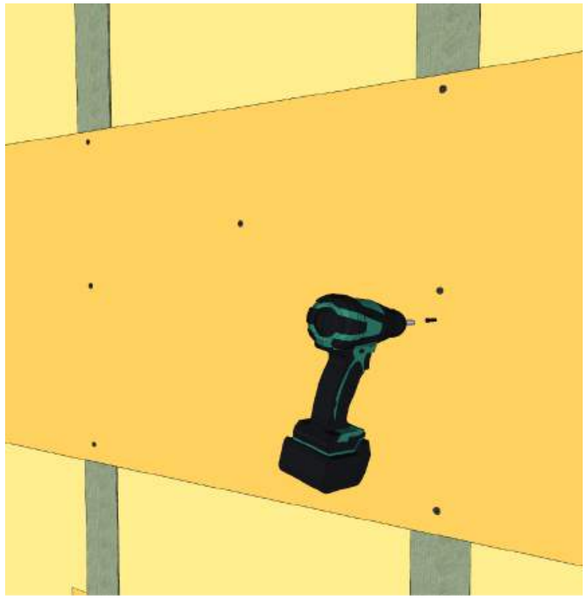
Loads exceeding 5 kg

For loads exceeding 5 kg, a 6 mm diameter screw can be used directly in the panel construction, supporting up to 50 kg when fixed into studs or horizontal elements.



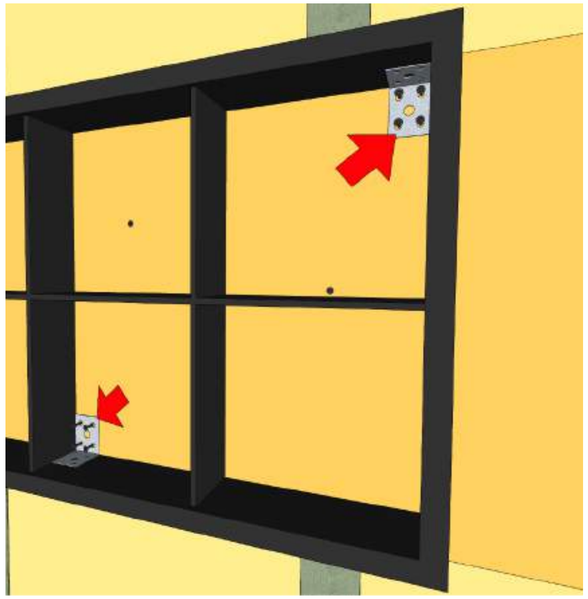
Mounting board

For more mounting options, it is possible to fix a board/timber to the studs using at least two 6 mm diameter screws per stud.



Shelves or cupboards

Shelves or cupboards should be securely fixed to the board.



07 Details

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Wall to Roof Detail	83
Wall to Floor Detail	85
Wall to Window/Door Detail	87

Introduction to Architectural Details

A collection of **DWG** details is shown as PDF in Annex 2 of the Designer Guide and is also available as DWG for download on the EcoCocon website.

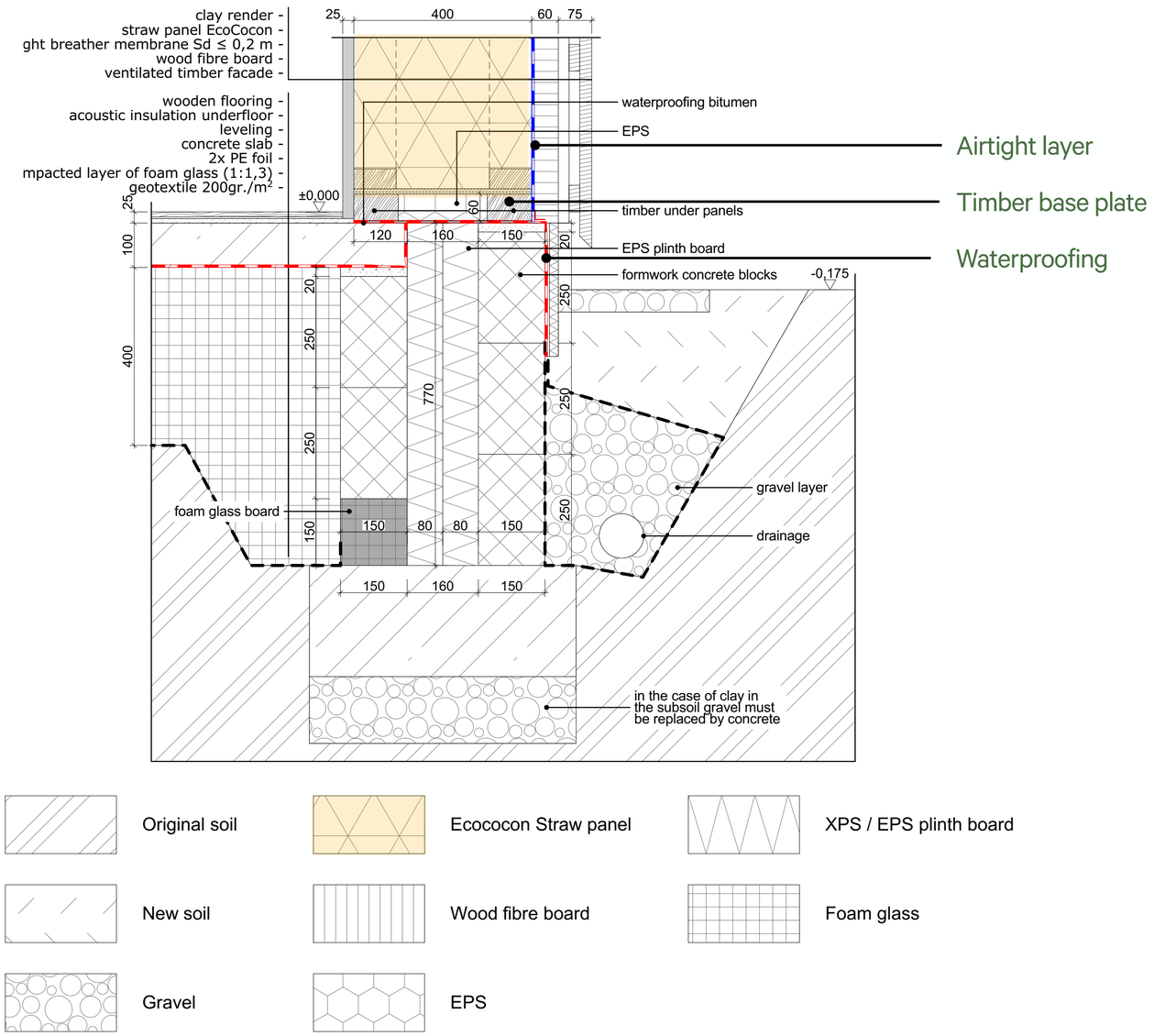
Refer to DWG details for download on website

Passivhaus Certified Details (certified in 2016)

Several details of the EcoCocon straw wall system were developed to meet the Passive House (PH) standards.
PH Certified details include **Psi-values** (thermal bridge calculations) and confirm the validity of the **airtight layer concept**.

! Using Passive House certified details does not automatically make a building a Passive House. The entire design must be verified through a PHPP calculation.

Example of Wall-to-Foundation Detail



Details Reference

Typical details provided by EcoCocon may need to be modified in some countries to comply with national regulations. The final judgment and responsibility lie with the Client's project engineer.

Detail Type & Principles

The Details overview page in this chapter features simplified sketches illustrating many possible detail types, accompanied by explanations of key principles.

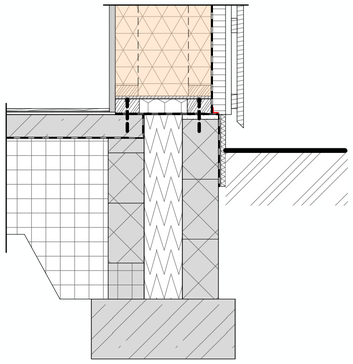
Structural Connections Reference

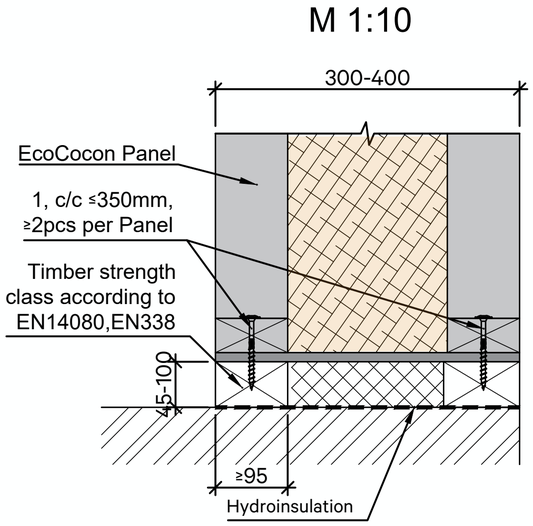
The Structural connections page presents EcoCocon structural connections. When developing your own details, it is recommended to refer to these connections.

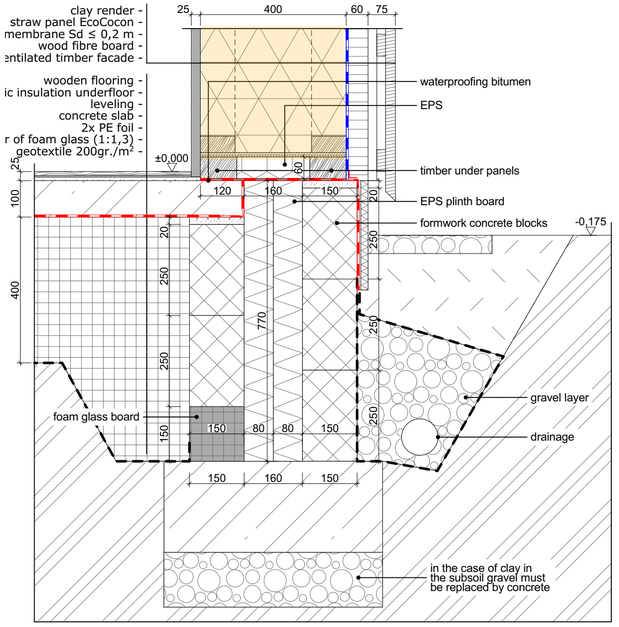
Complete Details Available

The Complete details in PDF format are available in Annex 2 and **in DWG (CAD format)** for download on the website.

Sandwich Strip Foundation Type







Wall to Foundation

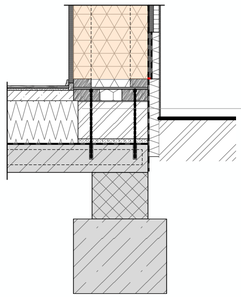
Architects can find ready-made architectural details in Annex 2, or download DWG files from ecococon.eu.

Refer to DWG details for download on website

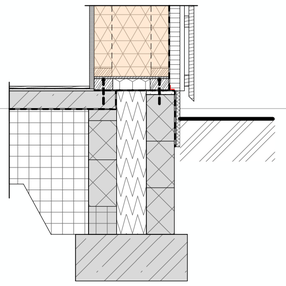
Foundation Detail Principle:

- Foundation & base plate: must support twin-stud timber frame panels; use an anchored wooden base plate.
- Connections: follow the EcoCocon Structural Connections (Annex 1); stronger anchoring if needed.
- Thermal & Vapour: ensure thermal bridge-free, vapour-permeable details.
- Airtightness: design all connections to be airtight.
- Waterproofing: use a membrane under the base plate; start straw above floor level and ground level to prevent water ingress.
- Compliance: adapt details to local regulations; the engineer retains final responsibility.

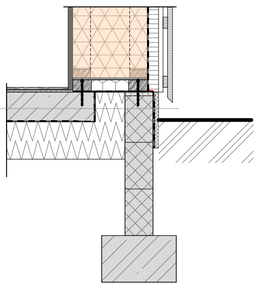
Strip foundation



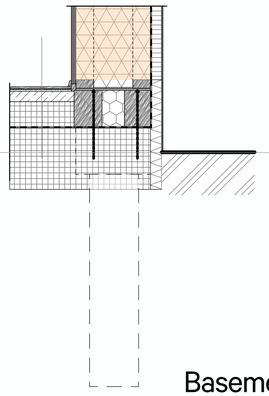
Sandwich strip foundation



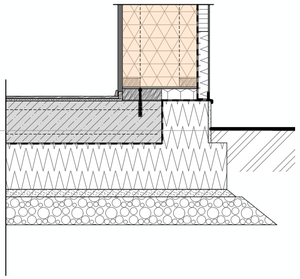
Strip and slab foundation



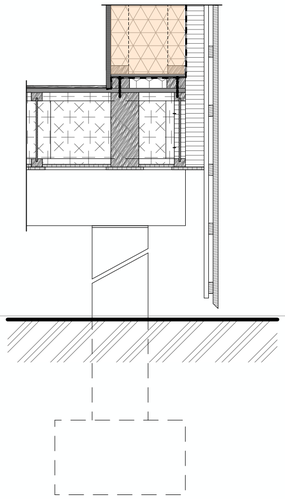
Pier and beam foundation



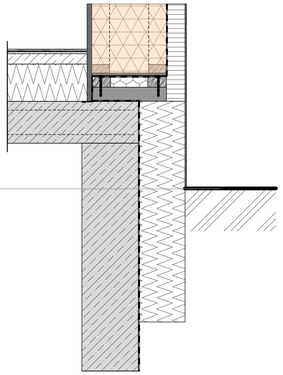
Slab-on-grade foundation



Crawl space foundation

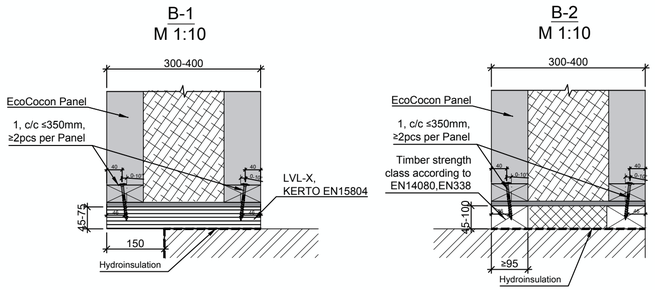


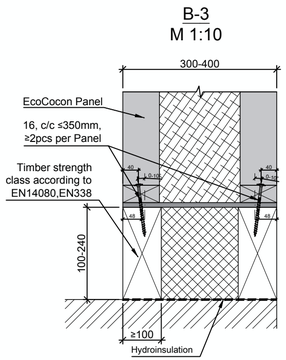
Basement foundation

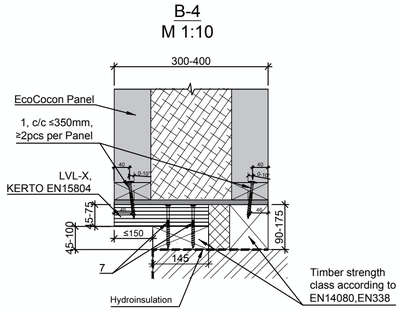


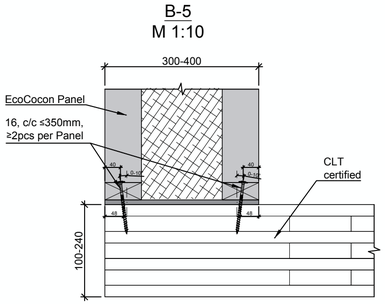
STRUCTURAL CONNECTIONS - BASE PLATE

You can find these and more in the Annex 1 - Structural Connections.









Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
7 - Countersunk head 90 8,0 x 120mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

NOTES:
1. Characteristic withdrawal strength for the timber to the foundation connection should be ≥8kN/m;

EcoCocon Principal Details	Ref. no. RD-CO-P/BP-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

© EcoCocon

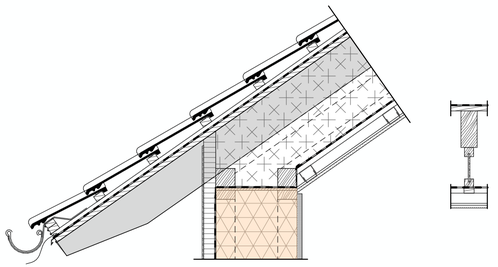
Base Plate Connection

Wall to Roof

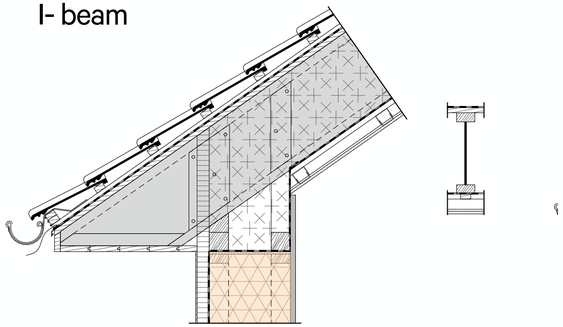
Architects can find ready-made architectural details in Annex 2, or download DWG files from ecococon.eu.

Refer to DWG details for download on website

Rafters



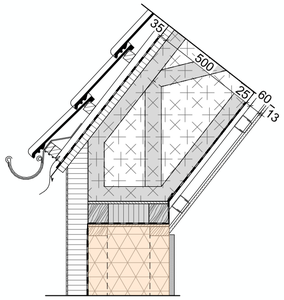
I- beam



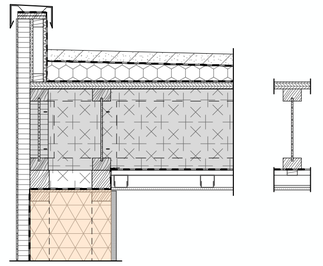
The principle applied:

- Top connection: roof load is transferred via a wall plate—single or split—onto the studs.
- Airtightness: the membrane on top of the panels overlaps 50 mm inward to ensure an airtight roof connection.
- Wall plate: wooden plate or ring beam over membrane, fixed with screws (see Annex 1); angle-cut for gable roofs if needed.
- Thermal bridge: detail must prevent thermal bridging.
- Vapour: keep connection vapour-permeable for moisture control.

Roof trusses

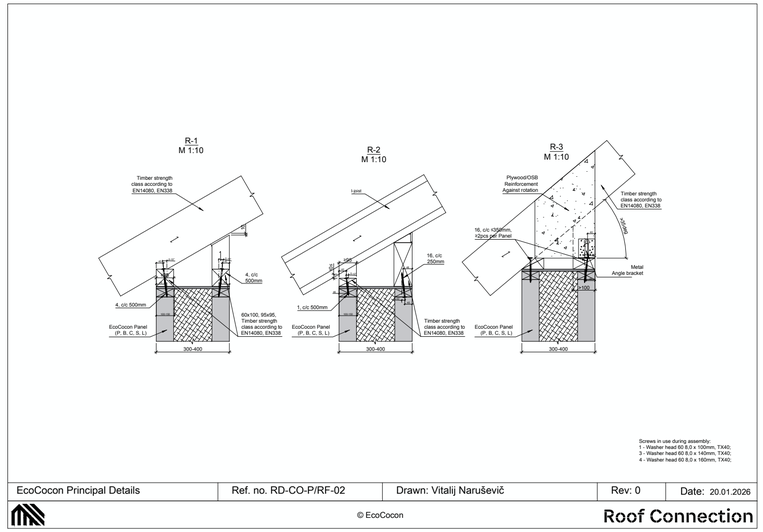


Flat roof with I-beams



STRUCTURAL CONNECTIONS - ROOF CONNECTIONS AND WALL PLATE

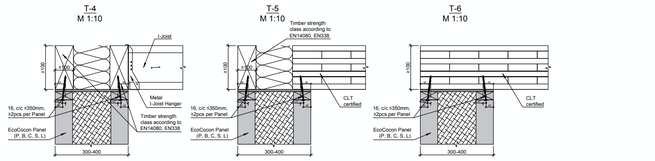
You can find these and more in the Annex 1 - Structural Connections.



EcoCocon Principal Details	Ref. no. RD-CO-P/RF-02	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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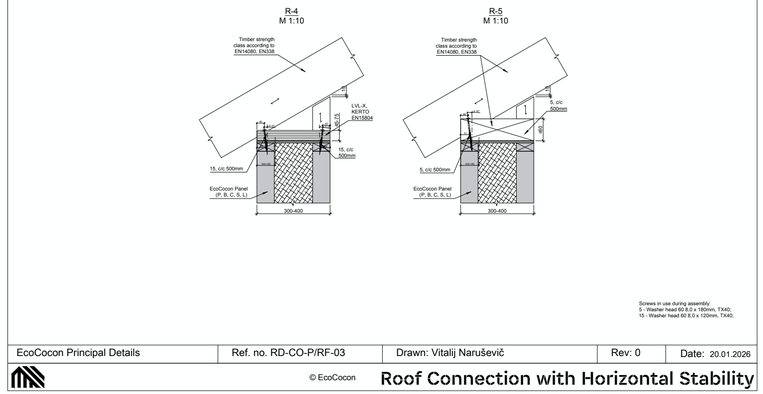
Roof Connection



EcoCocon Principal Details	Ref. no. RD-CO-P/RF/FL-02	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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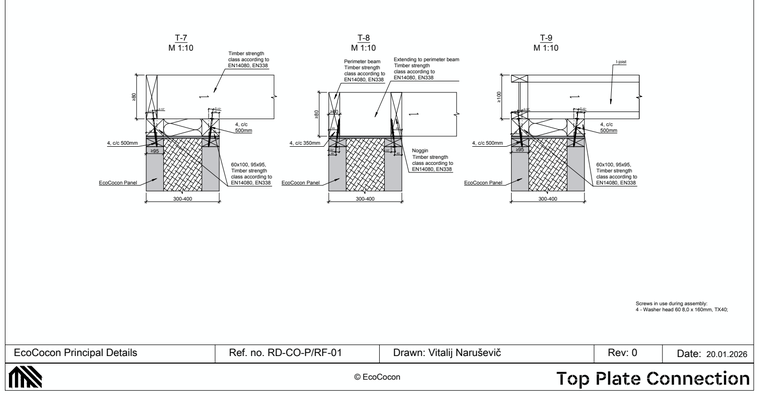
Top Plate Connection



EcoCocon Principal Details	Ref. no. RD-CO-P/RF-03	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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Roof Connection with Horizontal Stability



EcoCocon Principal Details	Ref. no. RD-CO-P/RF-01	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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Top Plate Connection

Wall to Floor

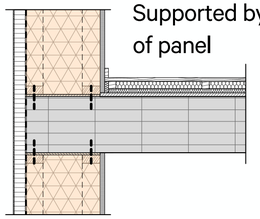
Architects can find ready-made architectural details in Annex 2, or download DWG files from ecococon.eu.

Refer to DWG details for download on website

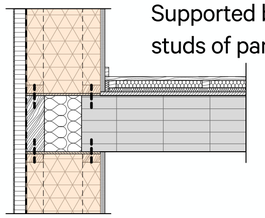
The principle applied:

- Ceiling support: use a wall plate or ring beam to transfer loads to studs.
- Load options: load can span full panel width or rest on inner studs.
- Ceiling fixing: place ceiling on beam or suspend with joist hangers (see Annex 1 - Structural Connections).
- Airtightness: maintain membrane integrity; define airtight details in design.
- Thermal bridge: prevent thermal bridging at wall-ceiling junction.
- Vapour: ensure vapour diffusion, especially outward, to protect against moisture.

CLT

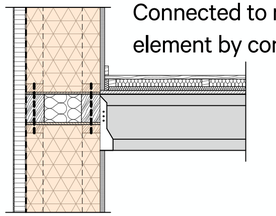


Supported by both studs of panel



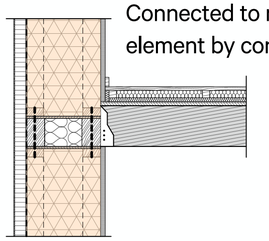
Supported by interior studs of panel

I beam

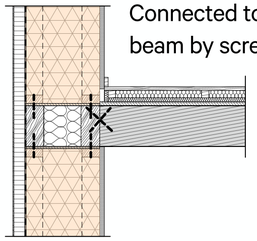


Connected to ring beam or box element by connector

Timber

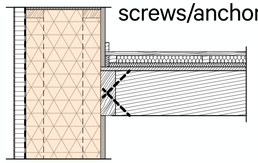


Connected to ring beam or box element by connector

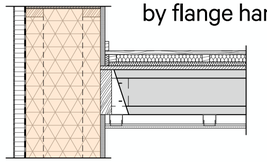


Connected to ring beam by screws

Using ceiling support ledger



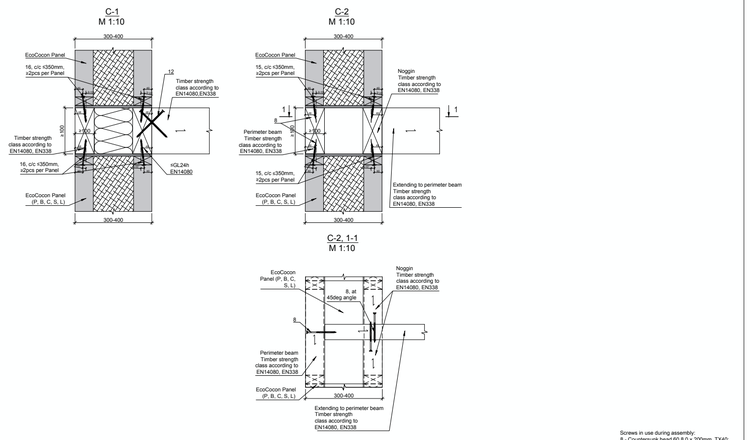
Connected to ledger by screws/anchors



Connected to ledger by flange hanger

STRUCTURAL CONNECTIONS - FLOOR CONNECTION

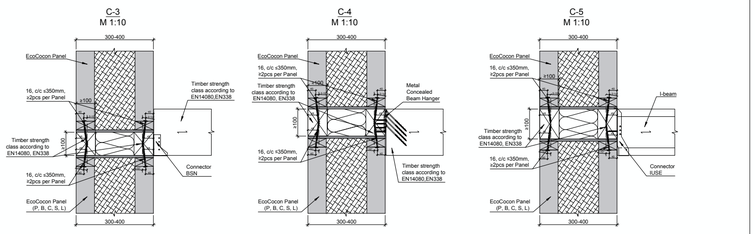
You can find these and more in the Annex 1 - Structural Connections.



EcoCocon Principal Details	Ref. no. RD-CO-P/FL-05 (T)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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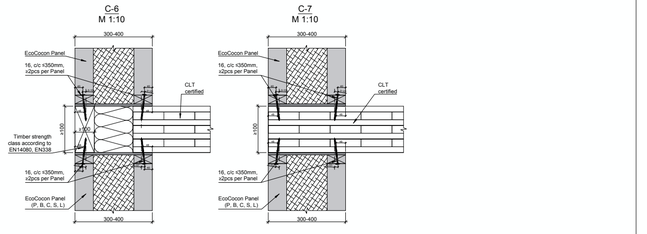
Floor Connection



EcoCocon Principal Details	Ref. no. RD-CO-P/FL-06 (T)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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Floor Connection



EcoCocon Principal Details	Ref. no. RD-CO-P/FL-07 (CLT)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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Floor Connection 3

Wall to Window/Door

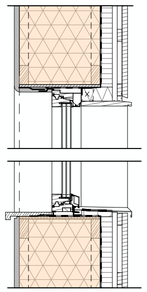
Architects can find ready-made architectural details in Annex 2, or download DWG files from ecococon.eu.

Refer to DWG details for download on website

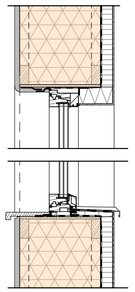
The principle applied:

- Position: at any position between panels, based on design and shading needs. Thermally, it's not an issue, as the wall itself is insulating.
- Fixing: anchor windows securely to plywood of window reveals.
- Airtightness: seal openings with tapes/membranes for continuity.
- Vapour: ensure vapour diffusion, avoid moisture traps.

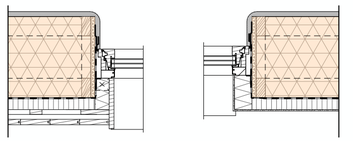
Wall with cladding



Wall with render



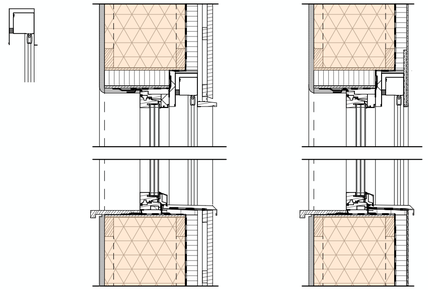
Plan view



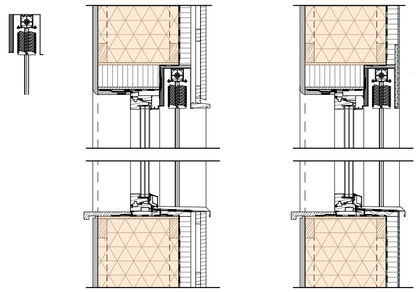
Cladding

Render

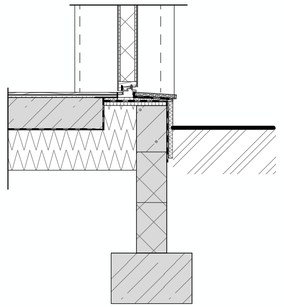
External screen



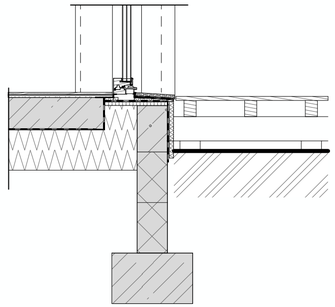
External blind



Entrance door

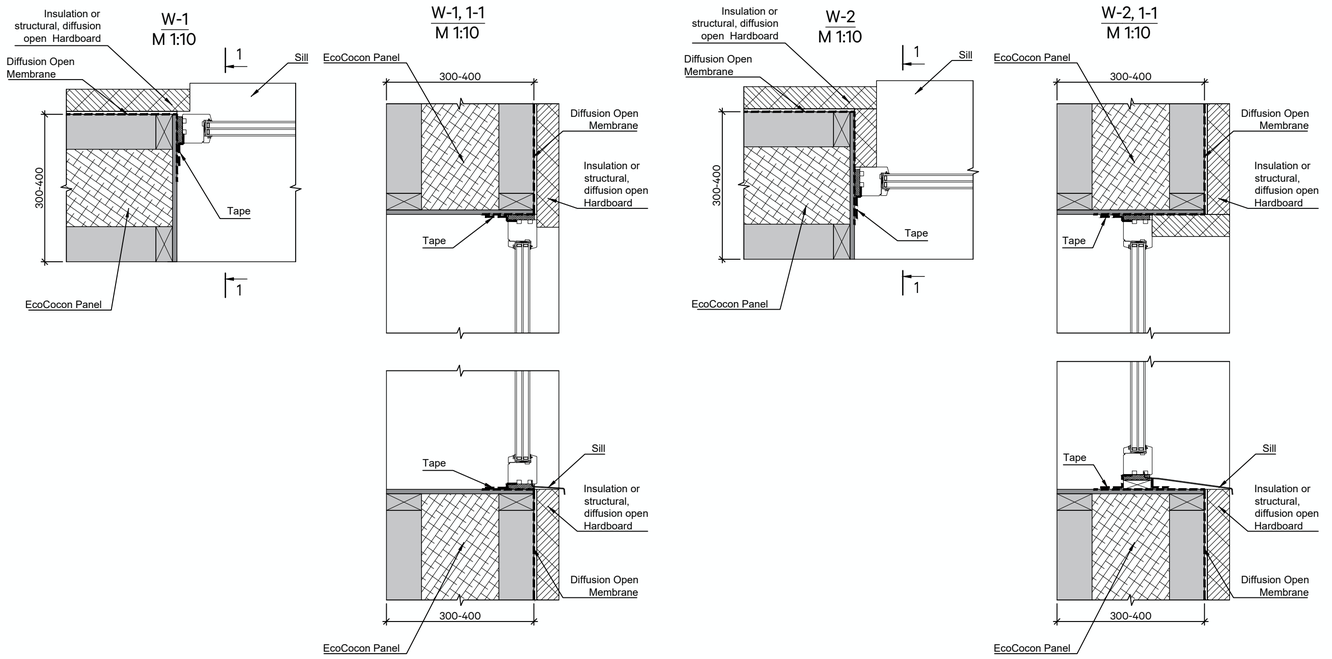


Terrace door



STRUCTURAL CONNECTIONS - WINDOW INSTALLATION

You can find these and more in the Annex 1 - Structural Connections.



NOTES:
1. Window after fixing it into opening should be fully taped to the membrane;

17.01.2025

© EcoCocon

Window Installation

08 Combining with Other Constructions

Combining with CLT	90
Combining with Timber/Glulam	95
Combining with Concrete	98
Combining with Steel	101
Combining with Existing Structures	102

Photo credits: EcoCocon



Combining with CLT

CROSS-LAMINATED TIMBER (CLT) CONSTRUCTION

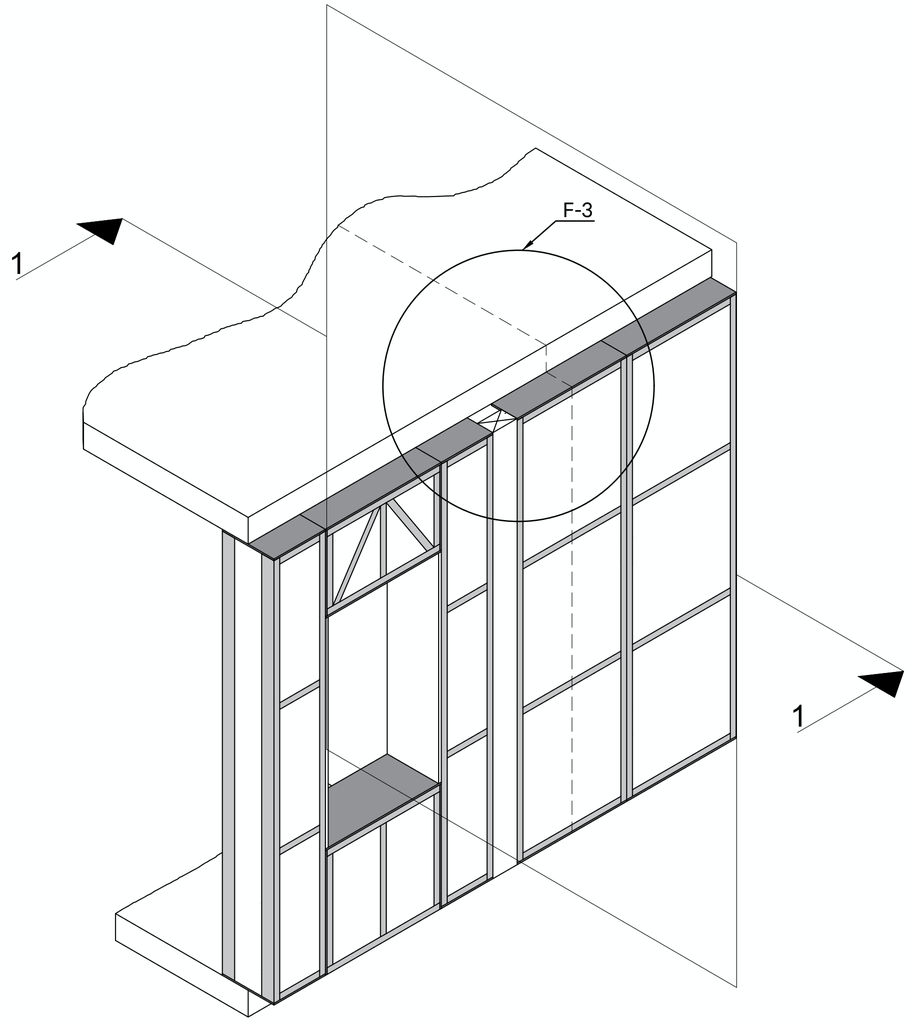
EcoCocon panels match the accuracy and outlines of CLT panels, allowing easy substitution with minimal or no changes—even late in the project.

Advantages

- **Complementary Systems, Flexible Application:** EcoCocon straw walls serve as load-bearing, insulating external walls with fast installation and airtightness, while CLT is used for interior partition walls, floors, and roofs. Panels can be standalone or infill within the CLT frame.
- **Environmental Benefits:** This combination reduces wood use and lowers CO_2 impact through natural insulation.
- **Enhanced Performance:** Integrating EcoCocon with CLT improves load capacity, stiffness, thermal efficiency, and design flexibility.

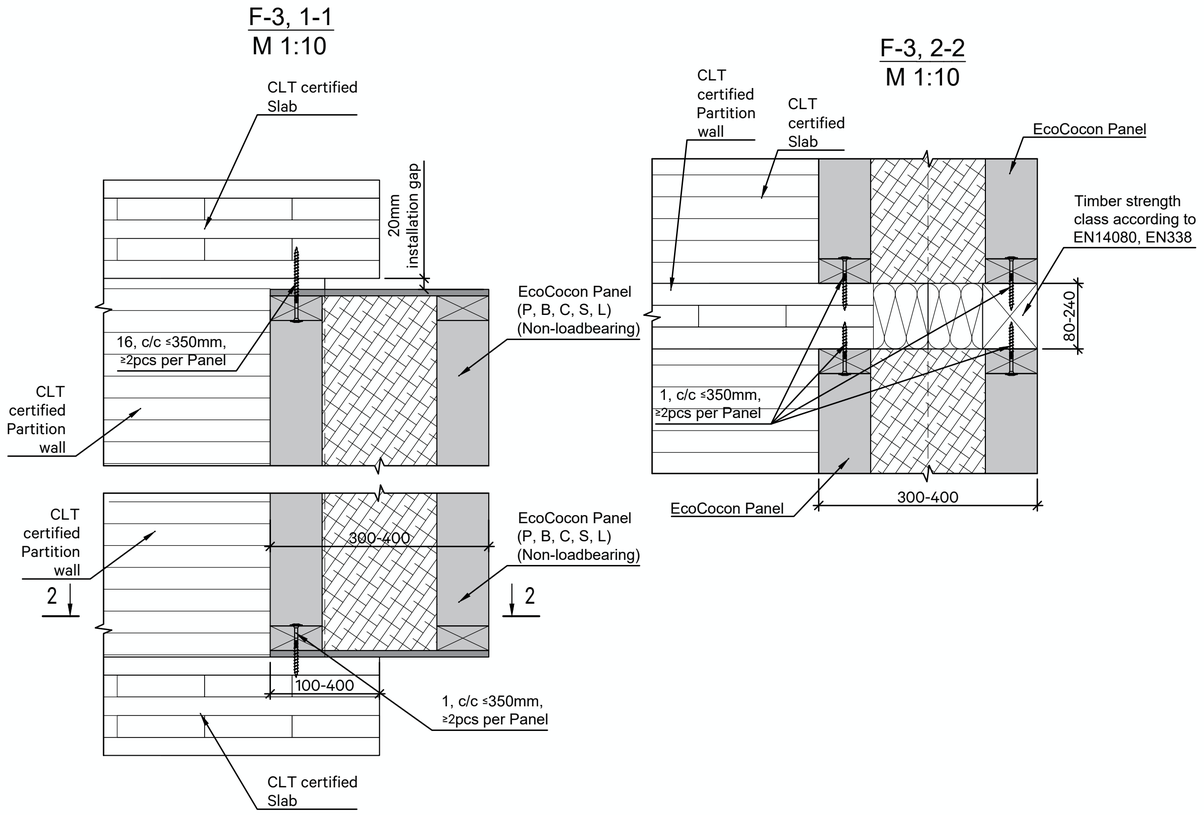
See also CLT Structure with EcoCocon on website

EcoCocon Infill Wall in CLT Structure



Connection to CLT Details

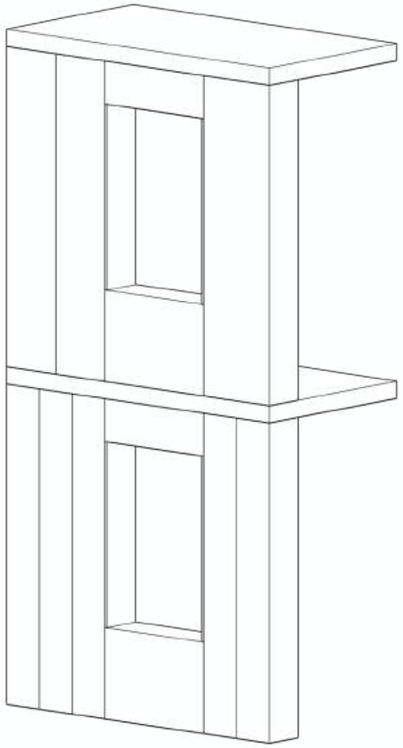
(Also available in Annex 1: Structural Connections)



Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

CLT Slab on Loadbearing EcoCocon Wall

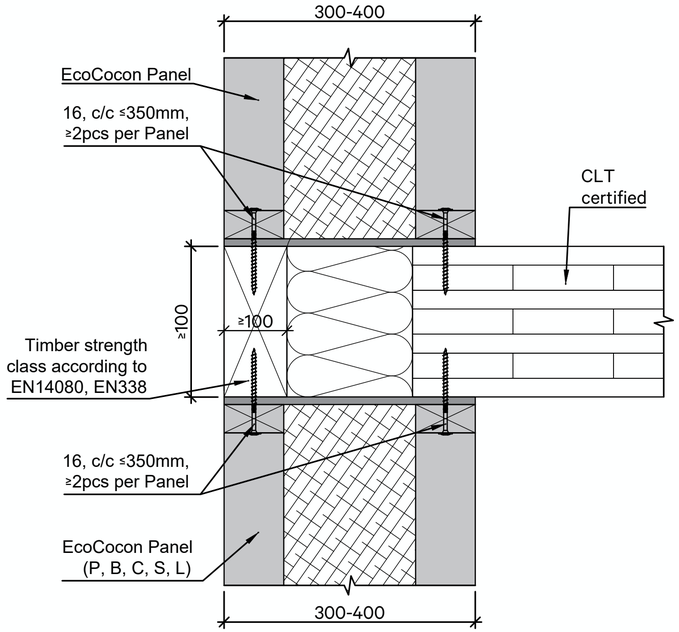
CLT slabs can be placed directly onto EcoCocon panels, supported by the panels' external and internal studs. This design creates a robust and cohesive structure, eliminating the need for additional base or top timber plates.



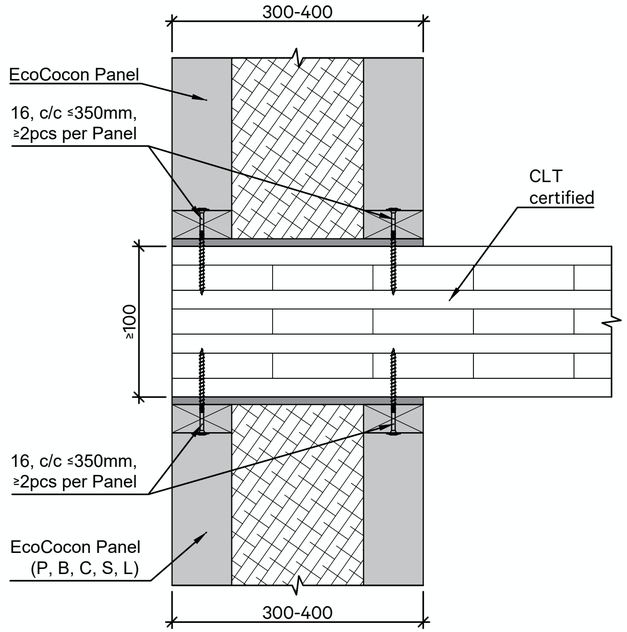
Wall-to-Floor Detail

(Also available in Annex 1: Structural Connections)

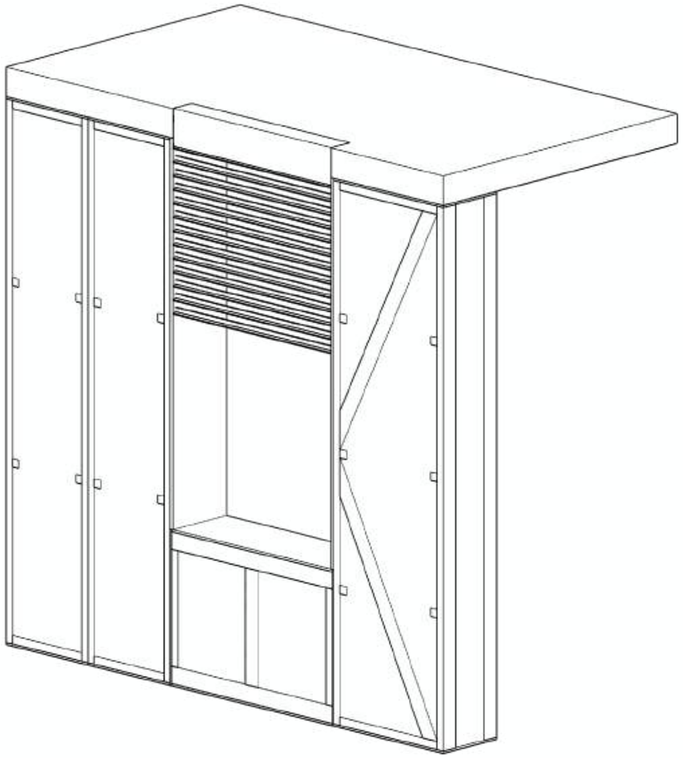
Option 1



Option 2

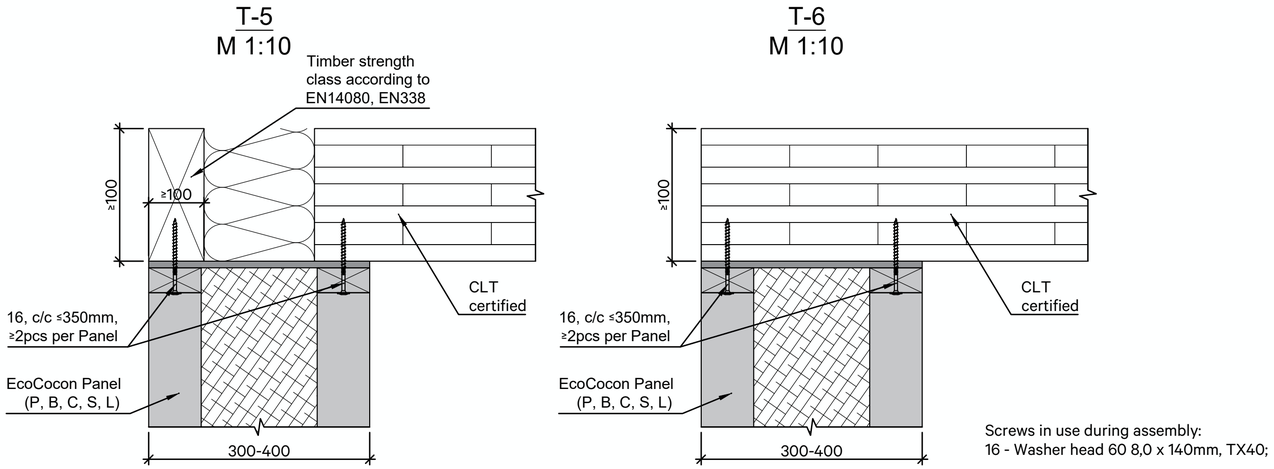


Top & Bottom Plate Connection



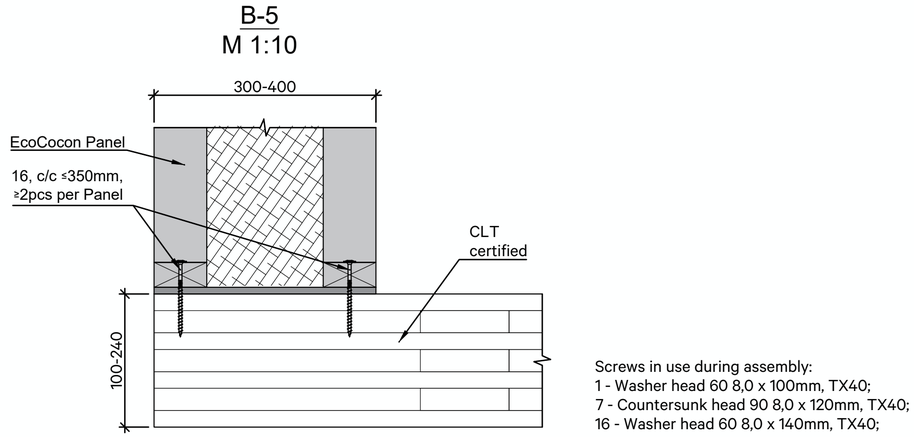
Wall-to-Roof Detail

(Also available in Annex 1: Structural Connections)



Wall-to-Foundation Base Plate Detail

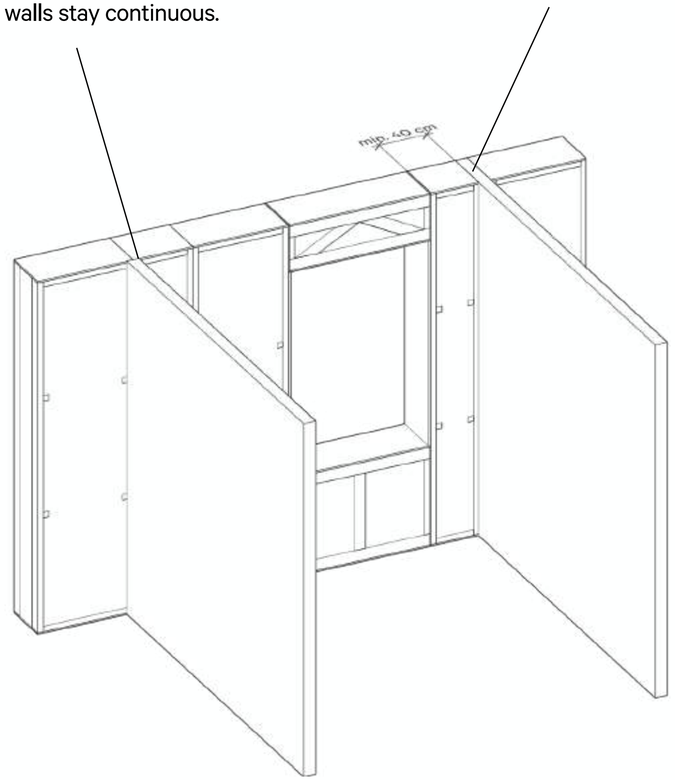
(Also available in Annex 1: Structural Connections)



EcoCocon Walls-to-CLT Partition Walls

Partition walls can attach anywhere on the interior side of EcoCocon panels, while external walls stay continuous.

For dividing walls, partitions may span the full wall. Note 40cm distance to window.

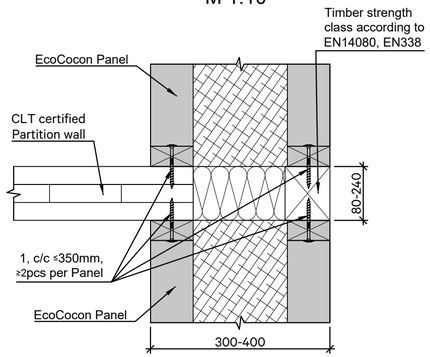


Wall-to-Partition Wall Detail

(Also available in Annex 1: Structural Connections)

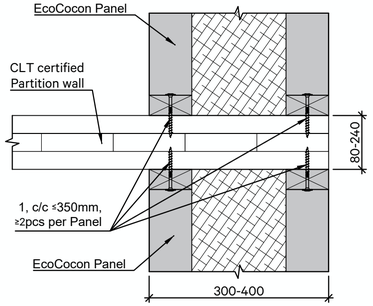
Option 1

P-4
M 1:10



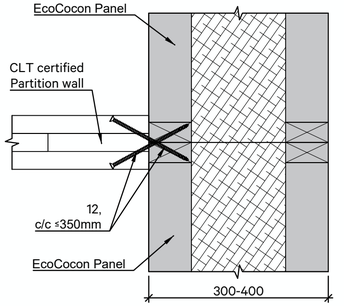
Option 2

P-5
M 1:10



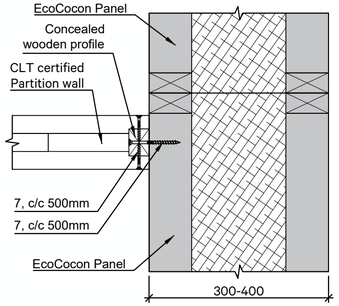
Option 3

P-6
M 1:10



Option 4

P-7
M 1:10



Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
7 - Countersunk head 60 8,0 x 120mm, TX40;
12 - KonstruX head 60 8,0 x 200mm, TX40;

Combining with Timber/Glulam

GLUED LAMINATED TIMBER

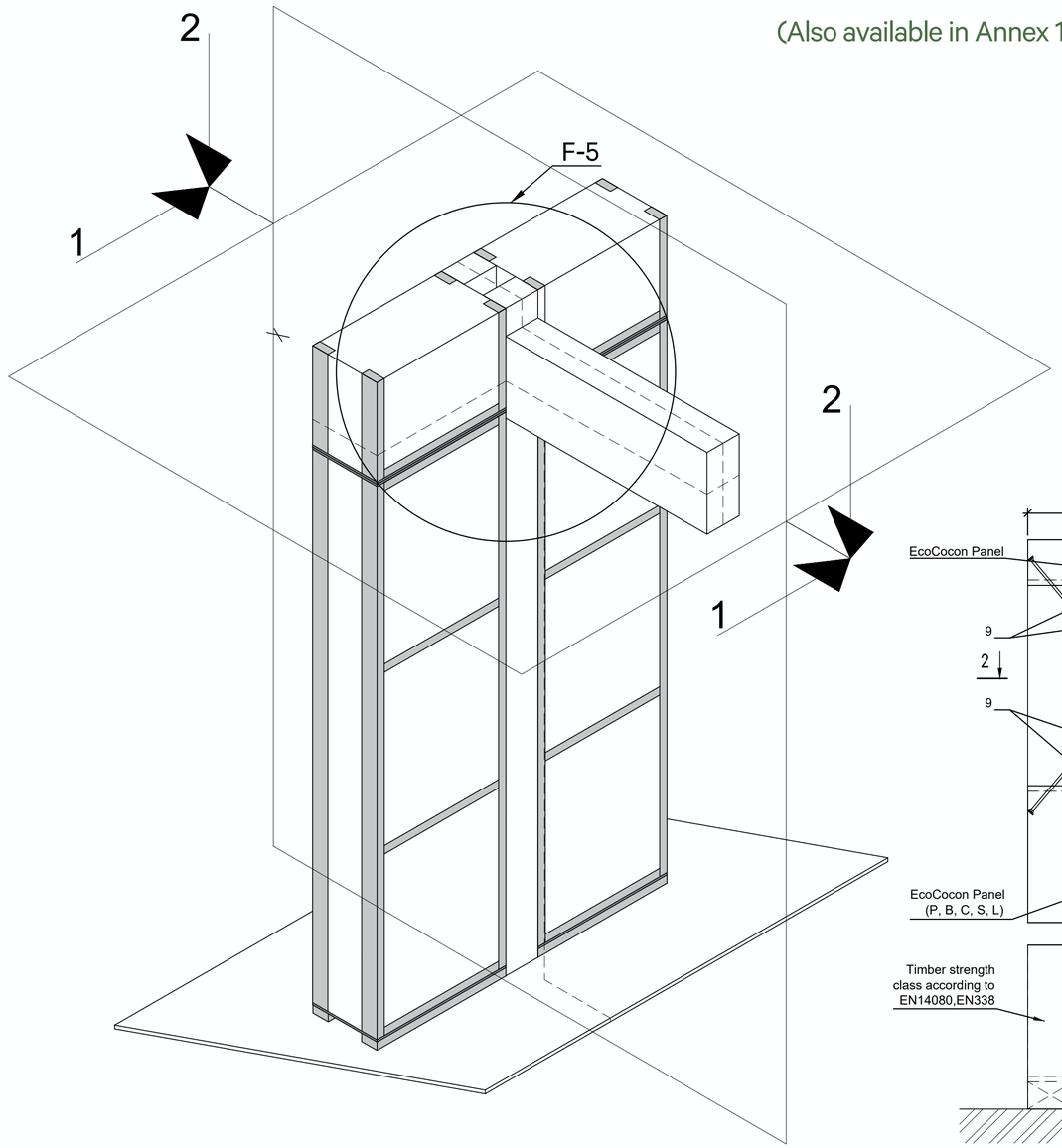
Combining EcoCocon panels as infill with timber or glued laminated timber creates a sustainable, easy-to-install system that enables larger spans and generous glazed openings.

Advantages

- **Design flexibility**: enables long spans, large openings, and diverse forms. EcoCocon adapts easily as infill or panel walls in creative, high-performance timber design.
- **Efficient installation**: prefabricated EcoCocon panels integrate smoothly with glulam frames, ensuring quick on-site assembly and airtightness with minimal waste.

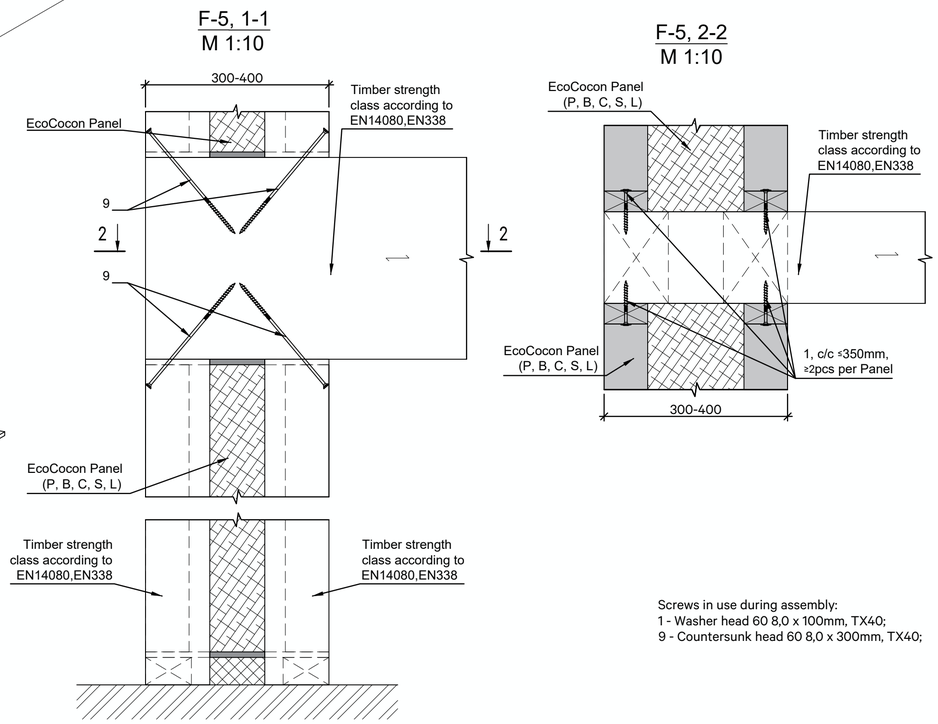


Connection of EcoCocon to Timber/Glulam Structure



Detail: Column with Beam Between the Wall

(Also available in Annex 1: Structural Connections)

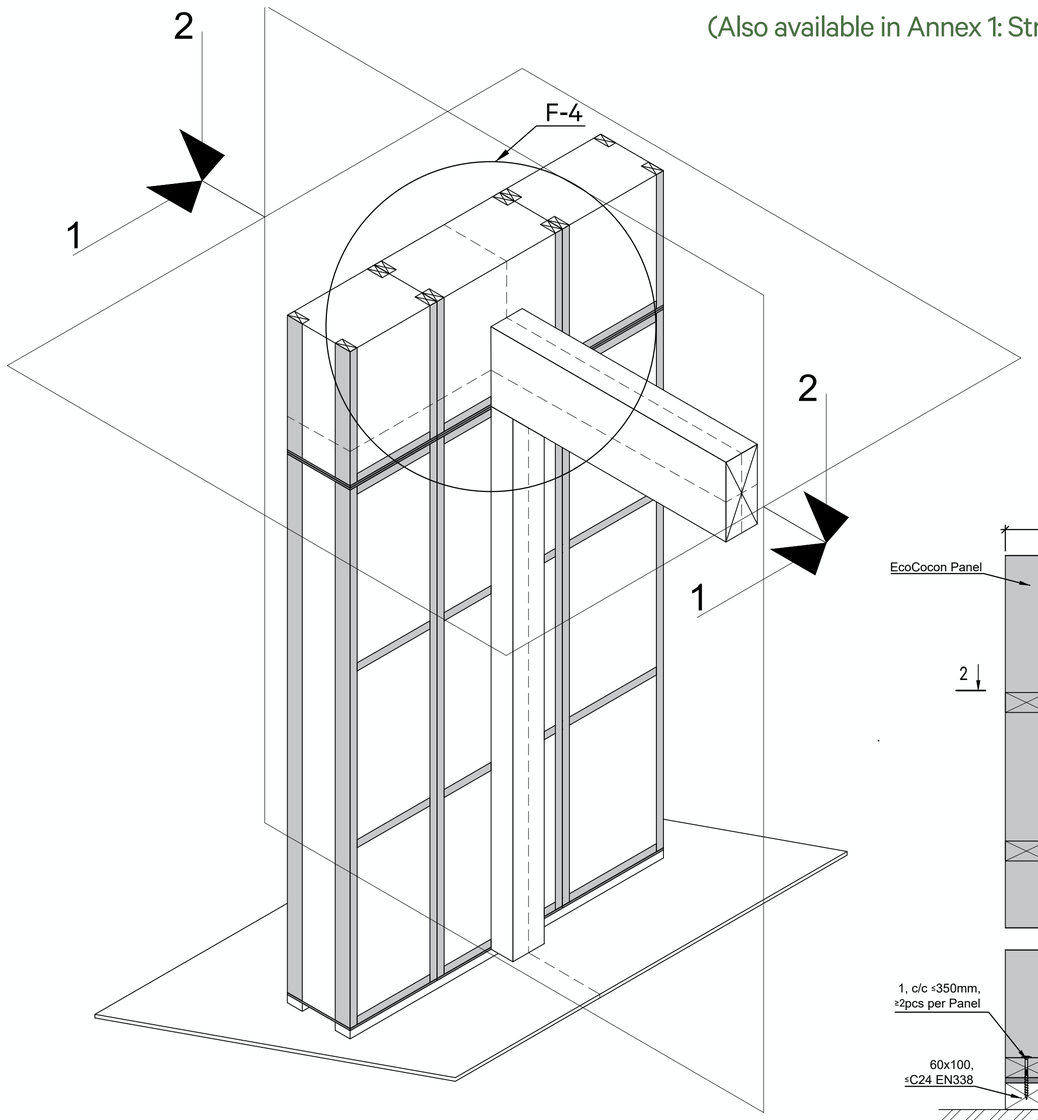


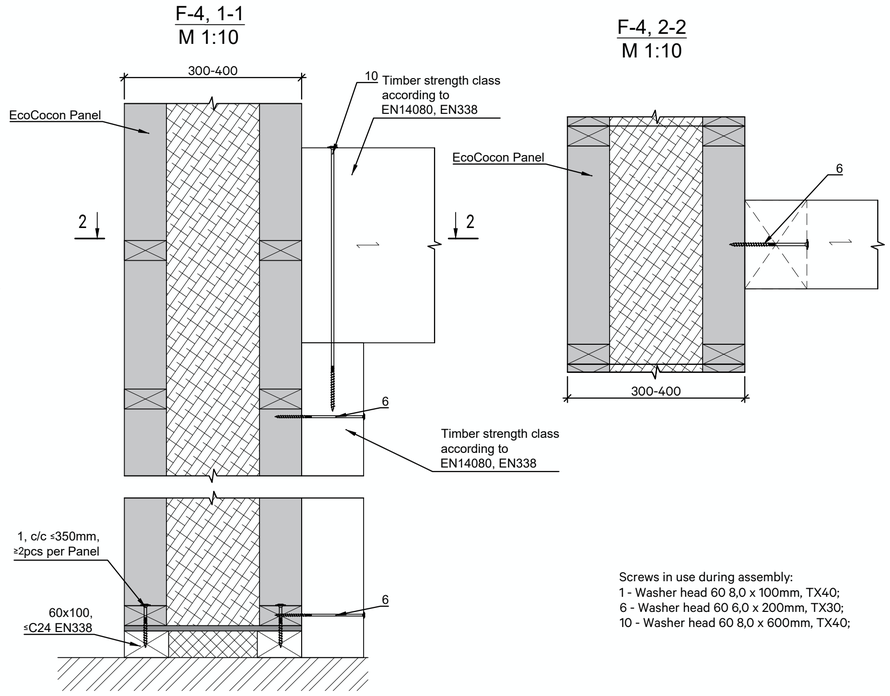
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
9 - Countersunk head 60 8,0 x 300mm, TX40;

Connection of EcoCocon to Timber/Glulam Structure

Detail: Column and Beam Positioned in Front of Wall

(Also available in Annex 1: Structural Connections)





Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
6 - Washer head 60 6,0 x 200mm, TX30;
10 - Washer head 60 8,0 x 600mm, TX40;

Combining with Concrete

CONCRETE FRAME SYSTEM (POSTS & SLABS)

Ecococon panels are fitted within a concrete frame. Combining EcoCocon panels with concrete creates a strong, sustainable envelope that improves thermal performance, airtightness, and reduces environmental impact.

Advantages

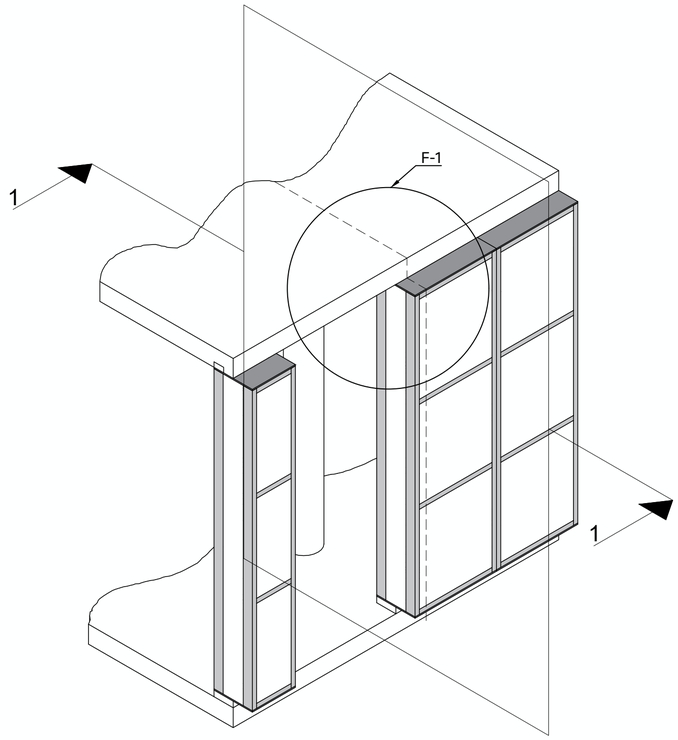
- **Improved building physics**: EcoCocon panels boost insulation and airtightness, cutting energy use and enhancing comfort, ideal for low-energy buildings.
- **Lower environmental impact**: using bio-based EcoCocon panels reduces embodied carbon compared to conventional insulation, even in concrete structures.
- **Robust hybrid performance:** combines concrete's strength with EcoCocon's insulation for durable, high-performance envelopes.

See also Reviving Concrete Buildings on website



Connecting to Concrete Construction

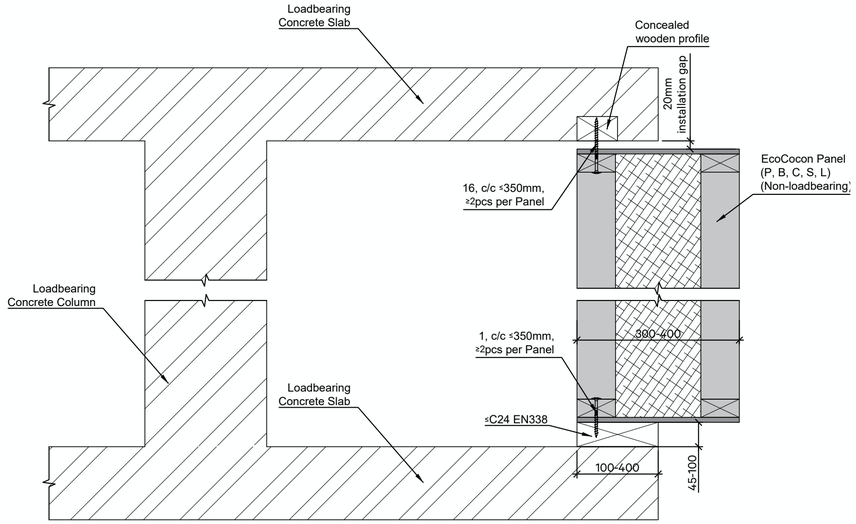
When connecting EcoCocon panels to concrete floor and ceiling slabs, the panels can be fixed by their interior timber construction. This method allows the panels to extend slightly beyond the slab edge, creating an offset. The offset provides space for uninterrupted insulation around the concrete structure and ensures a flush finish across the entire façade.



Connection to Concrete Structure

(Also available in the Annex 1: Structural Connections)

F-1
M 1:10



Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;



Wrapping Construction with Panels

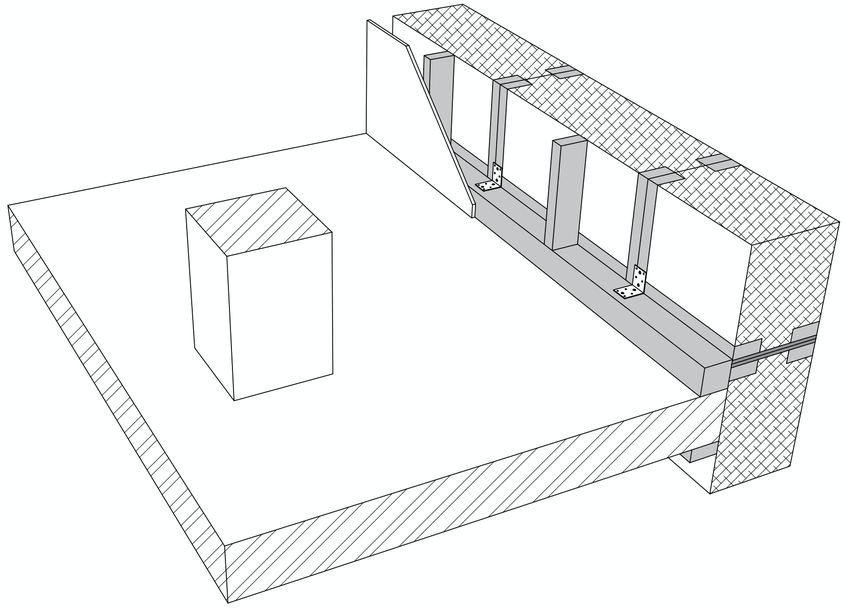
The self-bearing facade from EcoCocon panels is offset to form a continuous insulating envelope, anchored to the concrete structure with timber elements and metal connectors.

Advantages

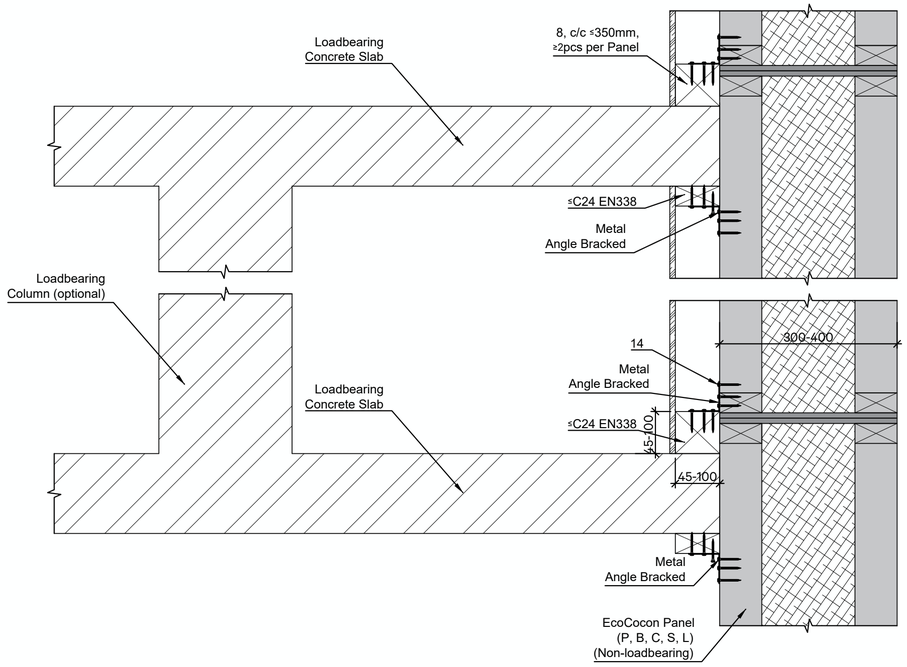
- **Continuous thermal envelope:** uninterrupted insulation with minimal thermal bridges.
- **Design flexibility:** facade independent from structure (setbacks, finishes, depth variation).
- **Fast installation:** metal brackets, timber elements, and preassembled segments.
- **Adaptability:** suitable for new builds, retrofits, or adding an external envelope.

Wall-to-Concrete Structure Detail

(Also available in Annex 1: Structural Connections)



F-2, 1-1
M 1:10



Screws in use during assembly:
8 - Countersunk head 60 8,0 x 200mm, TX40;
14 - CSA to connector 5,0 x 50mm, TX20;

Combining with Steel

EcoCocon panels can be combined with steel frame construction in two ways: either as infill within the frame or as wrapping around it, following a similar approach as with concrete structures.

Advantages

» **Enhances the building's environmental performance** while retaining the structural versatility of a steel frame.



Partner: Strotec - Eric Verheijen

Combining with Existing Structures

EcoCocon can be combined to wrap existing structures and/or create extensions.

To connect to an existing structure, waterproofing and airtightness are achieved in the same way as for foundations, by anchoring the base plate vertically to the wall.

Advantages

- **Complementary material:** harmonises with the natural character of historical buildings.
- **Enhanced performance:** improves energy efficiency, sustainability, and design flexibility.

See also Wrapping Solutions for Renovation on website

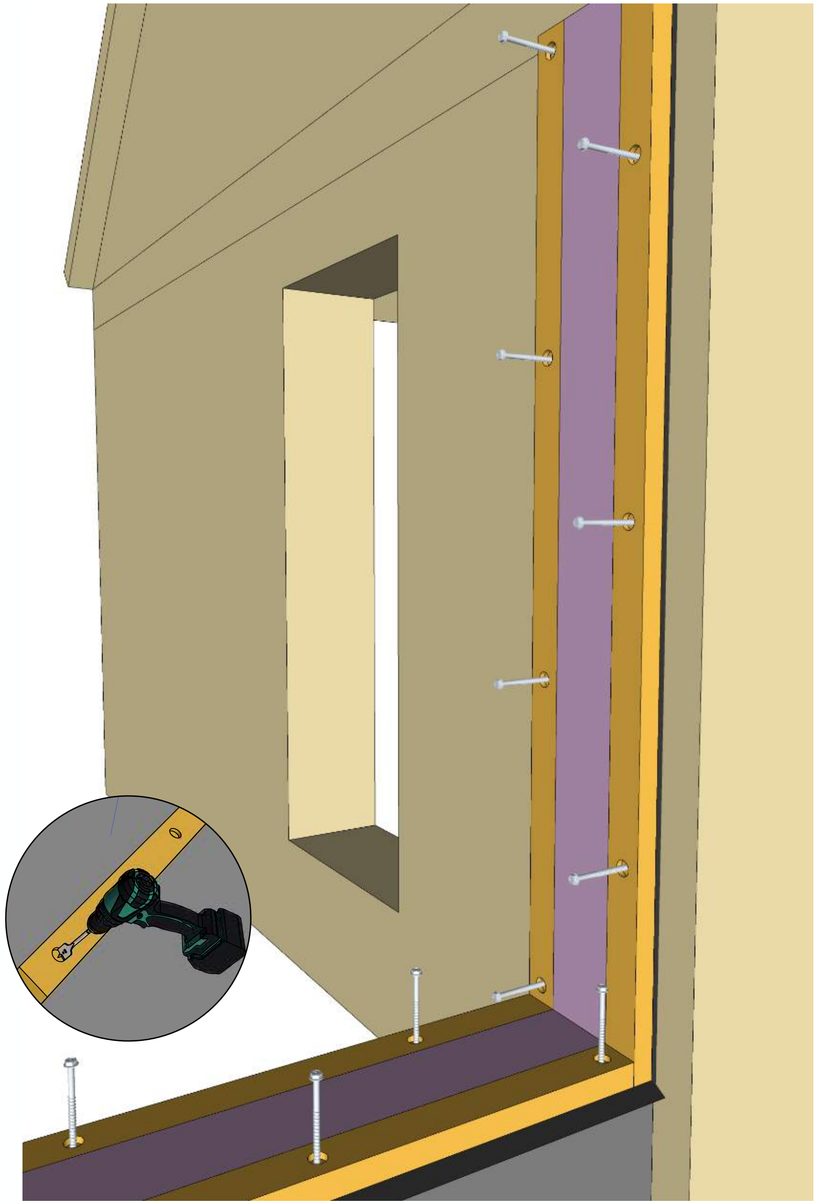


Illustration from Assembly Guide



Photo credits: EcoCocon

09

Procurement and Tendering

How EcoCocon Can Help 105

Drafting Tender Specifications 106

Tender in General

A public tender is a transparent, competitive process for procuring goods or services. Rules vary by country, so always follow local regulations. Under EU law, brands may be named only with “or equivalent” or with a justified exception.

Typical specification format for tender in general:

- General description: scope, intended performance, system name (e.g. prefabricated straw panel system).
- Technical requirements: U-values, airtightness, fire, moisture, acoustics.
- Execution requirements: installation method, compatibility with MEP (Mechanical, Electrical, and Plumbing), testing (e.g. blower door).
- Submittals/documentation: EPDs, certificates, installation manual, fire tests, warranties.
- Alternatives/substitutions: allowed or not? Define what qualifies as “equivalent”.

A good tender specification sets clear performance targets, defines key system components, and leaves room for the contractor to propose technical details, unless there’s a critical reason to fix specific products or methods (like airtightness or fire safety).

The level of detail in a tender specification draft depends on several factors, including:

- The project phase (early concept, detailed design, or execution).
- The procurement method (design-bid-build, design & build, etc.).
- Whether the tender is for materials only, construction works, or design + construction.
- Whether it’s an open tender or a pre-negotiated/targeted one.





How EcoCocon Can Help

Support for Tender Specifications

Purpose:
Help architects, engineers, and clients specify EcoCocon correctly, defining performance, sustainability, and technical criteria so the system “or equivalent” can be listed transparently in tender documents.

Support:

- Technical design support during tender preparation: guidance on integrating EcoCocon into the design, reviewing drawings, and ensuring feasibility.
- Preliminary documentation for design and cost estimation: layout drawings, sections, and visuals to illustrate system integration, plus basic cost estimates.
- Tender description preparation: assistance in writing tender texts that define performance and sustainability criteria for procurement documents.

Support for Tender Bids

Purpose:
Help contractors and studios prepare competitive submissions by supporting Panel Projects, cost estimates, and documentation for a strong, compliant offer.

Support:

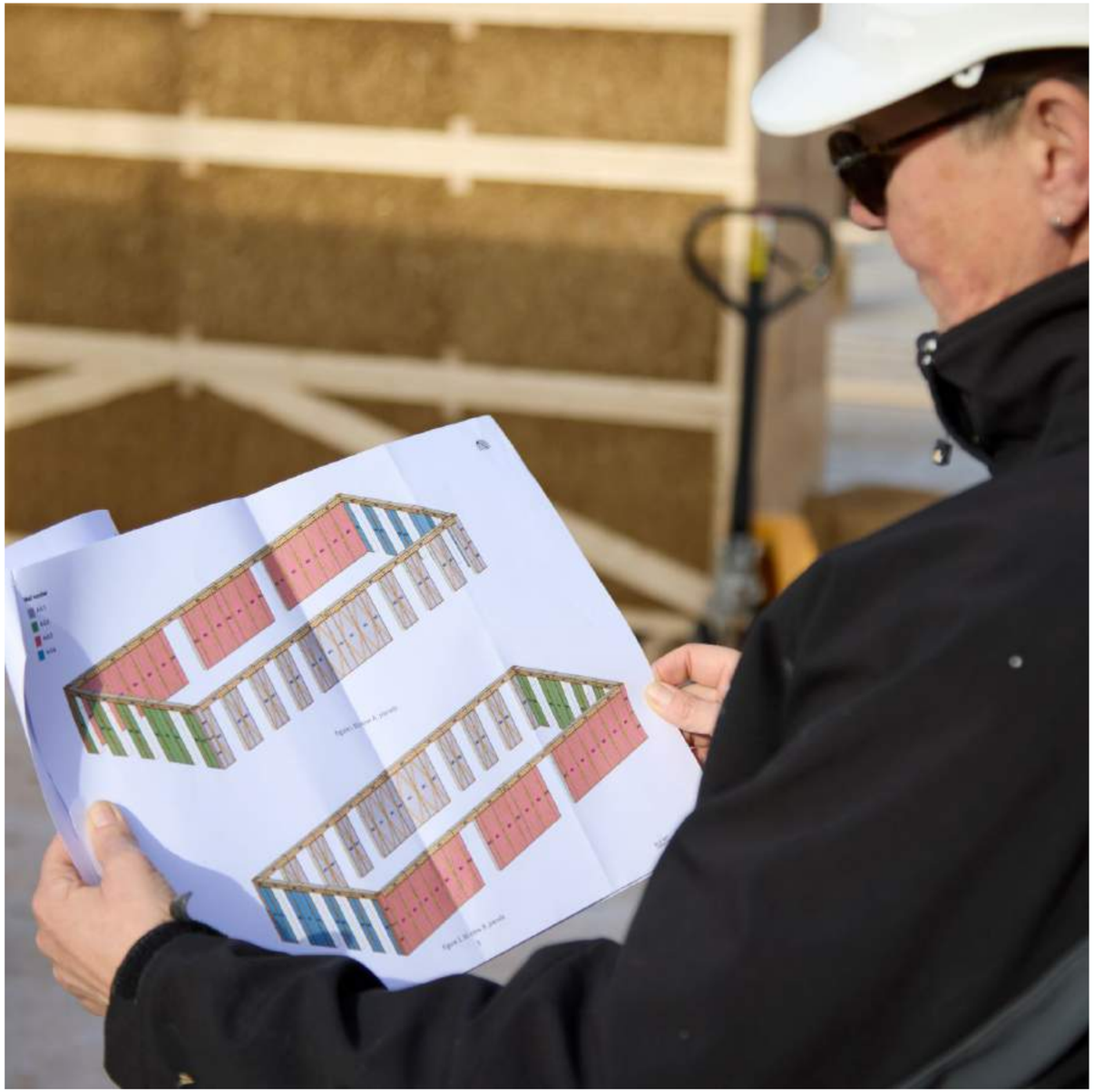
- Preliminary Panel Project for tender offers.
- Demonstrate how the EcoCocon system meets performance, sustainability, and certification requirements.
- Provide technical documents and certificates to support the submission.

Drafting tender specifications

This section explains how to specify EcoCocon's performance, sustainability, and technical criteria clearly, so it "or an equivalent" can be listed transparently, in line with EU rules allowing brand names only with "or equivalent" or a justified exception.

In a tender targeted for EcoCocon, specify:

- Performance (e.g. load-bearing, insulation, vapor permeability).
- Mention "prefabricated straw-based panel system (EcoCocon) or equivalent".
- Include relevant technical criteria that make EcoCocon the most likely candidate without naming it:
  - Valid EPD (Environmental Product Declaration)
  - Passive House Certified Component or equivalent
  - Cradle to Cradle certification or equivalent
  - VOC emission report (< EU limit levels)
  - Fire resistance classification fulfilling minimum REI 45 (or as required by local code)
- Ensure quality by these criteria:
  - Factory produced to +/-2mm precision
  - Airtightness design part of wall system
  - Blower Door test must achieve n_{50} < 0.6 air changes/hour.



Tendering rules differ by country and should always be followed.

Drafting tender specifications

Combine the following descriptions to ensure accurate
procurement and fair comparison of offers.

1. General description / system description

- Load-bearing, prefabricated wall panel system combining a timber frame with a compressed straw core.
- Panels are factory-made to exact dimensions (+/-2mm) from approved shop drawings.
- Enable panel modularity in 1mm increments

2. Scope of works

- Design coordination: review of architectural and structural drawings with EcoCocon engineer.
- Order: fabrication of panels according to the approved Panel Project.
- Delivery: transport to site, unloading and dry storage during construction.
- Assembly: on-site installation of panels and weather protection by trained installers.
- Handover: submission of as-built documentation, Blower Door test support, and quality sign-off.

3. Performance requirements

3.1 Thermal insulation

- U-value ≤ 0.15 W/m²K (or as required by local regulations).
- Continuity of insulation must be maintained with adjacent components (minimized thermal bridging).

3.2 Airtightness

- System to include continuous airtight layer with certified tapes and accessories.
- Airtightness to be verified by blower door test.
- Must achieve n_{50} ≤ 0.6 air changes/hour (Passive House level).

3.3 Fire resistance

- Minimum REI 45 (or as required by local code).
- Submit valid Fire Resistance Classification (EN 1365-1 or equivalent).

3.4 Moisture control

- Wall system must be vapour-permeable toward the exterior and prevent interstitial condensation.
- Use hygroscopic materials for moisture buffering; avoid plastic vapour barriers unless justified.

3.5 Acoustic performance (if applicable)

- Minimum Rw = 45 dB, or as required by project specification.

4. Materials

- Straw core: Partially dedusted agricultural by-product, moisture <15% at encapsulation, no additives.
- EcoCocon panels are typically supplied as PEFC Certified and are also available as FSC® Mix Credit upon request.
- Sheathing and finishes: Vapour-permeable, formaldehyde-free, and compatible with EcoCocon assembly system.

5. Environmental & circularity criteria

- Panels to contain ≥90% renewable biogenic content by weight.
- Submit valid Environmental Product Declaration (EPD) per EN 15804.
- Panels must allow disassembly and reuse through mechanical fixing and minimal chemical bonding.
- Provide VOC emission reports (< EU limit levels).

6. Installation requirements

- Installation by certified EcoCocon installer or approved equivalent.
- Protect panels from moisture during handling and installation.
- All penetrations must be sealed airtight using compatible materials.

7. Quality assurance

- Panels must be factory-produced under a certified quality management system.
- Dimensional tolerances: ±2 mm per panel edge, ±3 mm per 3 m in assembled wall plane.
- Moisture documentation to confirm straw content <15% at encapsulation.
- Provide factory QA certificate and moisture control protocol.

8. Mock-up & approval

- Contractor to build a full-size sample wall section including one junction and one opening.
- The sample wall section shall demonstrate: Panel fit and tolerances, Airtightness detailing, Window reveal integration, Finishing compatibility
- Written approval required before proceeding with main works.

9. Documentation & submittals

Prior to procurement approval, submit the following:

- Panel layout drawings and fixing scheme
- Technical data sheets and system description
- Fire resistance and structural test reports
- Airtightness detailing manual
- EPD and VOC emission reports
- Declaration of Performance (DoP)
- CE marking
- Factory Quality Assurance certificate (third-party production supervision)
- Installation manual and warranty
- Passive House and Cradle to Cradle certification

10. Warranties & service life

- The supplier shall provide 50-year warranty on the structural integrity and 25-year warranty on straw insulation

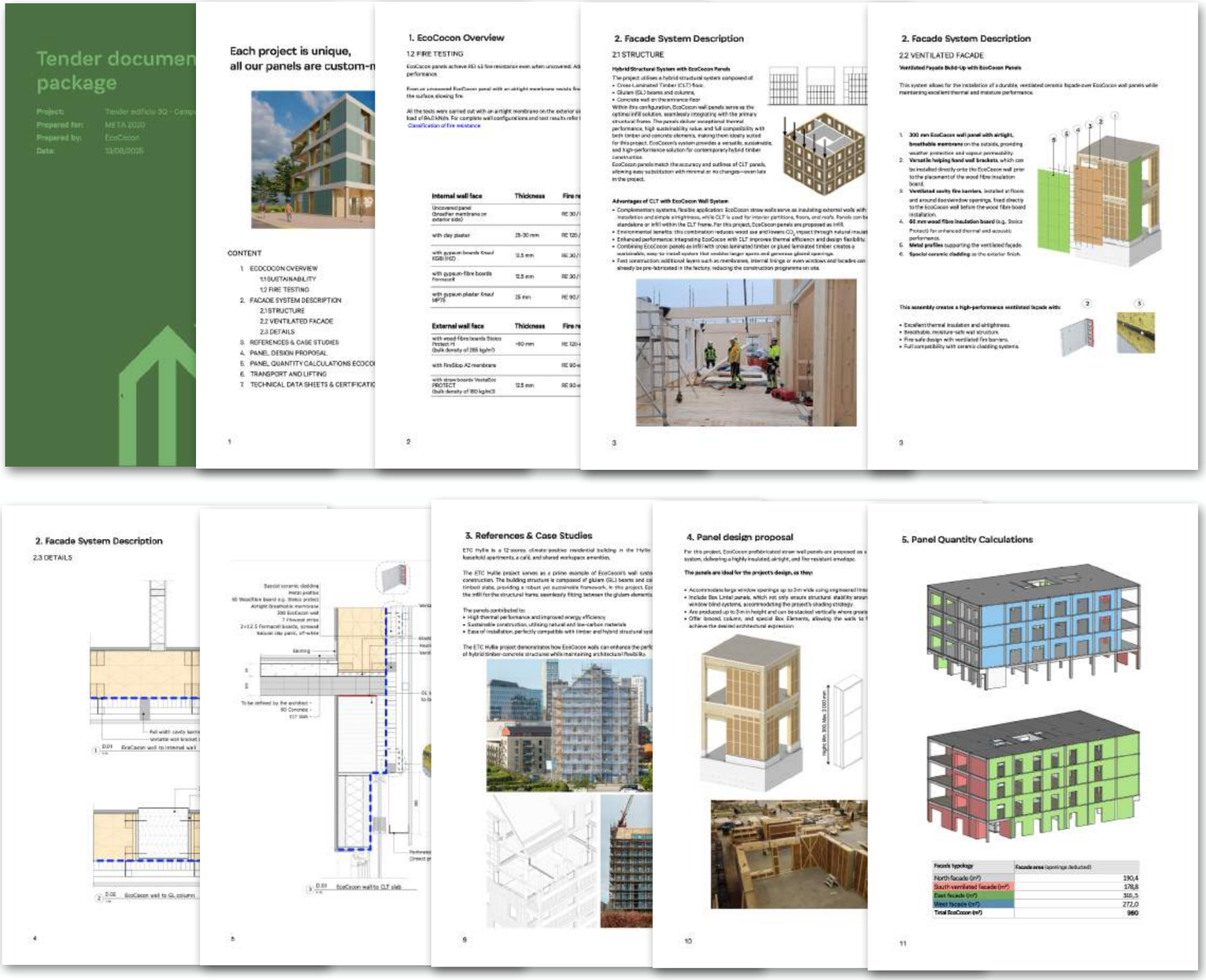
EcoCocon Support for Tender Bids

Preparing a competitive tender submission with EcoCocon can be complex. This chapter helps contractors, design–build teams, and planning studios present the system effectively.

The EcoCocon tender documentation package includes:

- EcoCocon overview: sustainability, fire testing
- Used EcoCocon Straw Wall System description: structure, build-up, details
- References & case studies
- Panel design proposal
- Panel quantity calculations EcoCocon
- Transport and lifting
- Technical data sheets & certifications

With this guidance, bidders can ensure their submissions are complete, accurate, and aligned with project specifications.



10

EU Taxonomy & ESG

EcoCocon & EU Taxonomy 111

ESG 114

EcoCocon & EU Taxonomy

The EU Taxonomy is a classification system created by the European Union to define what economic activities can be considered environmentally sustainable.

EcoCocon provides a taxonomy-aligned solution for sustainable construction, helping developers and architects demonstrate compliance through verified carbon data, circular design, and natural, non-harmful materials.

Why it matters?

Using EcoCocon helps make your project:

- Financeable through green bonds or ESG funds
- Aligned with upcoming regulations
- Credibly sustainable, not just “greenwashed”

Climate change mitigation – reducing or preventing greenhouse gas emissions.

Sustainable use and protection of water and marine resources – avoiding water pollution and overuse.



Protection and restoration of biodiversity and ecosystems – safeguarding habitats, species, and ecosystems.

Transition to a circular economy – promoting reuse, recycling, and resource efficiency.

Pollution prevention and control – reducing air, soil, and water pollution.

Climate change adaptation – increasing resilience to the impacts of climate change.

EcoCocon & EU Taxonomy

Activity	Description	Taxonomy criteria
7.1	Construction of new buildings	Primary energy demand (PED) ≤ 90% of NZEB standard
7.2	Renovation of buildings	PED reduced by ≥ 30%
7.3	Installation of energy efficiency equipment	Use of high-performance insulation & energy-saving components

The EU Taxonomy identifies which economic activities can be considered environmentally sustainable. To qualify, an activity must:

- Make a substantial contribution to at least one environmental objective (e.g., Climate change mitigation).
- Do No Significant Harm (DNSH) to other objectives.
- Comply with Minimum social safeguards (e.g. labour, human rights).
- Meet Technical screening criteria (quantitative or qualitative thresholds).

Climate change mitigation

Meets the Taxonomy's requirement for low life-cycle GHG emissions. EcoCocon directly supports this objective through:

- Low A1–A3 embodied carbon — refer to EPD.
- ~115 kg CO_2e/m² biogenic carbon stored (LCA verified).
- Renewable, biobased, rapidly renewable and locally sourced.
- Panel λ = 0.0645 W/m·K (PHI certified). Low U-value, high airtightness, low thermal bridging.
- ETA-26/0071 (TZÚS Prague), SK-TP 25/0007–V2 (TSÚS)

Circular economy & pollution prevention

Circular economy and pollution prevention aligned::

- Circularity in biological and technical material cycles. High-level environmental certification in progress.
- Designed for disassembly – reusable or recyclable at end of life.
- Dry production – no water pollution, minimal waste, low energy use.
- EcoCocon panels are available as PEFC Certified or FSC® Mix Credit upon request.

Do No Significant Harm (DNSH) compliance

DNSH compliant – material sourcing and manufacturing avoid harm to:

- Water – zero water in production, no harmful runoff.
- Biodiversity – straw is an agricultural by-product; no new raw material extraction.
- Human health – very low VOCs, no glues or fire retardants added; natural, non-harmful materials. Compliant with international indoor air quality standards – refer to EPD.

Minimum social safeguards

- EcoCocon implements due diligence procedures covering labour rights (ILO), anti-corruption, and fair taxation across operations and direct suppliers.

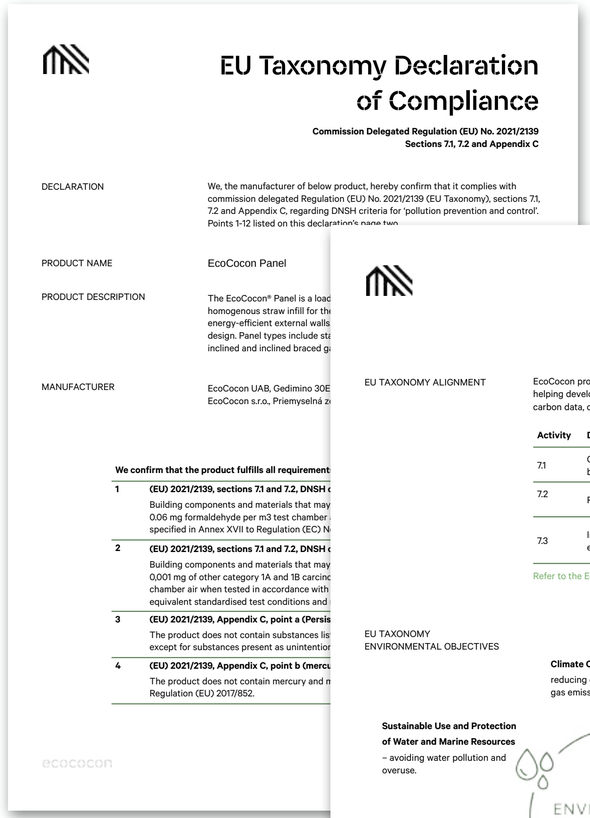
EcoCocon & EU Taxonomy

EcoCocon makes it easier to build Taxonomy-aligned architecture.

EcoCocon uses biobased, low-carbon, and circular materials with verified environmental performance, making compliance with EU Taxonomy criteria straightforward.

EcoCocon can provide **EU Taxonomy mapping tools** that help architects and investors verify how their project aligns with sustainability criteria. EcoCocon provides the following documentation to support EU Taxonomy compliance verification:

- EPD (EN 15804+A2) – LCA-verified embodied carbon and ~115 kg CO_2e/m² biogenic carbon storage. Passive House certified component (PHI).
- ETA-DoP under ETA-26/0071 (TZÚS Prague, 13/04/2026); SK-DoP under SK-TP 25/0007 (TSÚS)
- CE marked, declared performance based on ETA-26/0071. (Straw thermal insulation for EcoCocon Straw Panel)
- Supporting Circular economy and pollution prevention objectives. (High-level environmental certification in progress)
- EU Taxonomy Declaration of Compliance – confirming DNSH criteria compliance per regulation (EU) 2021/2139, sections 7.1, 7.2 and Appendix C.
- EU Taxonomy Alignment Report – activity mapping for construction (7.1), renovation (7.2) and insulation (7.3).



EU Taxonomy Declaration of Compliance

Commission Delegated Regulation (EU) No. 2021/2139
Sections 7.1, 7.2 and Appendix C

DECLARATION

We, the manufacturer of below product, hereby confirm that it complies with commission delegated Regulation (EU) No. 2021/2139 (EU Taxonomy), sections 7.1, 7.2 and Appendix C, regarding DNSH criteria for 'pollution prevention and control'. Points 1-12 listed on this declaration's page two

PRODUCT NAME

EcoCocon Panel

PRODUCT DESCRIPTION

The EcoCocon® Panel is a load
homogenous straw infill for th
energy-efficient external walls
design. Panel types include st
inclined and inclined braced g

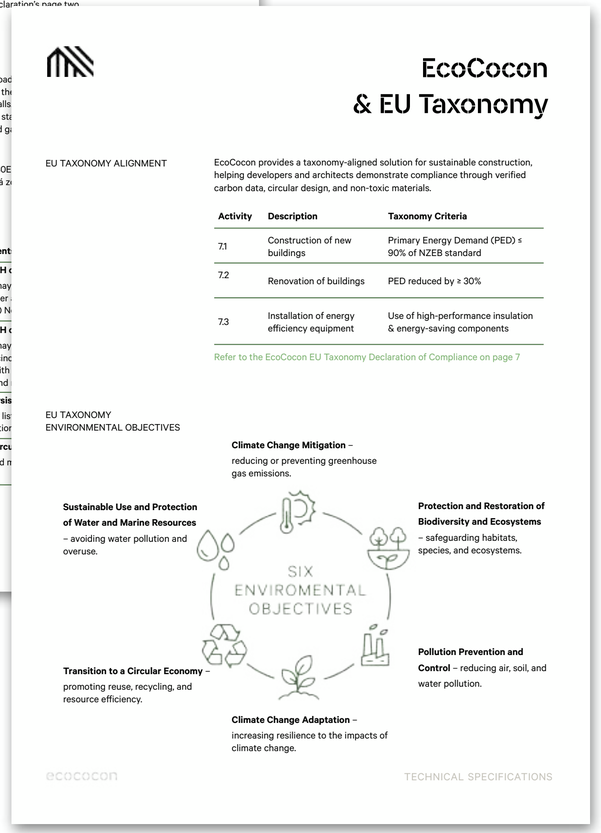
MANUFACTURER

EcoCocon UAB, Gedimino 30E
EcoCocon s.r.o., Priemyselná z

We confirm that the product fulfills all requirement

1	**(EU) 2021/2139, sections 7.1 and 7.2, DNSH** Building components and materials that may 0.06 mg formaldehyde per m3 test chamber specified in Annex XVII to Regulation (EC) N
2	**(EU) 2021/2139, sections 7.1 and 7.2, DNSH** Building components and materials that may 0,001 mg of other category 1A and 1B carcino chamber air when tested in accordance with equivalent standardised test conditions and
3	**(EU) 2021/2139, Appendix C, point a (Persis** The product does not contain substances lis except for substances present as unintentio
4	**(EU) 2021/2139, Appendix C, point b (mercu** The product does not contain mercury and n Regulation (EU) 2017/852.

ecococon



EcoCocon & EU Taxonomy

EU TAXONOMY ALIGNMENT

EcoCocon provides a taxonomy-aligned solution for sustainable construction, helping developers and architects demonstrate compliance through verified carbon data, circular design, and non-toxic materials.

Activity	Description	Taxonomy Criteria
7.1	Construction of new buildings	Primary Energy Demand (PED) ≤ 90% of NZEB standard
7.2	Renovation of buildings	PED reduced by ≥ 30%
7.3	Installation of energy efficiency equipment	Use of high-performance insulation & energy-saving components

Refer to the EcoCocon EU Taxonomy Declaration of Compliance on page 7

EU TAXONOMY ENVIRONMENTAL OBJECTIVES

Climate Change Mitigation – reducing or preventing greenhouse gas emissions.

Sustainable Use and Protection of Water and Marine Resources – avoiding water pollution and overuse.

Protection and Restoration of Biodiversity and Ecosystems – safeguarding habitats, species, and ecosystems.

SIX ENVIROMENTAL OBJECTIVES

Transition to a Circular Economy – promoting reuse, recycling, and resource efficiency.

Pollution Prevention and Control – reducing air, soil, and water pollution.

Climate Change Adaptation – increasing resilience to the impacts of climate change.

ecococon

TECHNICAL SPECIFICATIONS

EU Taxonomy report and declaration of compliance for EcoCocon panels

Refer to EU Taxonomy Alignment Report on website

ESG

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE

ESG is a voluntary framework for investors and companies to assess risks and opportunities.

It guides investment, risk management, and sustainability reporting — showing how a company reduces emissions (E), ensures fair working conditions (S), and maintains transparent governance (G).



By using the EcoCocon Straw Wall System, your clients can:

- Lower their carbon footprint
- Use verified, circular materials
- Create healthy, socially responsible buildings
- Strengthen transparent ESG reporting

E – Environmental

EcoCocon directly supports the Environmental goals of ESG through measurable impact and verified data.

- 89% straw, 10% certified timber; ~115 kg CO_2/m² sequestered.
- Passive House certified (λ = 0.0645 W/m·K).
- Available as PEFC Certified or FSC® Mix Credit upon request.
- Modular, non-glued — disassemble, reuse, recycle.
- Dry process: zero water use, zero-waste production.
- Natural, non-harmful materials. No glues or fire retardants added; very low VOCs — Eurofins verified.

S – Social

EcoCocon construction promotes health, well-being, and social responsibility.

- OECD, ILO & UNGP labour standards across supply chain
- Safe working conditions & OHS compliance
- Local production supports regional skills & jobs

G – Governance

EcoCocon provides transparent and verifiable data to support good governance and credible reporting.

- EPD + LCA verified; Passive House certified
- EU Taxonomy alignment reports & documentation ready for mandatory sustainability reporting
- CE marking via DoP ETA-26/0071 (TZÚS Prague); SK-DoP under SK TP-25/0007 (TSÚS)
- Independent third-party production supervision (TSÚS, System I)
- ≥50-year assumed working life per DoP ETA-26/0071

Annex 1

Structural Connections

EcoCocon Panels 116

EcoCocon Panels - Assembly Connections 118

Changelog			
Release date	Author	Revision description	Revision
20.01.2026	V. Naruševič	Initial release	Rev_0

EcoCocon Panels

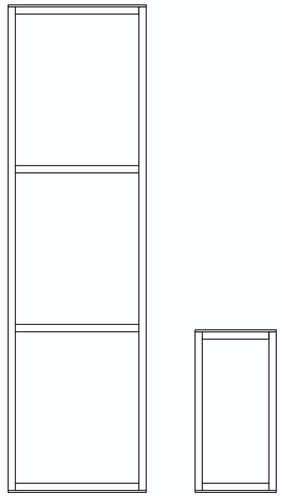
Address:
EcoCocon UAB,
Gedimino g.30, Kybartai, LT-70421, Lithuania

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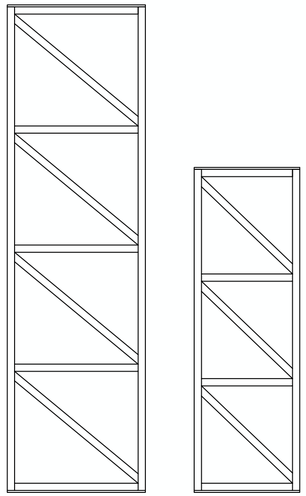
Number of sheets	Author	Revision	Release date
37	V. Naruševič	Rev_0	20.01.2026

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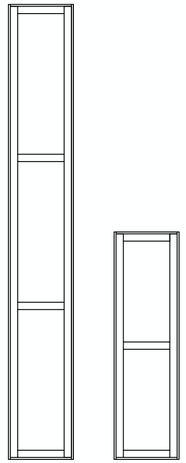
Standard Panels P
M 1:30



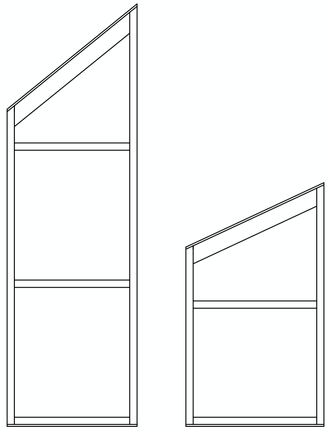
Braced Panels B
M 1:30



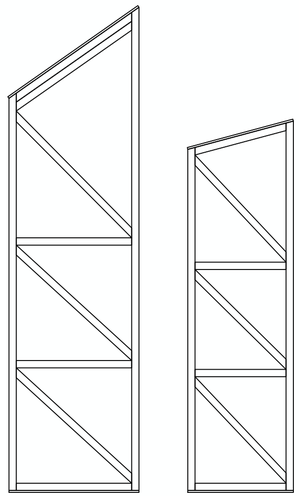
Column Panels C
M 1:30



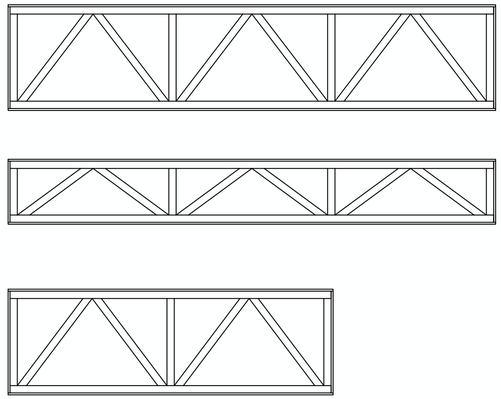
Inclined Panels I
M 1:30



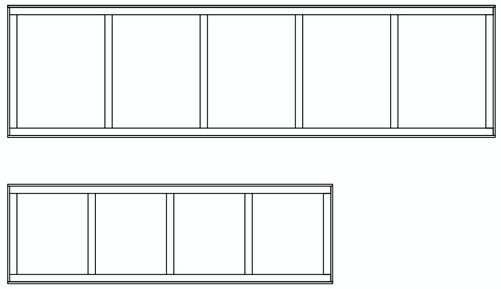
Inclined Braced Panels IB
M 1:30



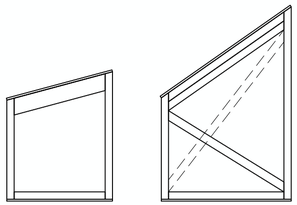
Lintel Panels L
M 1:30



Sill Panels S
M 1:30



Inclined Panels I and IB
in Automated production
M 1:30



EcoCocon Principal Details	Ref. no. EC-SP-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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EcoCocon Panel's Overview

EcoCocon panels - Assembly

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Changelog			
Release date	Author	Revision description	Revision
20.01.2026	V. Naruševič	Initial release	Rev_0

Notes:

Screws in use during assembly of panels:

1 - Washer head 60 8,0 x 100mm, TX40;

2 - Washer head 60 8,0 x 50mm, TX40;

3 - Countersunk head 90 4,5x50mm, TX20;

4 - Washer head 60 8,0 x 160mm, TX40;

5 - Washer head 60 8,0 x 180mm, TX40;

6 - Washer head 60 6,0 x 200mm, TX30;

7 - Countersunk head 90 8,0 x 120mm, TX40;

8 - Countersunk head 60 8,0 x 200mm, TX40;

9 - Countersunk head 60 8,0 x 300mm, TX40;

10 - Washer head 60 8,0 x 600mm, TX40;

11 - Countersunk head 90 6,0 x 60mm, TX30;

12 - KonstruX head 60 8,0 x 200mm, TX40;

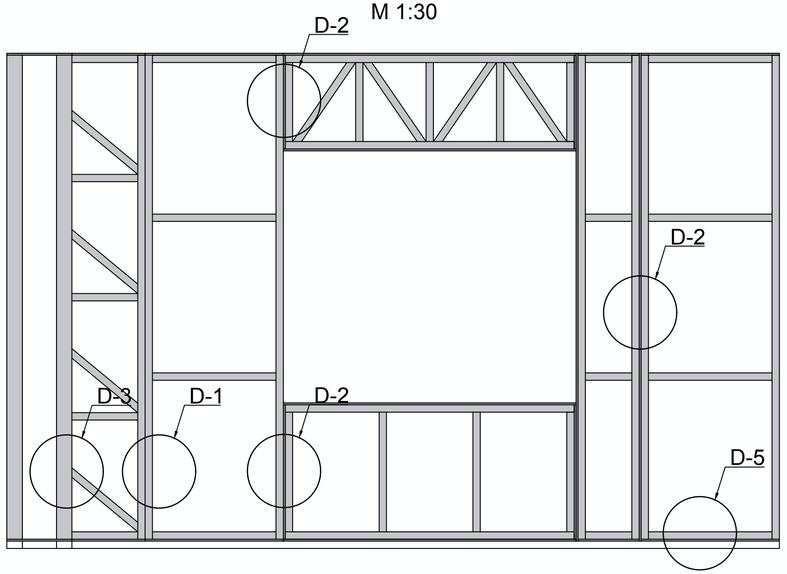
13 - Washer head 60 6,0 x 120mm, TX30;

14 - CSA to connector 5,0 x 50mm, TX20;

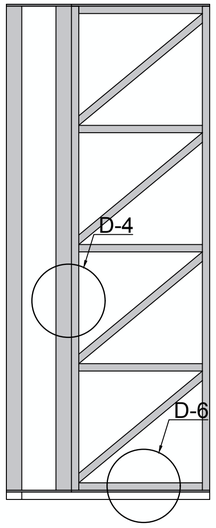
15 - Washer head 60 8,0 x 120mm, TX40;

16 - Washer head 60 8,0 x 140mm, TX40;

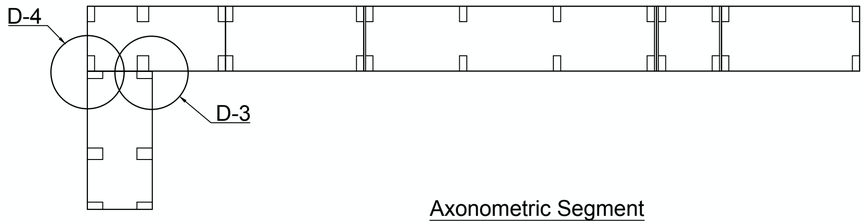
Front View of the EcoCocon Wall
M 1:30



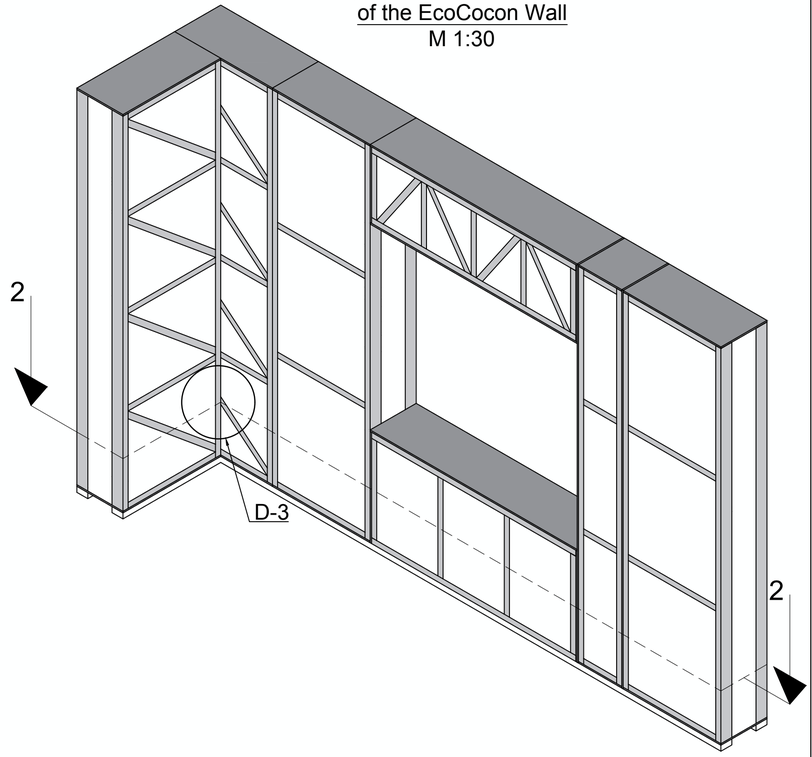
Side View of the EcoCocon Wall
M 1:30



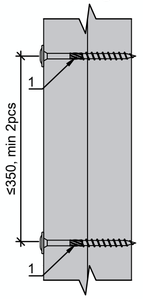
Cross-section View of the EcoCocon Wall
M 1:30



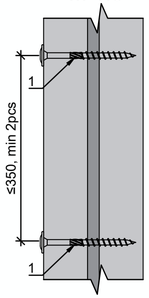
Axonometric Segment of the EcoCocon Wall
M 1:30



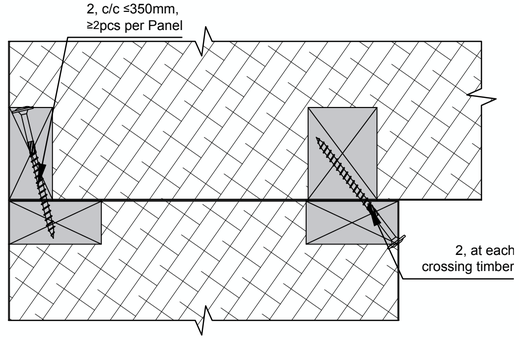
D-1
M 1:5



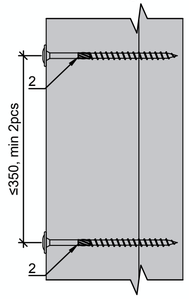
D-2
M 1:5



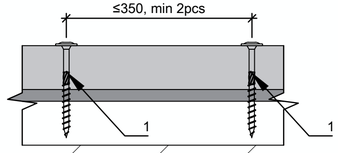
D-3 and D-4
M 1:5



D-4
M 1:5



D-5
M 1:5



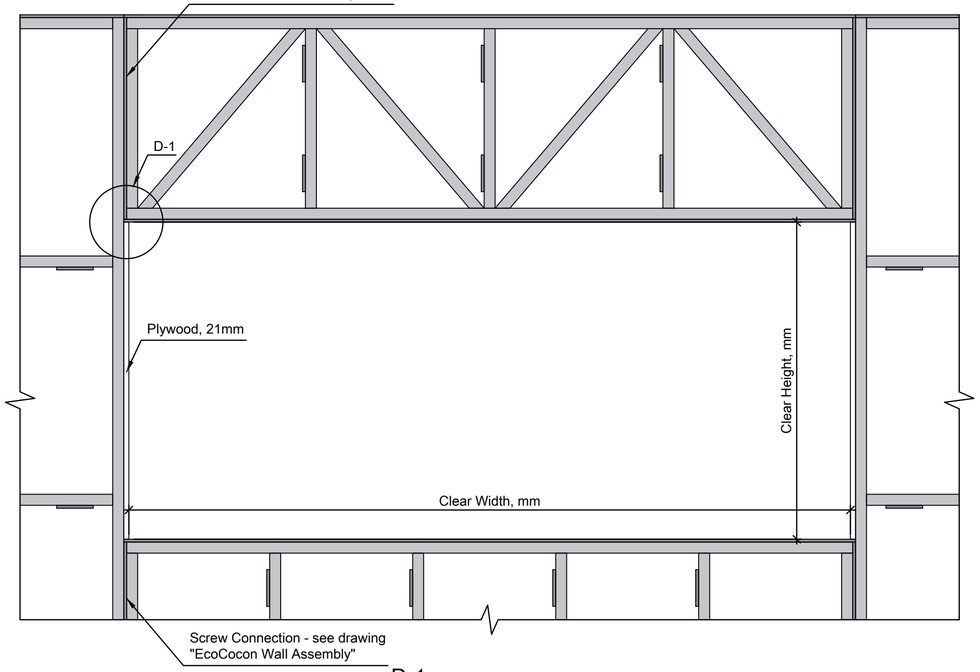
Screws with partial thread:
1 - Washer head 60 8,0 x 100mm, TX40;
2 - Washer head 60 8,0 x 140mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/P-01	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

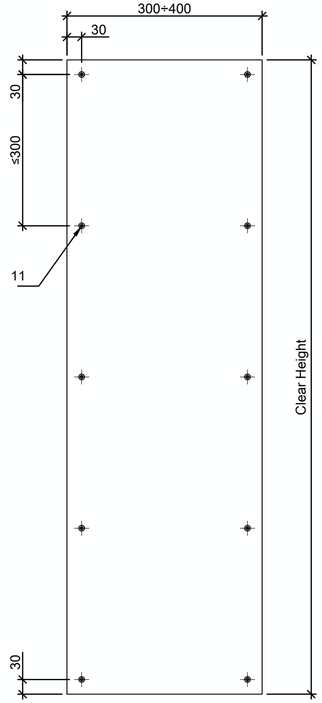
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EcoCocon Panel's Wall Assembly

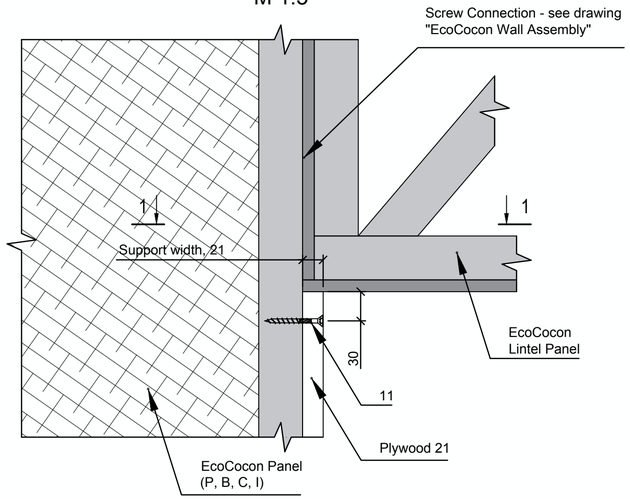
Opening layout
M1:20



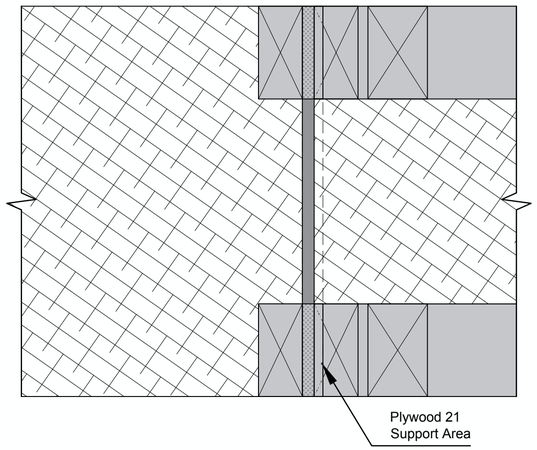
Plywood 21,
M 1:10



D-1
M 1:5



D-1, 1-1
M 1:5



NOTES:
1. Can be used with any kind of EcoCocon panel types;
2. Bottom panel should be S - Sill Panel or P - Standard Panel if width is less than 85cm;
3. Top panel should always be a L - Lintel Panel or X - Box Element panels;

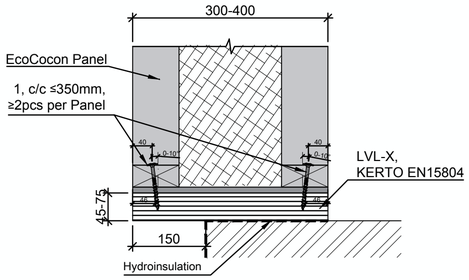
Screws in use during assembly:
11 - Countersunk head 60 6,0 x 60mm, TX30;

EcoCocon Principal Details	Ref. no. RD-CO-P/OP-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

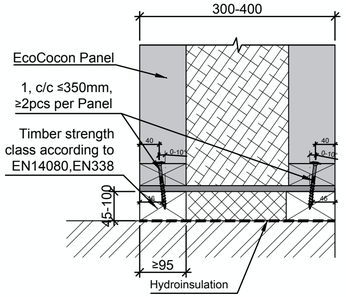
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Wall Opening Plywood Connection

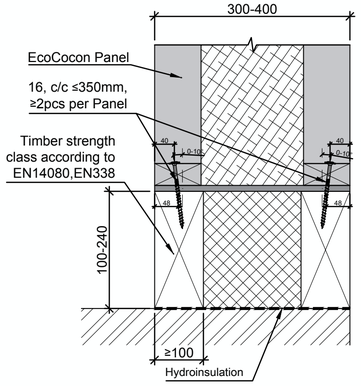
B-1
M 1:10



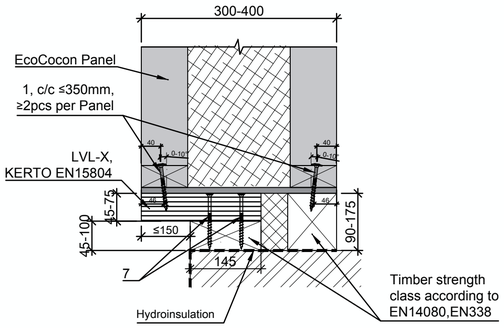
B-2
M 1:10



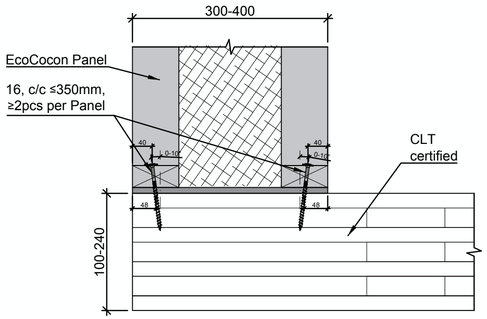
B-3
M 1:10



B-4
M 1:10



B-5
M 1:10



Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
7 - Countersunk head 90 8,0 x 120mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

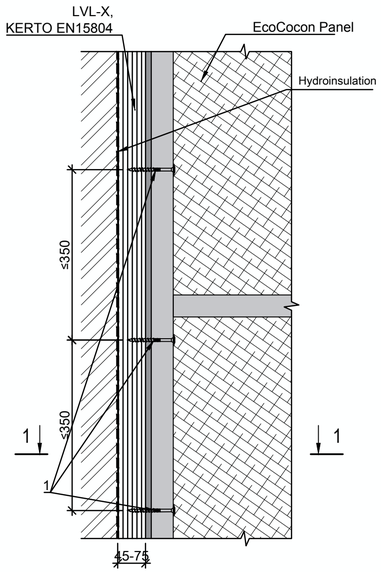
NOTES:
1. Characteristic withdrawal strength for the timber to the foundation connection should be ≥8kN/m;

EcoCocon Principal Details	Ref. no. RD-CO-P/BP-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

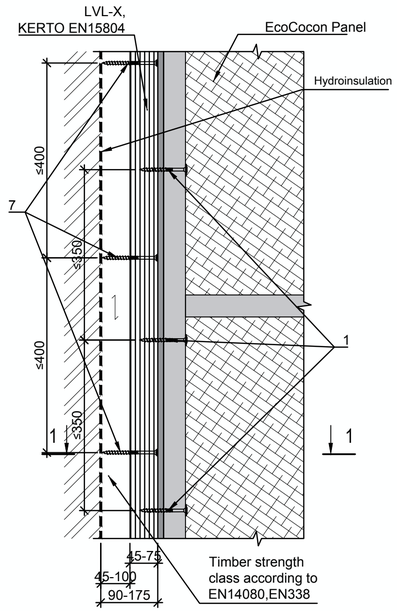
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Base Plate Connection

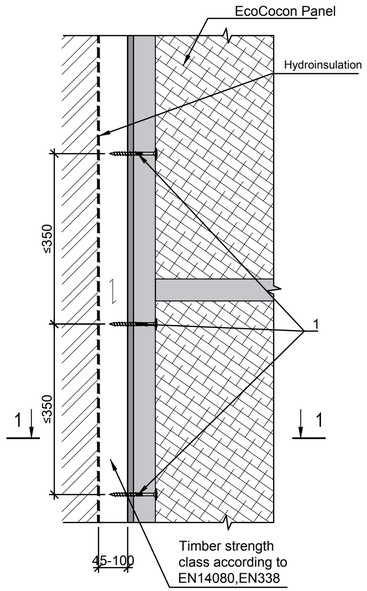
O-1
M 1:10



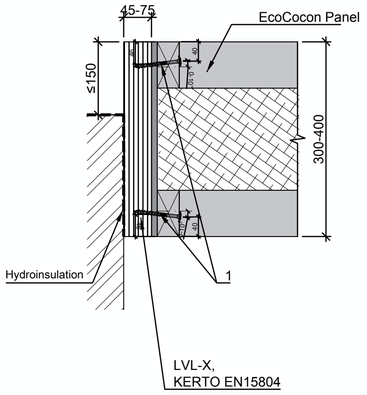
O-2
M 1:10



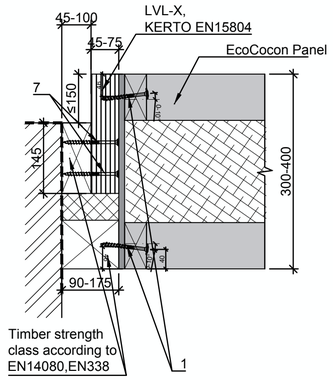
O-3
M 1:10



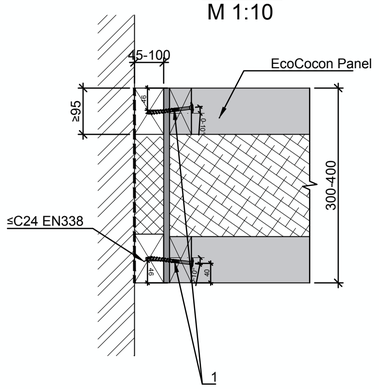
O-1, 1-1
M 1:10



O-2, 1-1
M 1:10



O-3, 1-1
M 1:10



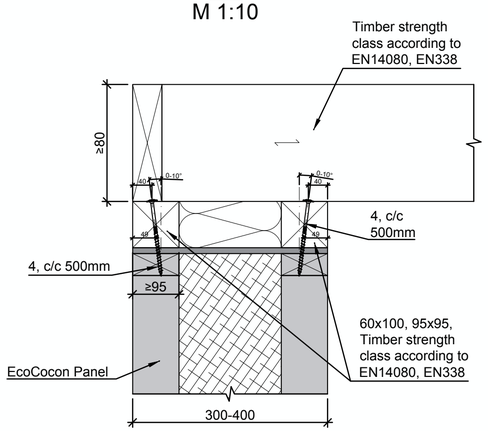
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
7 - Countersunk head 60 8,0 x 120mm, TX40;

NOTES:
1. Characteristic withdrawal strength for the timber to the existing wall connection should be ≥8kN/m;

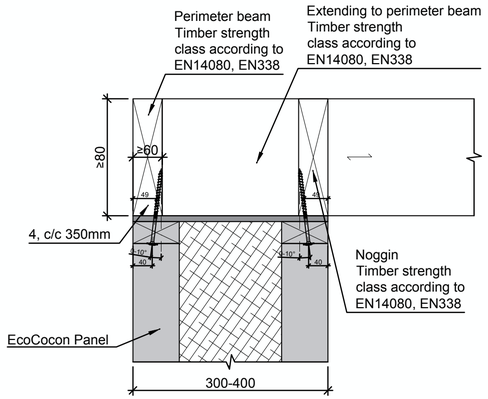
EcoCocon Principal Details	Ref. no. RD-CO-P/EW-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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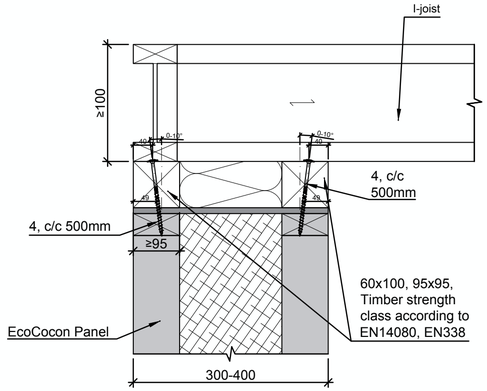
T-7
M 1:10



T-8
M 1:10



T-9
M 1:10



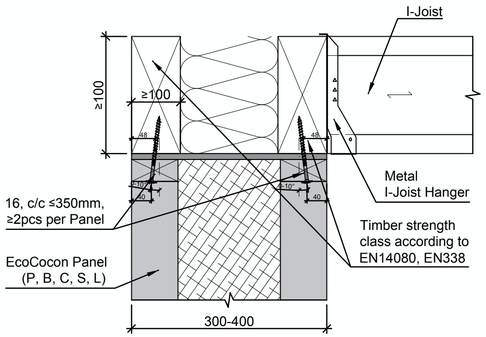
Screws in use during assembly:
4 - Washer head 60 8,0 x 160mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/RF-01	Drawn: Vitalij Narušević	Rev: 0	Date: 01.06.2026

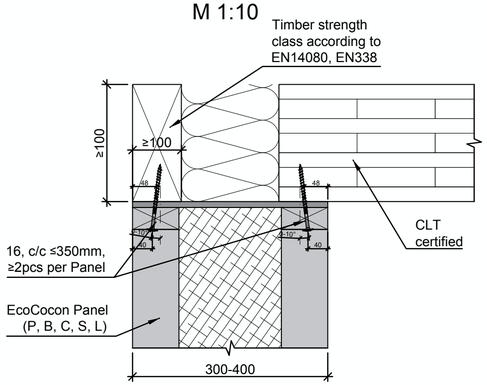
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Wall Plate Connection

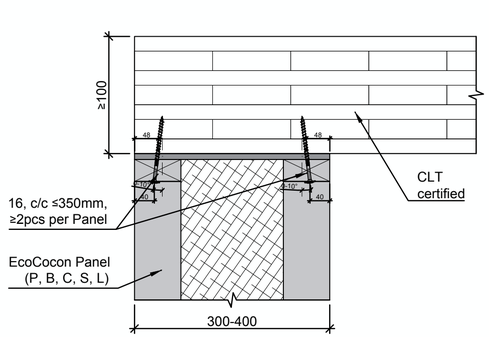
T-4
M 1:10



T-5
M 1:10



T-6
M 1:10



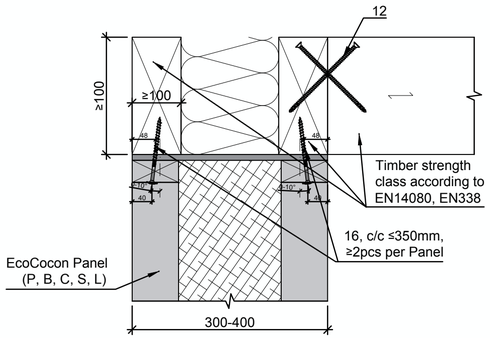
Screws in use during assembly:
16 - Washer head 60 8,0 x 140mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/RF/FL-02	Drawn: Vitalij Narušević	Rev: 0	Date: 01.06.2026

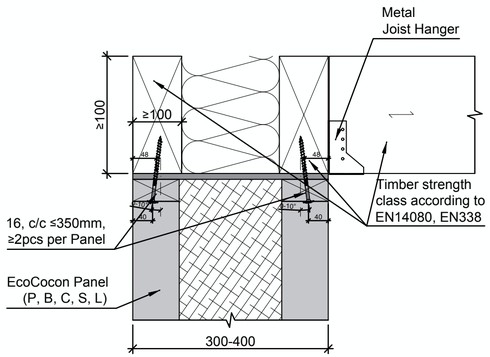
© EcoCocon

Wall Plate Connection

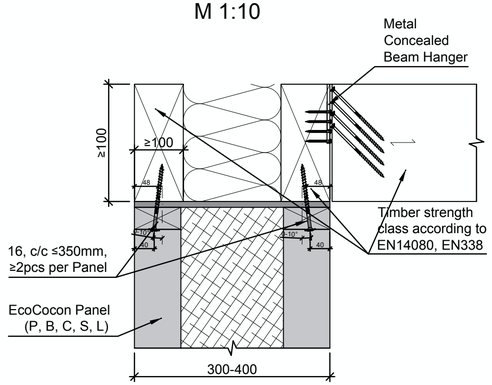
T-1
M 1:10



T-2
M 1:10



T-3
M 1:10



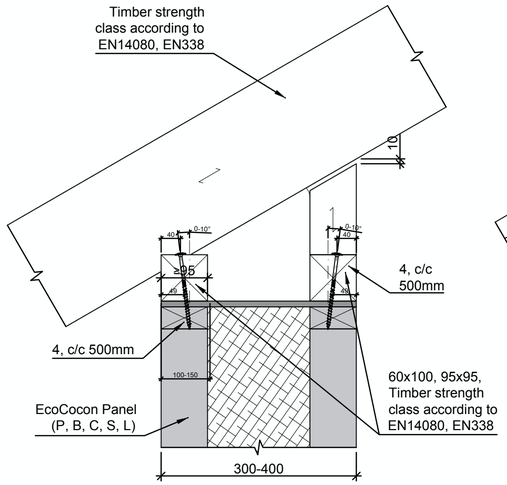
Screws in use during assembly:
12 - KonstruX head 60 8,0 x 200mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/RF/FL-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 01.06.2026

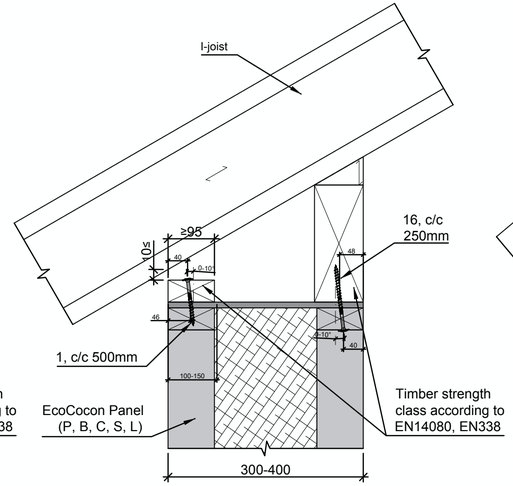
© EcoCocon

Wall Plate Connection

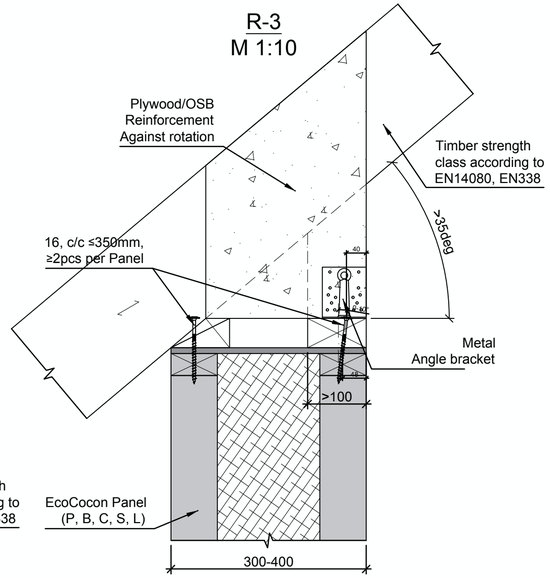
R-1
M 1:10



R-2
M 1:10



R-3
M 1:10



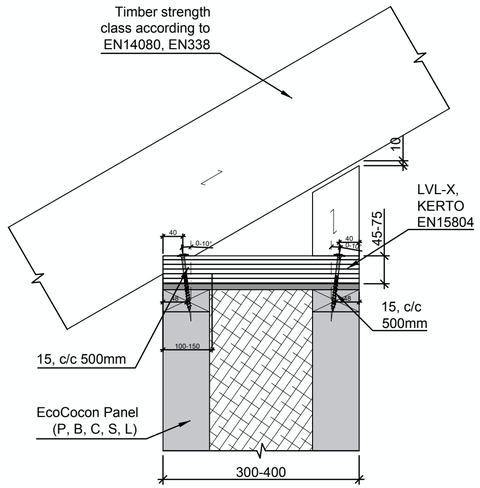
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
3 - Washer head 60 8,0 x 140mm, TX40;
4 - Washer head 60 8,0 x 160mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/RF-02	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

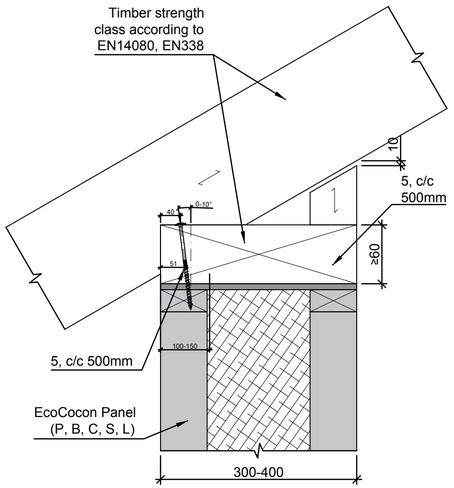
© EcoCocon

Roof Connection

R-4
M 1:10



R-5
M 1:10



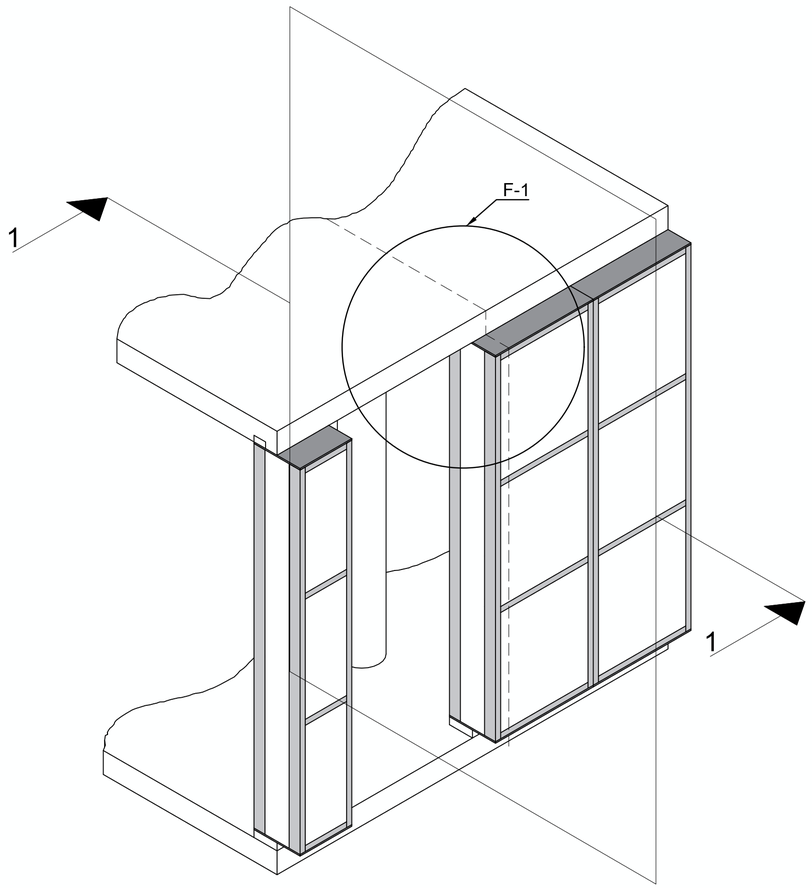
Screws in use during assembly:
5 - Washer head 60 8,0 x 180mm, TX40;
15 - Washer head 60 8,0 x 120mm, TX40;

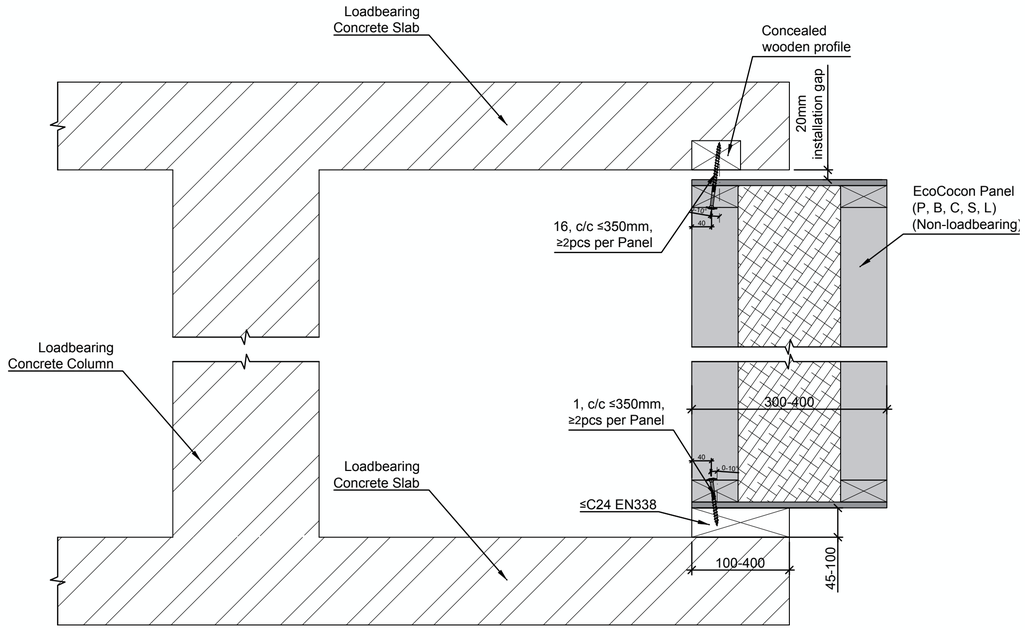
EcoCocon Principal Details	Ref. no. RD-CO-P/RF-03	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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Roof Connection with Horizontal Stability

F-1
M 1:10



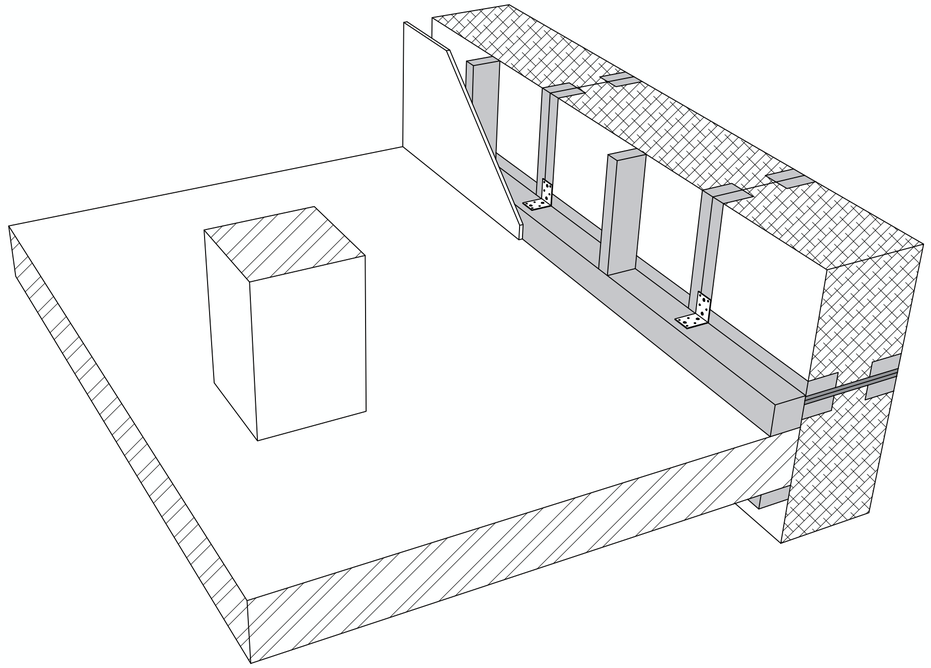


Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

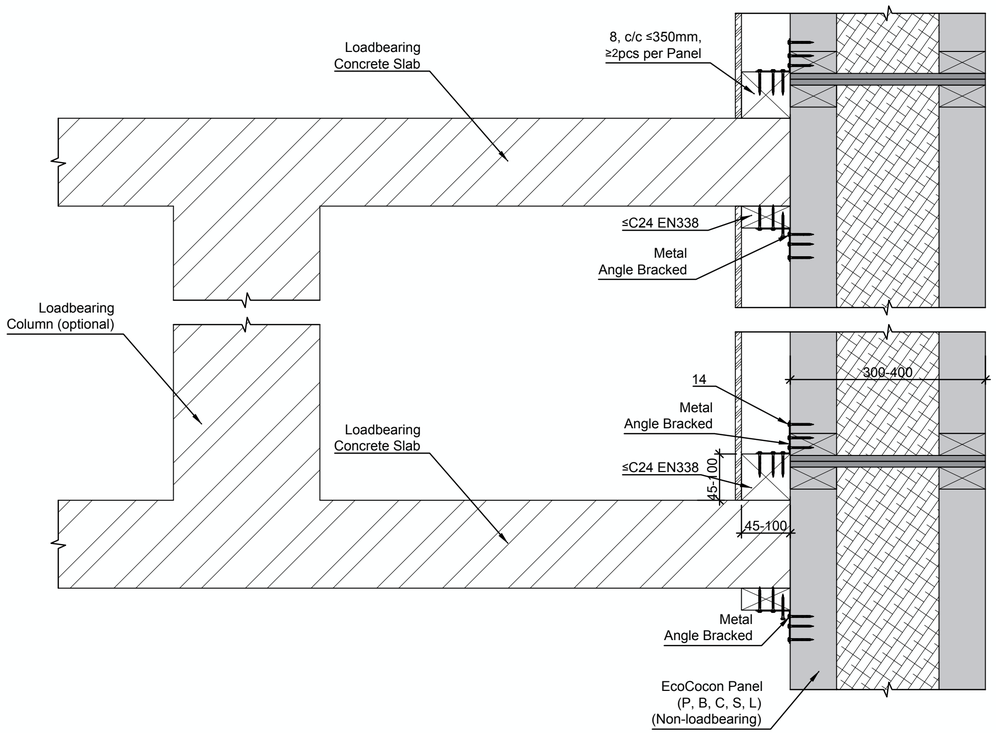
EcoCocon Principal Details	Ref. no. RD-CO-P/FL-01 (C)	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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Connection to Concrete Structure



F-2, 1-1
M 1:10

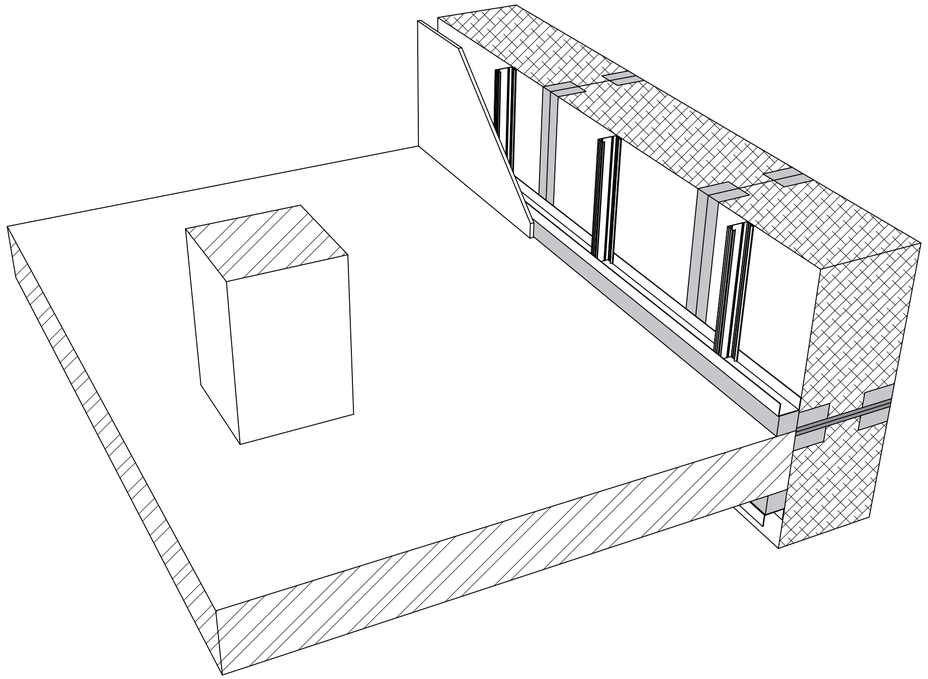


Screws in use during assembly:
8 - Countersunk head 60 8,0 x 200mm, TX40;
14 - CSA to connector 5,0 x 50mm, TX20;

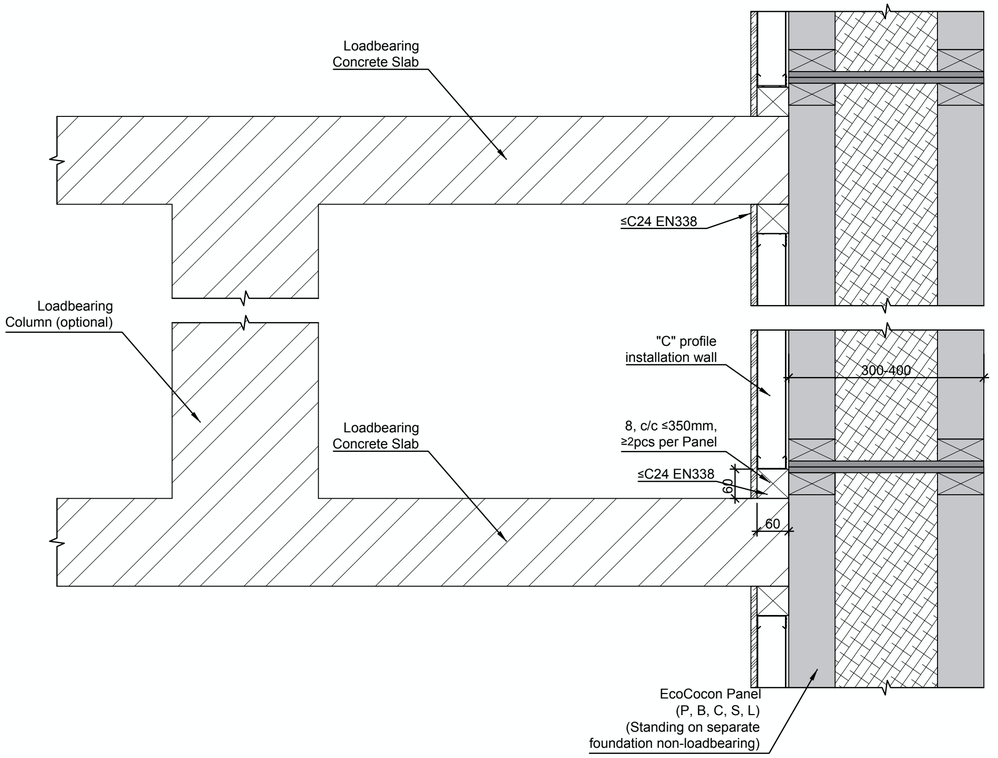
EcoCocon Principal Details	Ref. no. RD-CO-P/FL-02 (C)	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

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Connection to Concrete Structure



F-7, 1-1
M 1:10

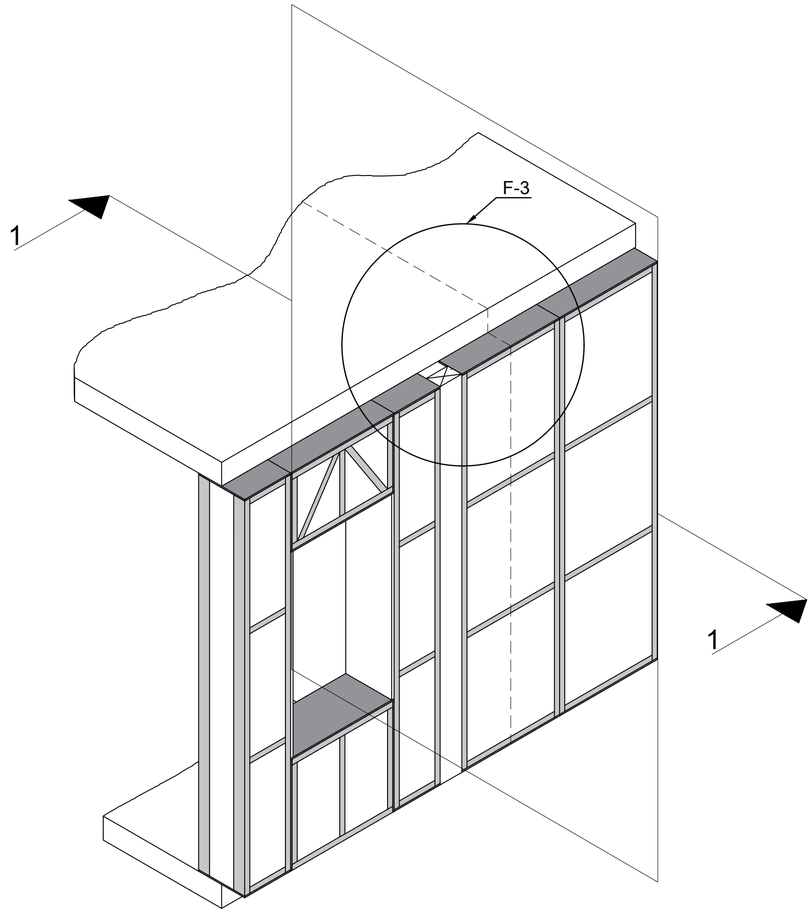


Screws in use during assembly:
8 - Countersunk head 60 8,0 x 200mm, TX40;

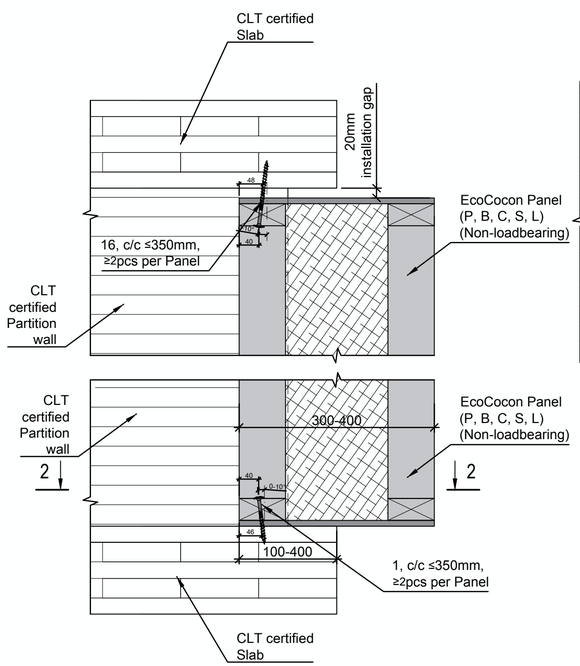
EcoCocon Principal Details	Ref. no. RD-CO-P/FL-03 (C)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

© EcoCocon

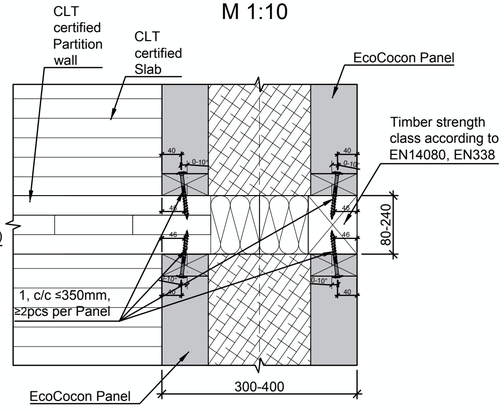
Connection to Concrete Structure



F-3, 1-1
M 1:10



F-3, 2-2
M 1:10



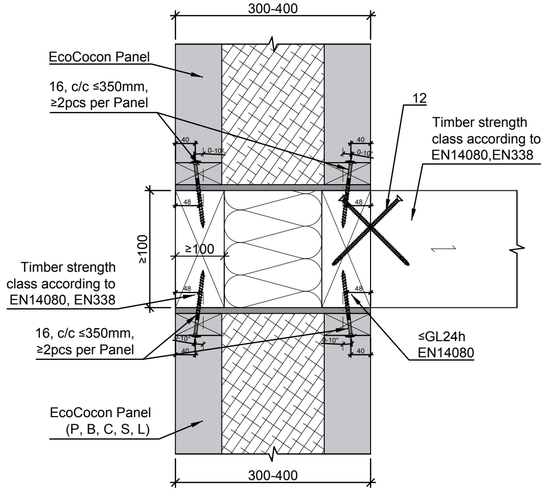
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/FL-04 (CLT)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

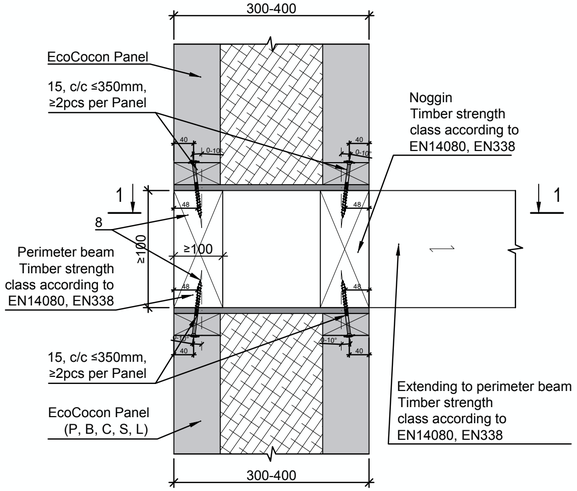
© EcoCocon

Connection to CLT Structure

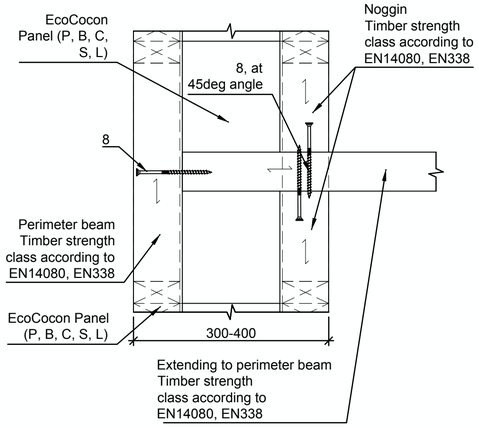
C-1
M 1:10



C-2
M 1:10



C-2, 1-1
M 1:10



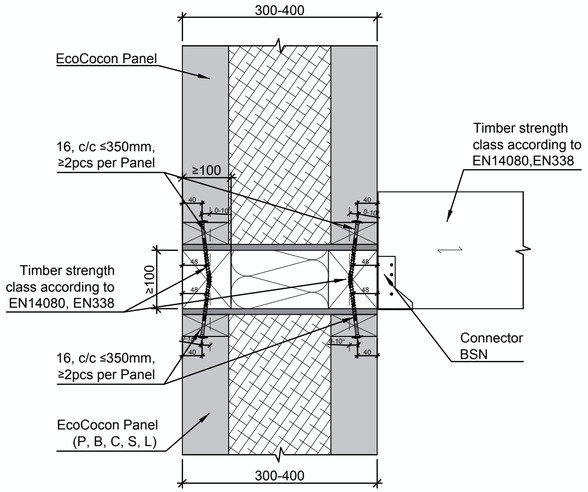
Screws in use during assembly:
8 - Countersunk head 60 8,0 x 200mm, TX40;
15 - Washer head 60 8,0 x 120mm, TX40;
16 - Washer head 60 8,0 x 140mm, TX40;
12 - KonstruX head 8,0 x 200mm, X40;

EcoCocon Principal Details	Ref. no. RD-CO-P/FL-05 (T)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

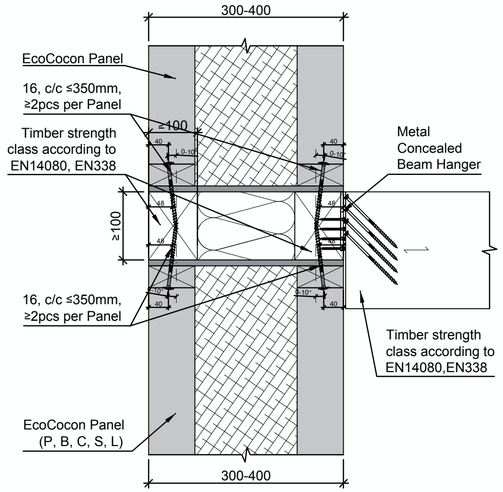
© EcoCocon

Floor Connection

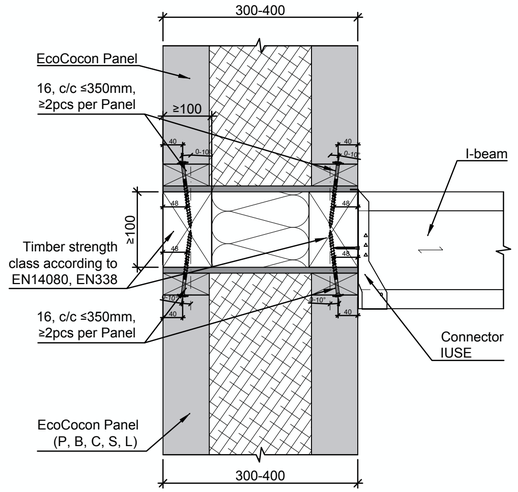
C-3
M 1:10



C-4
M 1:10



C-5
M 1:10



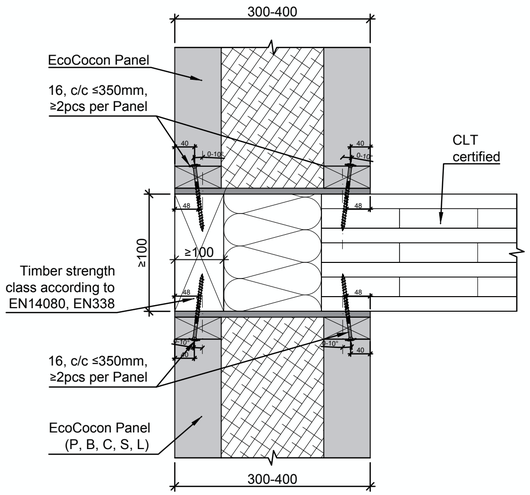
Screws in use during assembly:
16 - Washer head 60 8,0 x 140mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/FL-06 (T)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

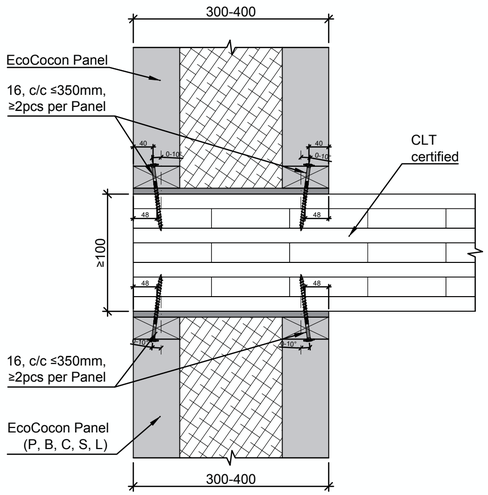
© EcoCocon

Floor Connection

C-6
M 1:10



C-7
M 1:10

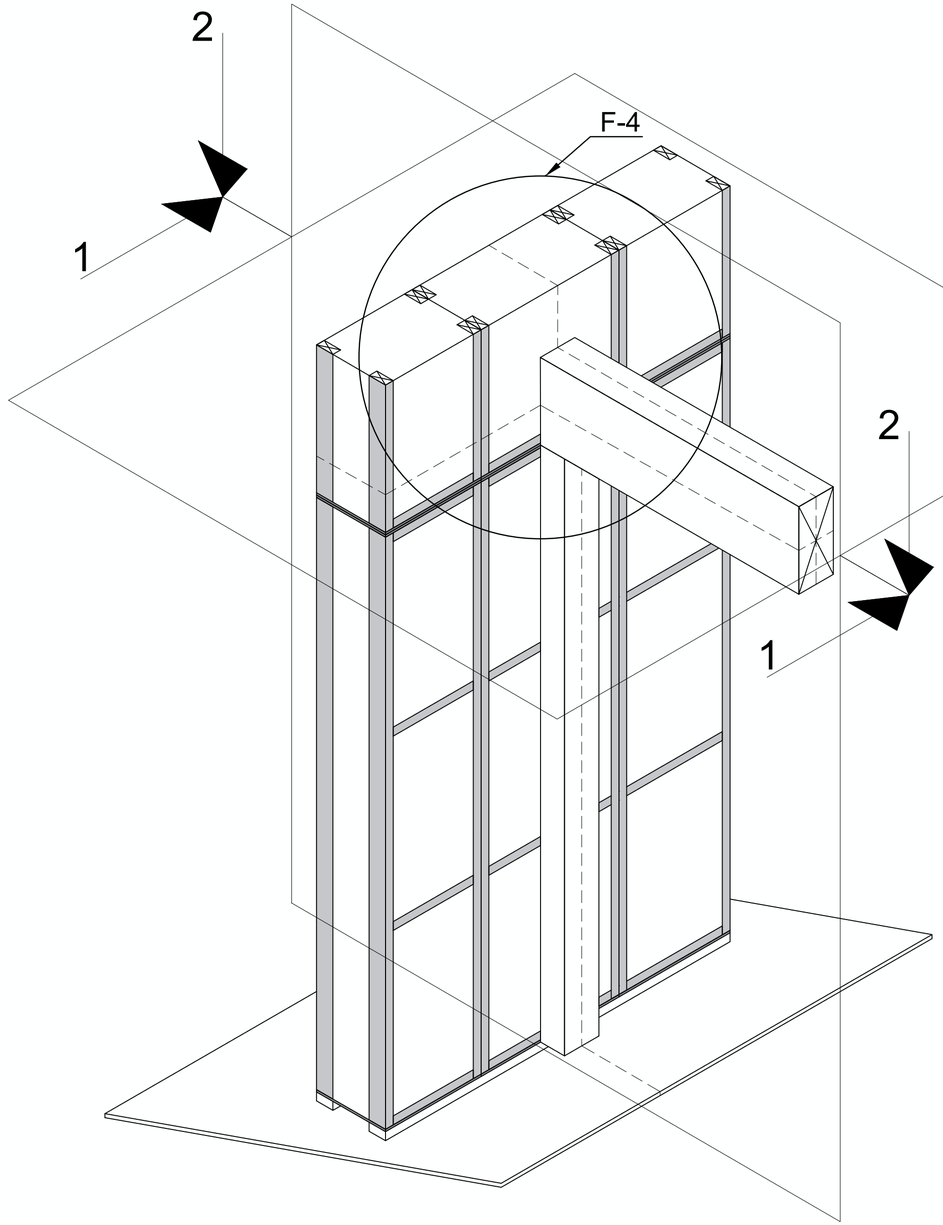


Screws in use during assembly:
16 - Washer head 60 8,0 x 140mm, TX40;

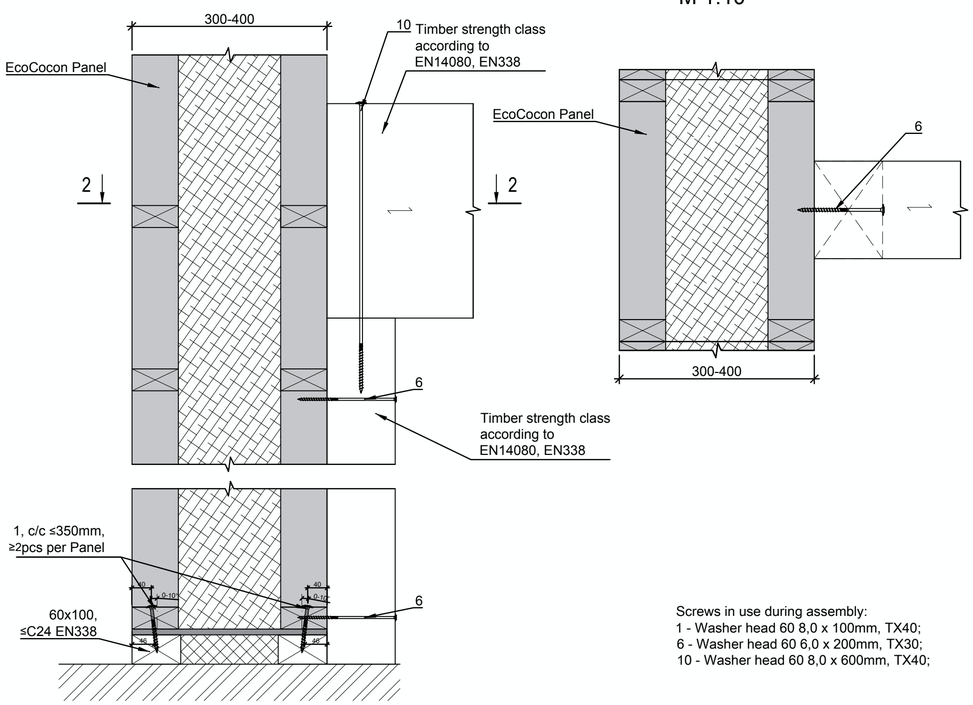
EcoCocon Principal Details	Ref. no. RD-CO-P/FL-07 (CLT)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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Floor Connection 3



F-4, 1-1
M 1:10



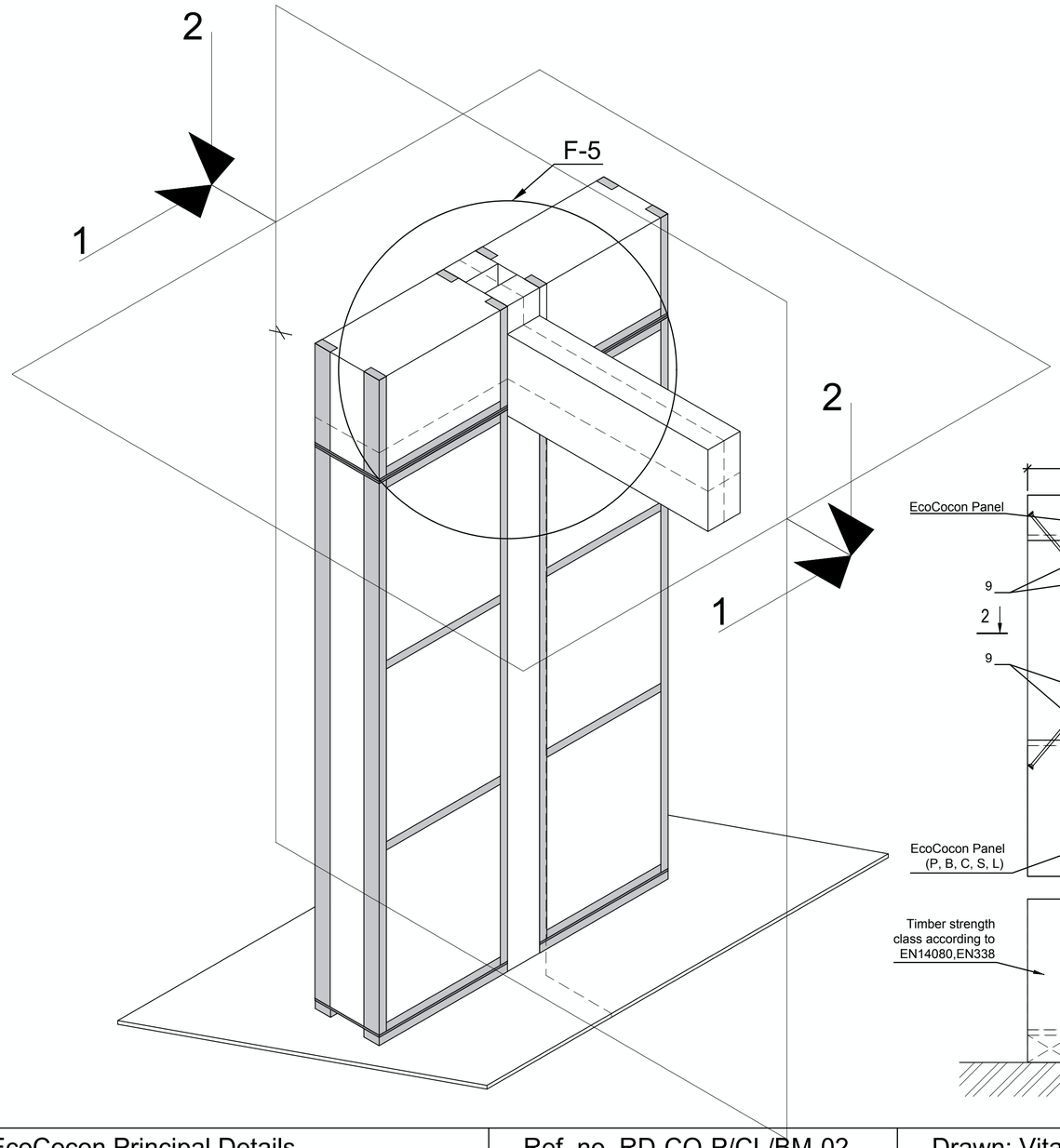
F-4, 2-2
M 1:10

Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
6 - Washer head 60 6,0 x 200mm, TX30;
10 - Washer head 60 8,0 x 600mm, TX40;

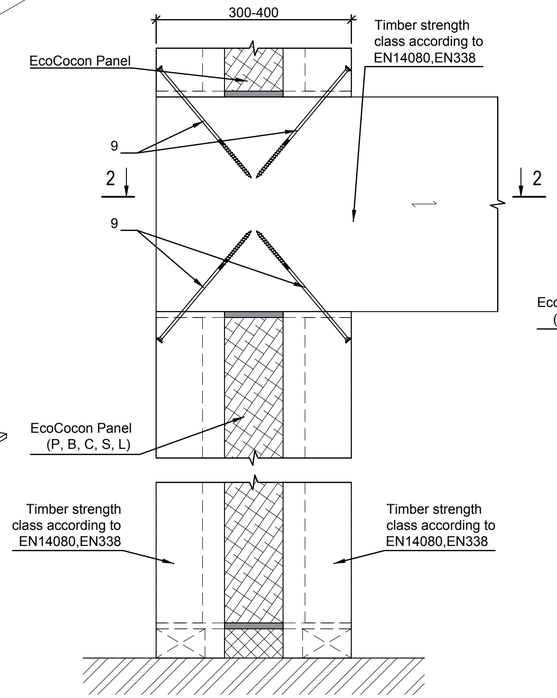
EcoCocon Principal Details	Ref. no. RD-CO-P/CL/BM-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

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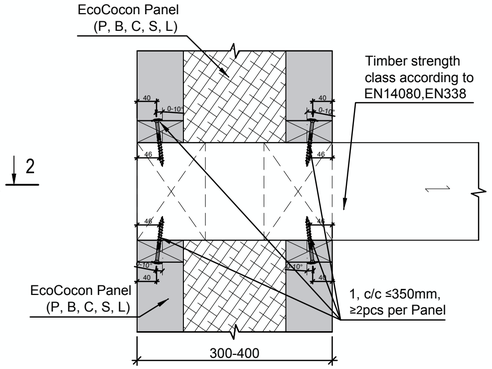
Column with Beam in Front of Wall



F-5, 1-1
M 1:10



F-5, 2-2
M 1:10



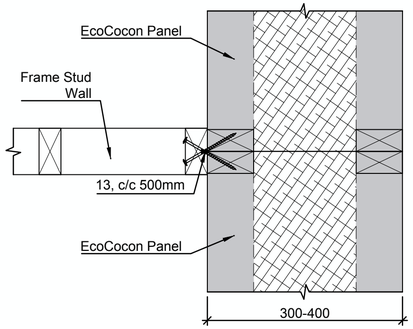
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
9 - Countersunk head 60 8,0 x 300mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/CL/BM-02	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

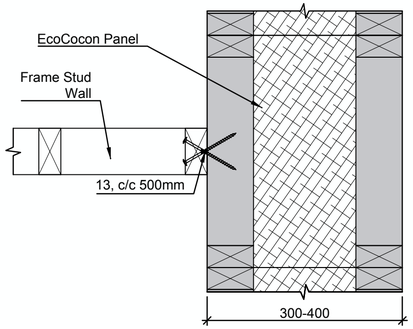
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Column with Beam Between the Wall

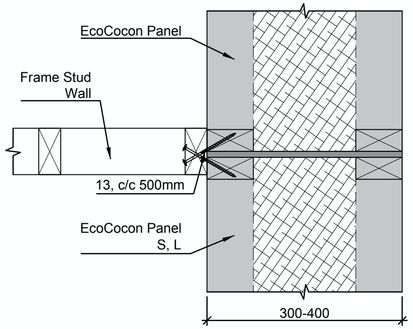
P-1
M 1:10



P-2
M 1:10



P-3
M 1:10



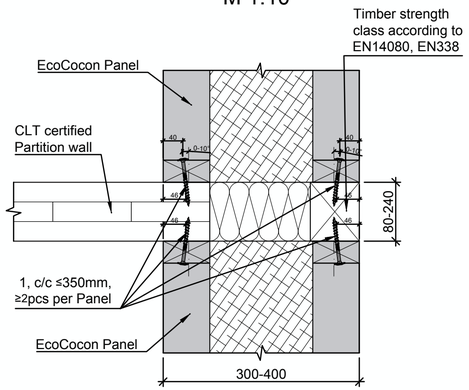
Screws in use during assembly:
13 - Washer head 60 6,0 x 120mm, TX30;

EcoCocon Principal Details	Ref. no. RD-CO-P/IW-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

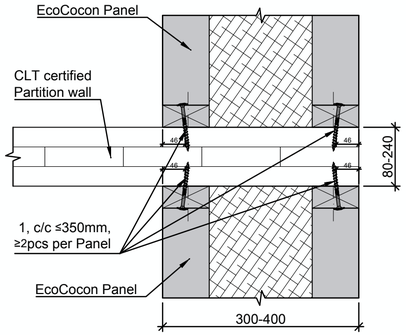
© EcoCocon

Interior Wall Connection

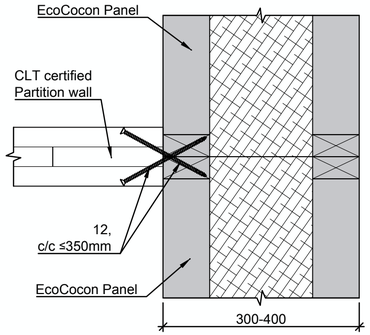
P-4
M 1:10



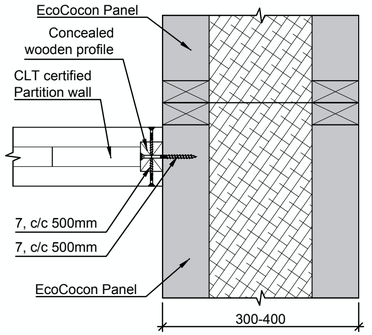
P-5
M 1:10



P-6
M 1:10



P-7
M 1:10



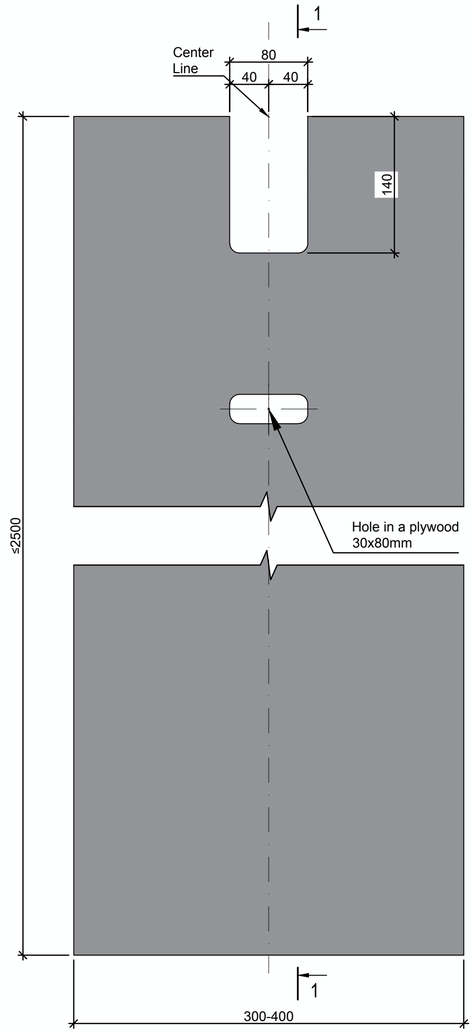
Screws in use during assembly:
1 - Washer head 60 8,0 x 100mm, TX40;
7 - Countersunk head 60 8,0 x 120mm, TX40;
12 - KonstruX head 60 8,0 x 200mm, TX40;

EcoCocon Principal Details	Ref. no. RD-CO-P/IW-02 (CLT)	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

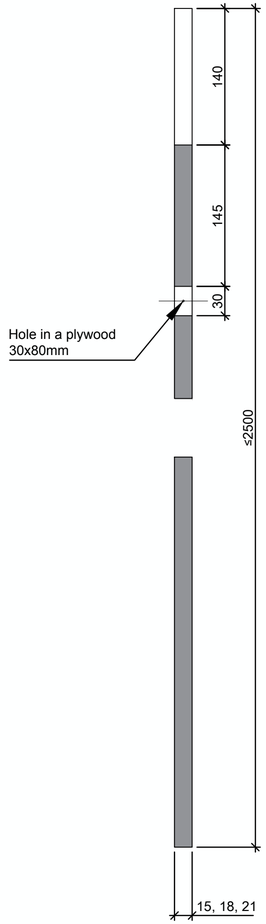
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Interior Wall Connection

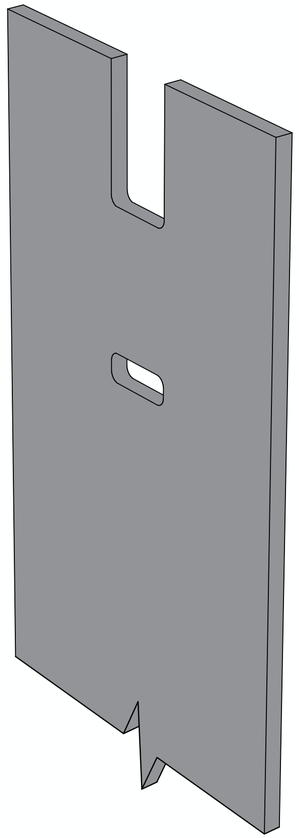
Plywood for lifting
Used in between the P, B, I Panels
and no plywood on the side of the panel
M 1:5



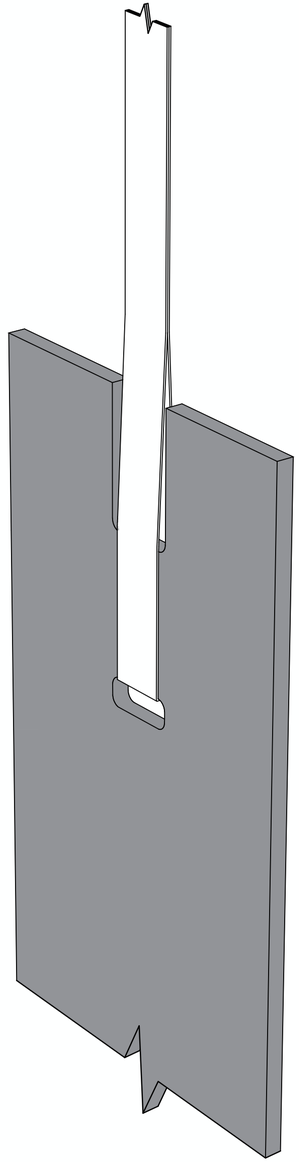
1-1
M 1:5



Plywood for lifting
M 1:5



Plywood for lifting
in use with a strap
M 1:5



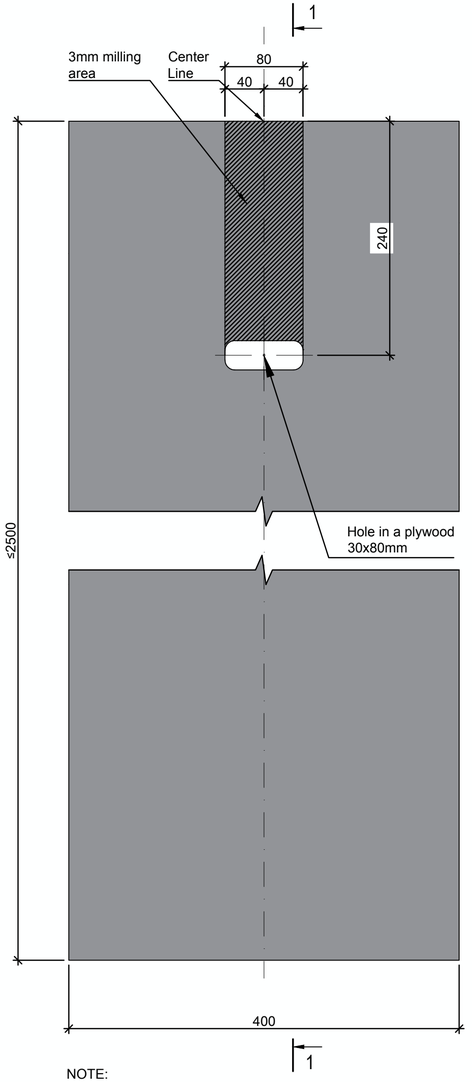
NOTE:
- Maximum load in tonnes by unit when plywood: 15mm - 2.11; 18mm - 2.50; 21mm - 2.77;
- The lifting force must be applied only vertically;
- Hole edges must be rounded and sanded;

EcoCocon Principal Details	Ref. no. RD-LP-01	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

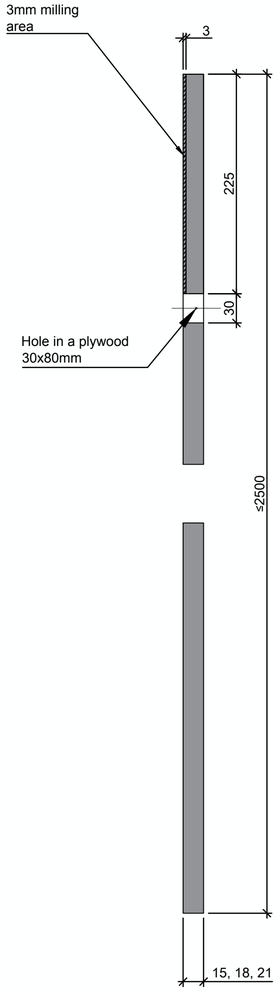
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Plywood for Lifting. PL01

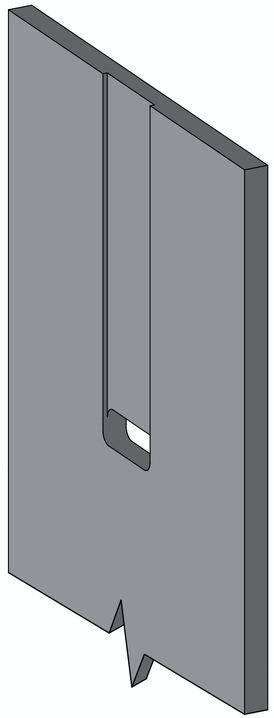
Plywood for lifting
Used next to the L, C, S Panels
When on one side
M 1:5



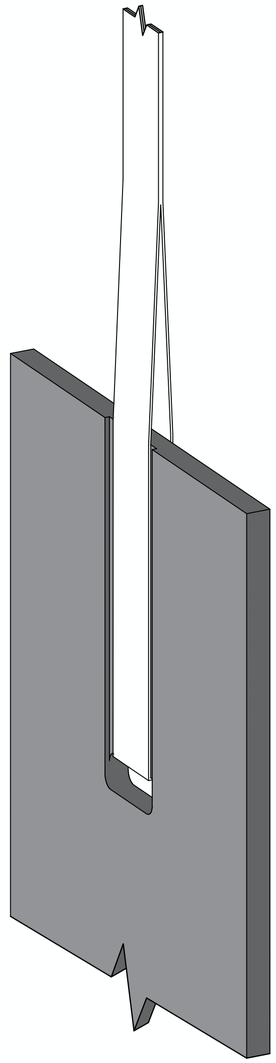
1-1
M 1:5



Plywood for lifting
M 1:5



Plywood for lifting
in use with a strap
M 1:5



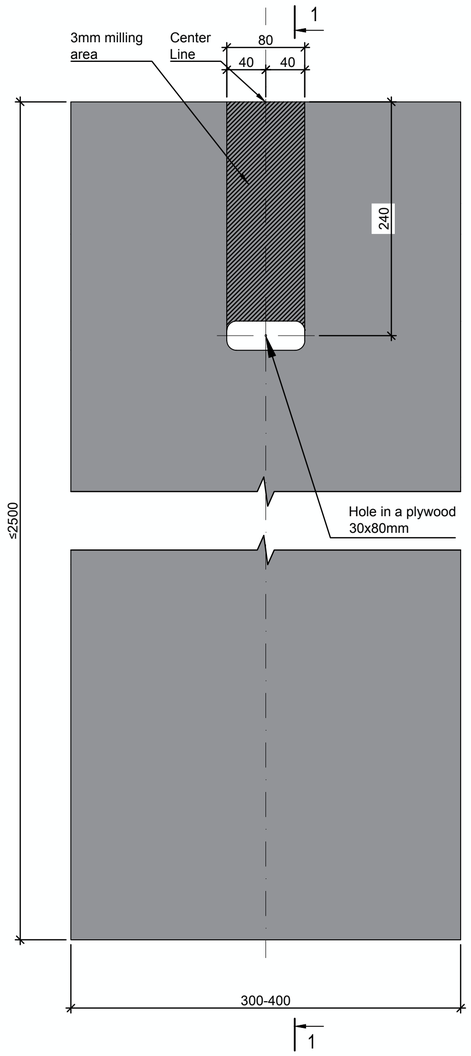
NOTE:
- Maximum load in tonnes by unit when plywood: 15mm - 1.69; 18mm - 2.09; 21mm - 2.49;
- The lifting force must be applied only vertically;
- Hole edges must be rounded and sanded;

EcoCocon Principal Details	Ref. no. RD-LP-02	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

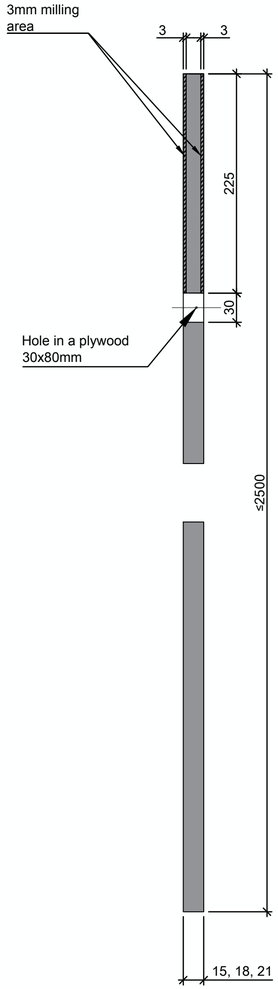
© EcoCocon

Plywood for Lifting. PL02

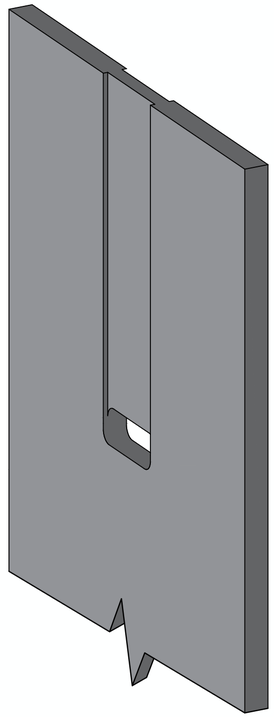
Plywood for lifting
Used next to the L, C, S Panels
when on both sides
M 1:5



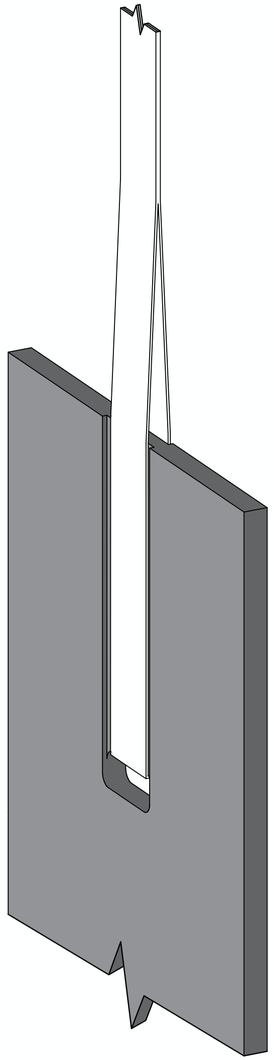
1-1
M 1:5



Plywood for lifting
M 1:5



Plywood for lifting
in use with a strap
M 1:5



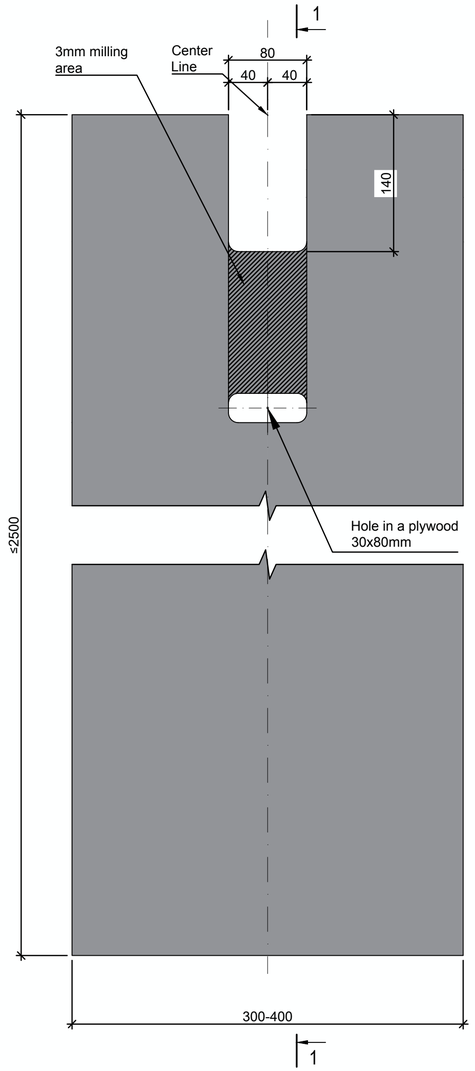
NOTE:
- Maximum load in tonnes by unit when plywood: 15mm - 1.26; 18mm - 1.67; 21mm - 2.07;
- The lifting force must be applied only vertically;
- Hole edges must be rounded and sanded;

EcoCocon Principal Details	Ref. no. RD-LP-03	Drawn: Vitalij Narušević	Rev: 0	Date: 20.01.2026

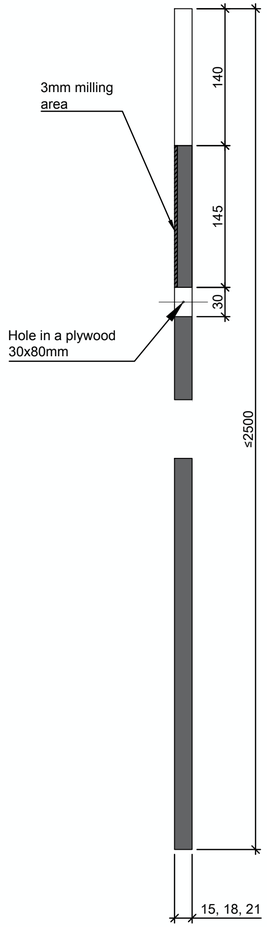
© EcoCocon

Plywood for Lifting. PL03

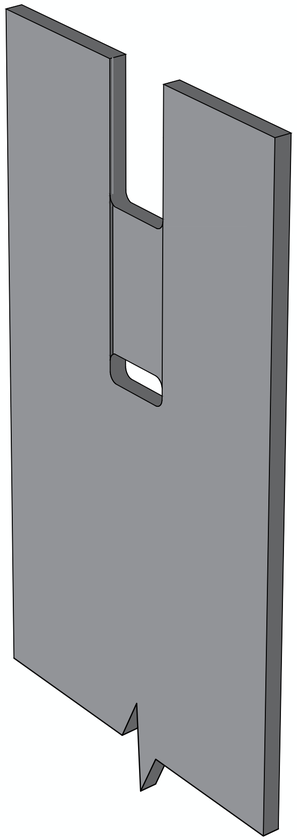
Plywood for lifting
Used next to the L, C, S Panels
on one side and P, B, I panel on other side
M 1:5



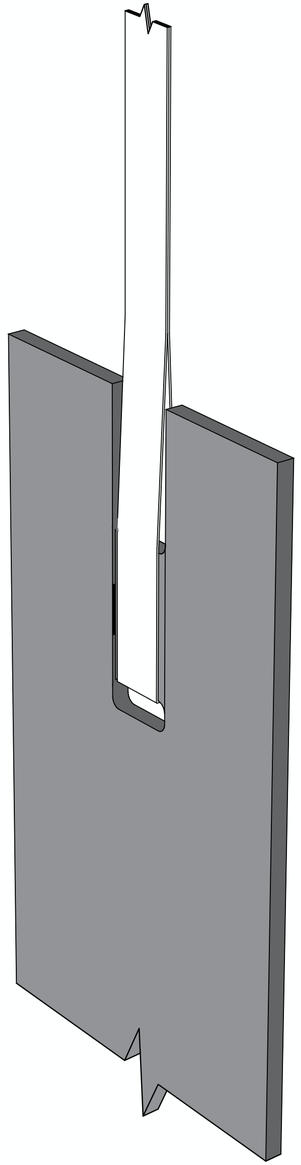
1-1
M 1:5



Plywood for lifting
M 1:5



Plywood for lifting
in use with a strap
M 1:5



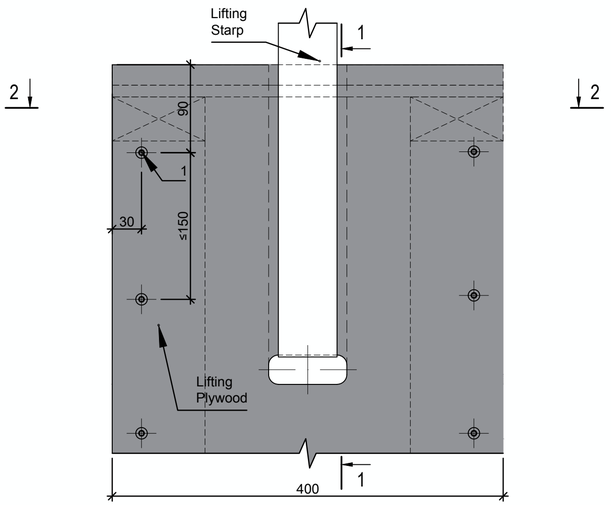
NOTE:
- Maximum load in tonnes by unit when plywood: 15mm - 1.69; 18mm - 2.09; 21mm - 2.49;
- The lifting force must be applied only vertically;
- Hole edges must be rounded and sanded;

EcoCocon Principal Details	Ref. no. RD-LP-04	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

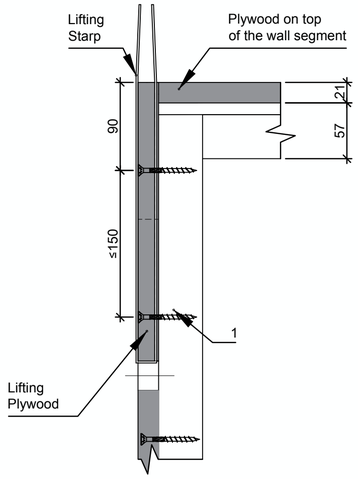
© EcoCocon

Plywood for Lifting. PL04

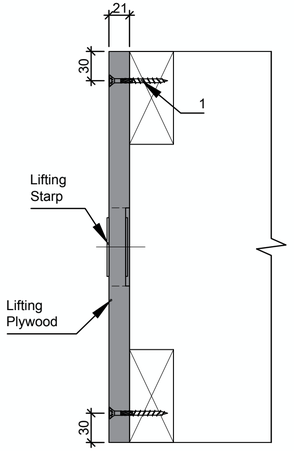
PL-02
M 1:5



1-1
M 1:5



2-2
M 1:5



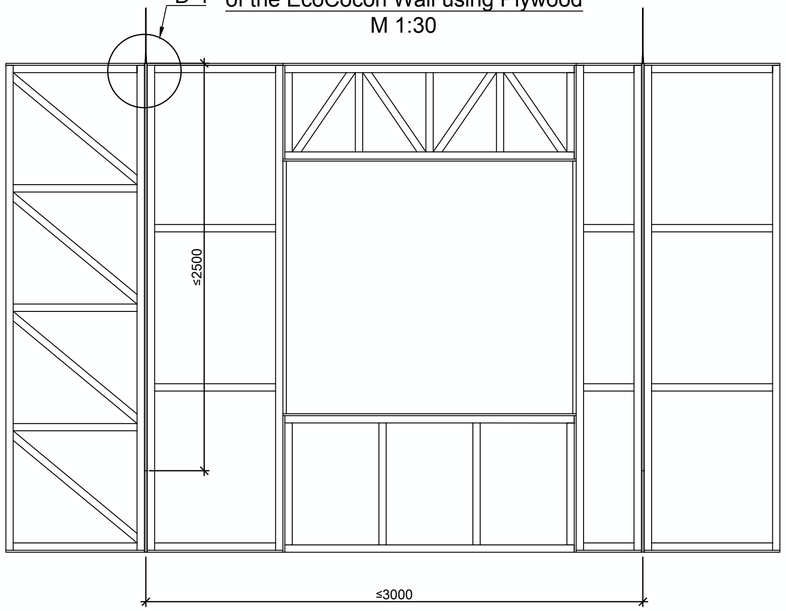
Screws with partial thread:
1 - Countersunk head 60 6,0 x 60mm, TX30;

EcoCocon Principal Details	Ref. no. RD-CO-P/LP-01	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

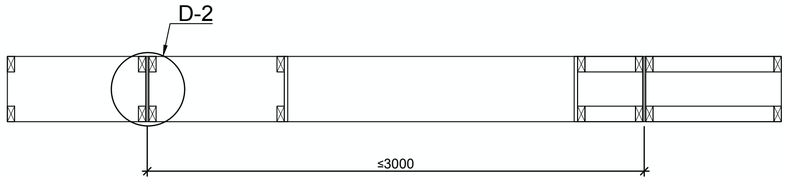
© EcoCocon

PL01 way of use

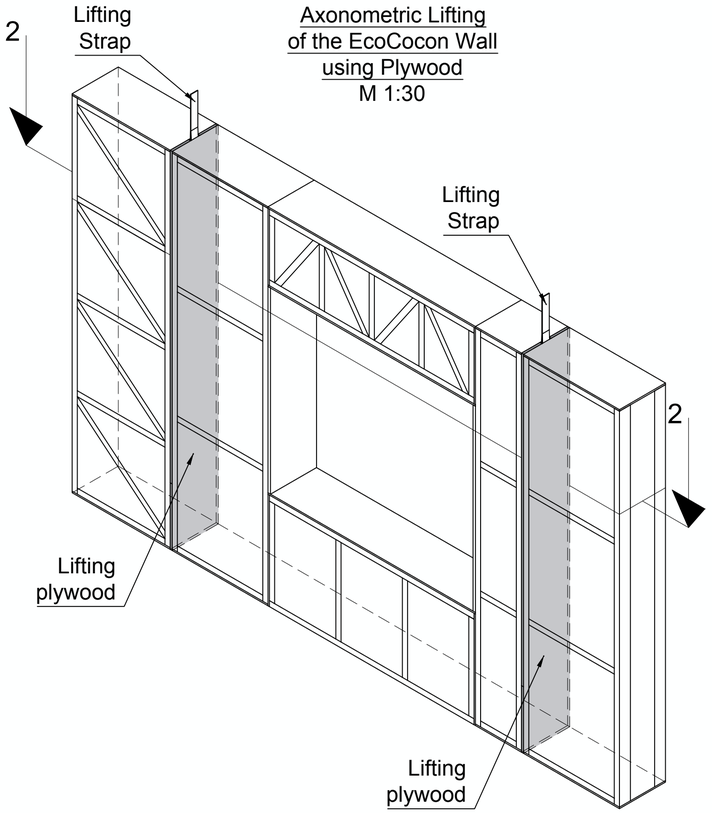
Front View Lifting
of the EcoCocon Wall using Plywood
M 1:30



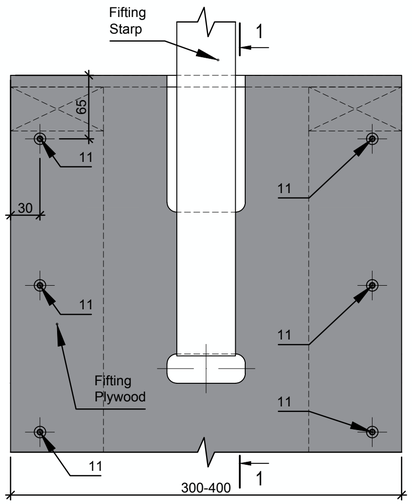
Cross-section View 2-2
Lifting of the EcoCocon Wall using Plywood
M 1:30



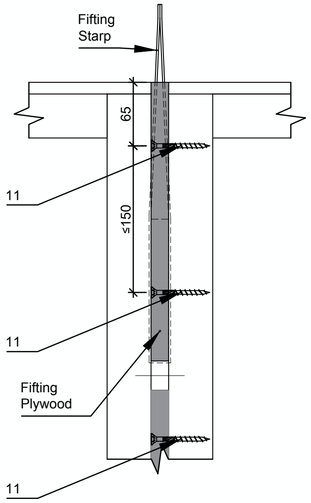
Axonometric Lifting
of the EcoCocon Wall
using Plywood
M 1:30



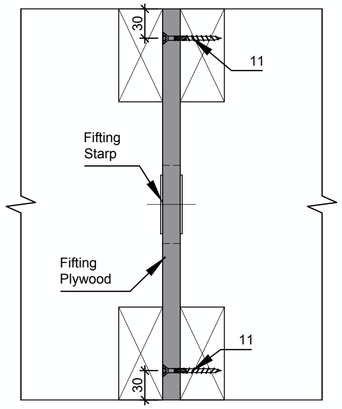
D-1
M 1:5



D-1, 1-1
M 1:5



D-2
M 1:5



Screws in use during assembly:
11 - Countersunk head 60 6,0 x 60mm, TX30;

EcoCocon Principal Details	Ref. no. RD-CO-P/LP-02	Drawn: Vitalij Naruševič	Rev: 0	Date: 20.01.2026

© EcoCocon

Wall Assembly Lifting Plywood

Annex 2

Architectural Details

Architectural Details

This chapter shows different typical details, which may be modified in some countries due to national regulations. Judgment and responsibility rest with the engineer.

Refer to DWG details for download on website

Passivhaus certified details

Several details of the EcoCocon straw wall system were developed to meet the Passive House (PH) standards.

Certified in April 2016: PH details including Psi values (thermal bridge calculations) and confirm the validity of the airtight layer concept.

Passive House certification documentation available on website:

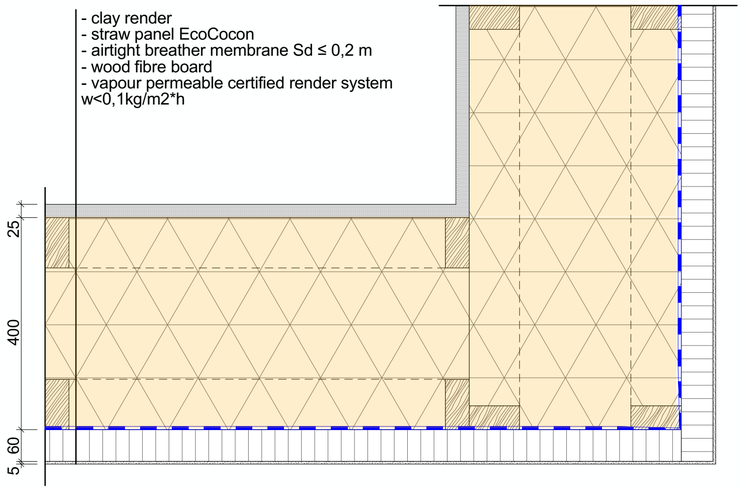
- Certificate - Certified Passive House Component
- PH Certification Report
- Passive House Standard Details (PDF)

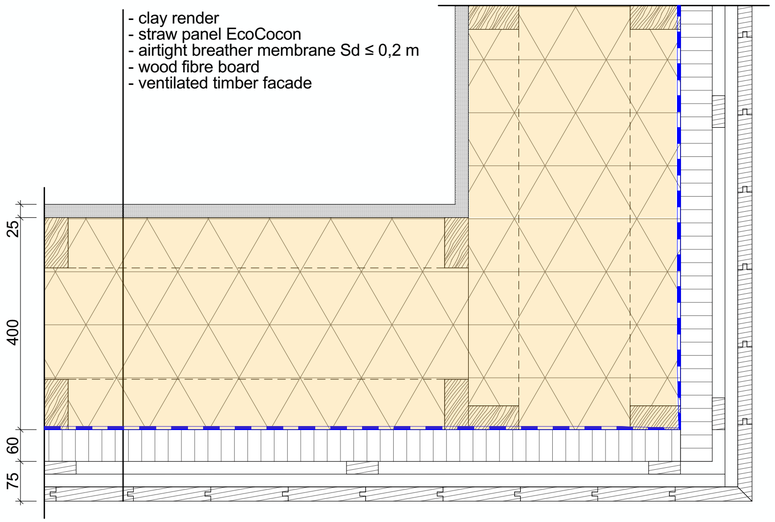
! An EcoCocon building is not automatically a Passive house. It has to be designed and verified with a PHPP calculation.



External Wall - Internal Corner.

Thermal bridge calculated -0.089 W/mK





Ecococon Straw panel

Wood - structural

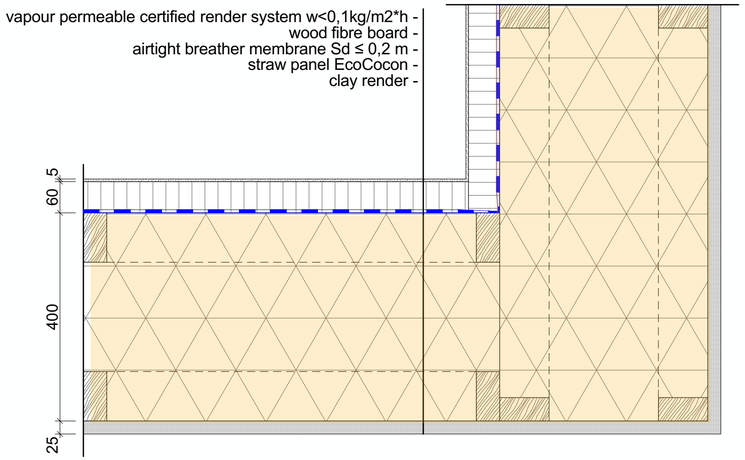
Wood fibre board

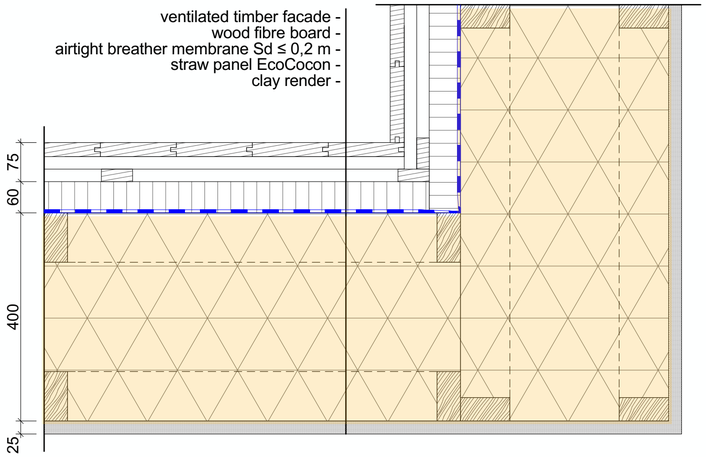
Wood

DETAIL - CORNER

External Wall - External Corner.

Thermal bridge calculated 0.034 W/mK





Ecococon Straw panel

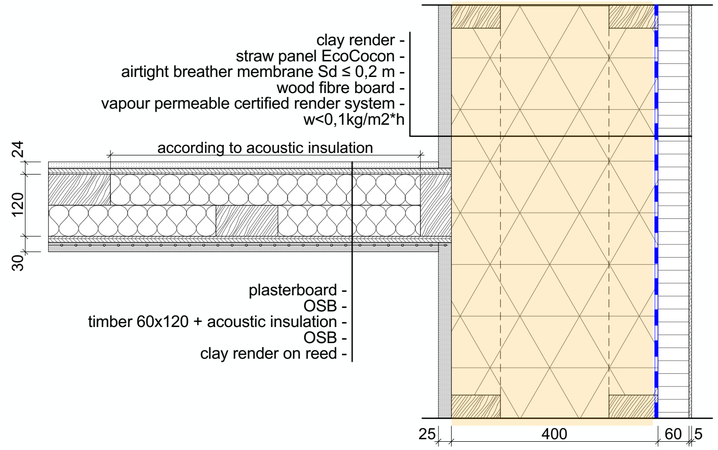
Wood fibre board

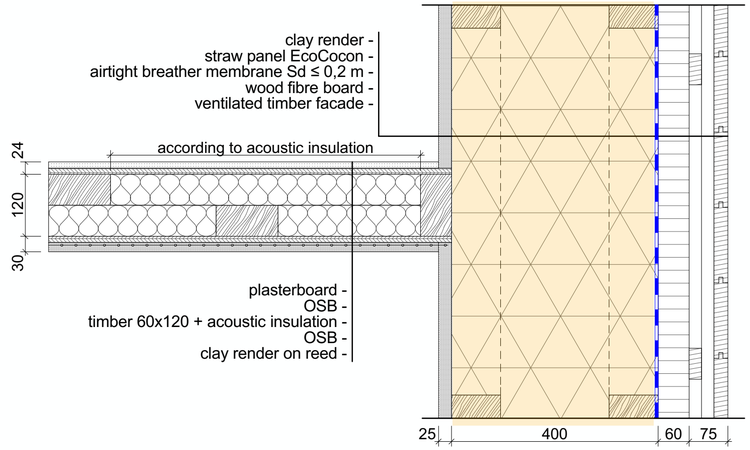
Wood - structural

Wood

External Wall - Internal Wall

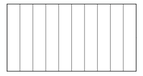
Thermal bridge calculated -0,001 W/mK



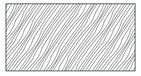




Ecococon Straw panel



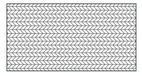
Wood fibre board



Wood - structural



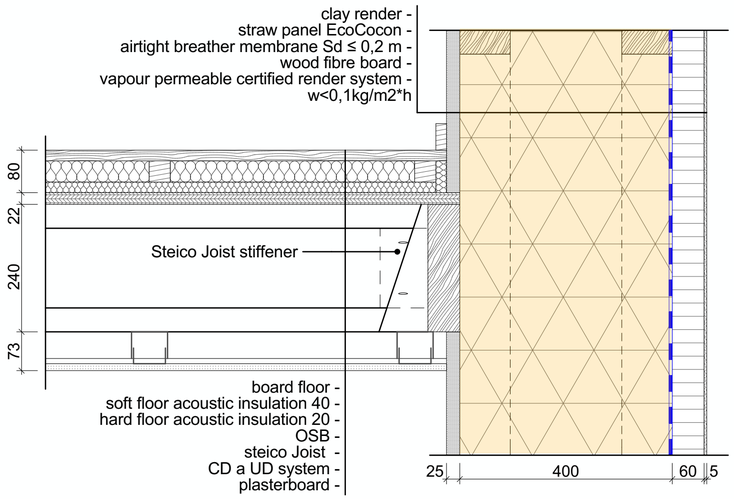
Wood

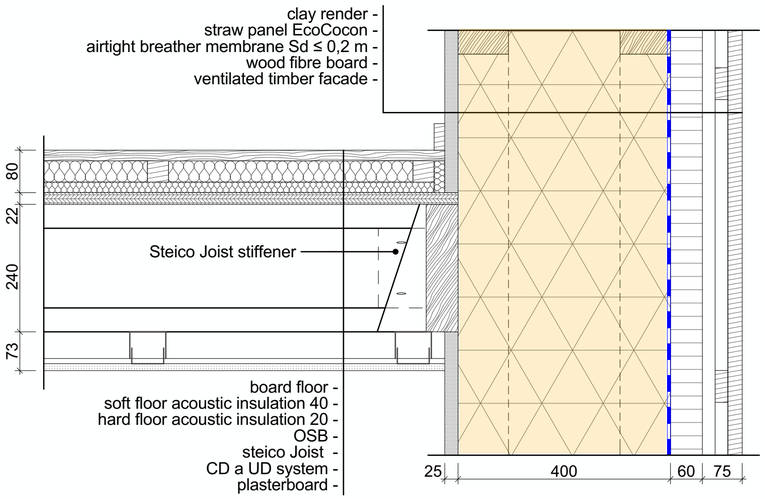


OSB / plywood

External Wall - Floor

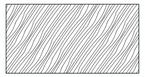
Thermal bridge calculated 0,007 W/mK



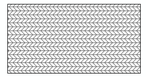




Ecococon Straw panel



Wood - structural



OSB / plywood



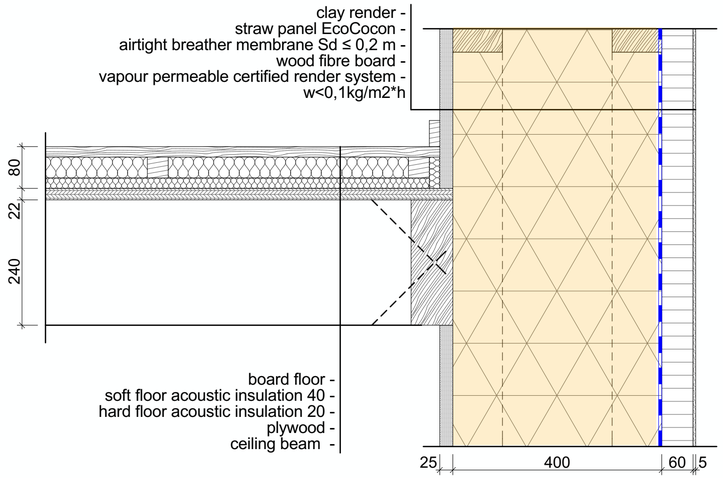
Wood fibre board

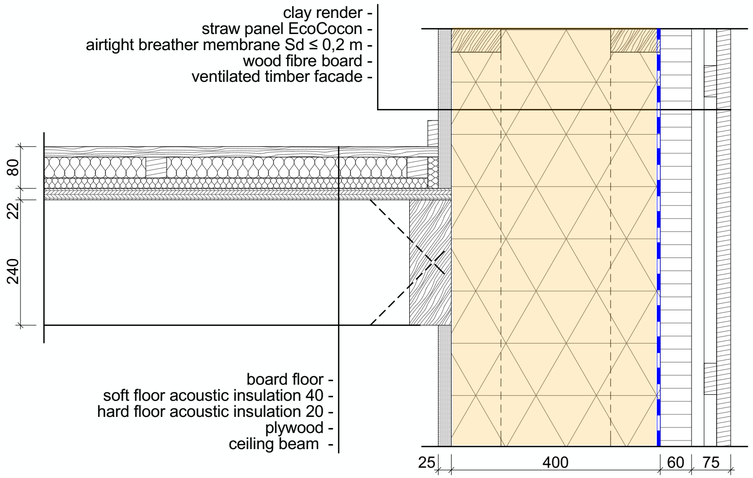


Wood

DETAIL - FLOOR

External Wall - Floor





Ecococon Straw panel

Wood fibre board

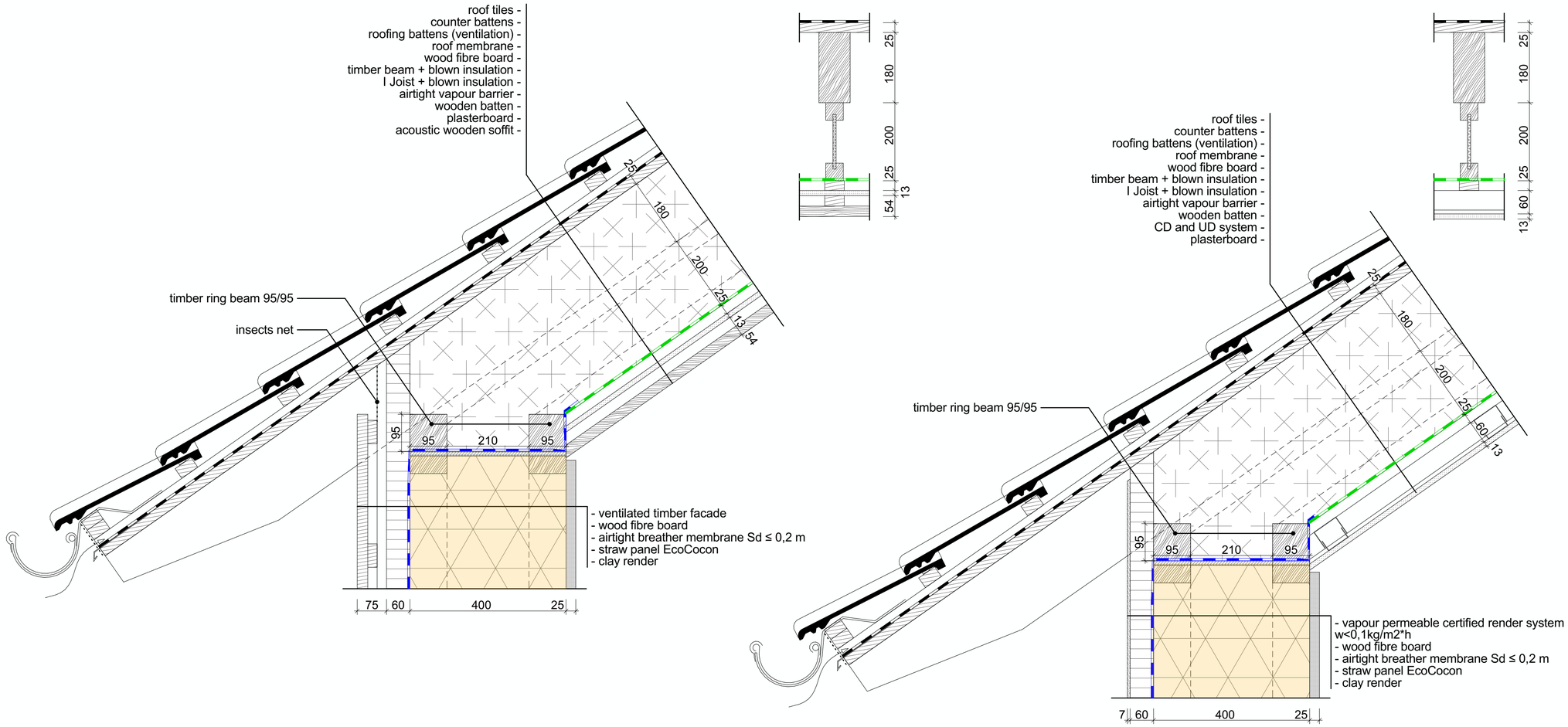
Wood - structural

Wood

OSB / plywood

External Wall - Roof Eaves (Rafters)

Thermal bridge calculated -0,030 W/mK



Ecococon Straw panel

Wood fibre board

Wood - structural

OSB / plywood

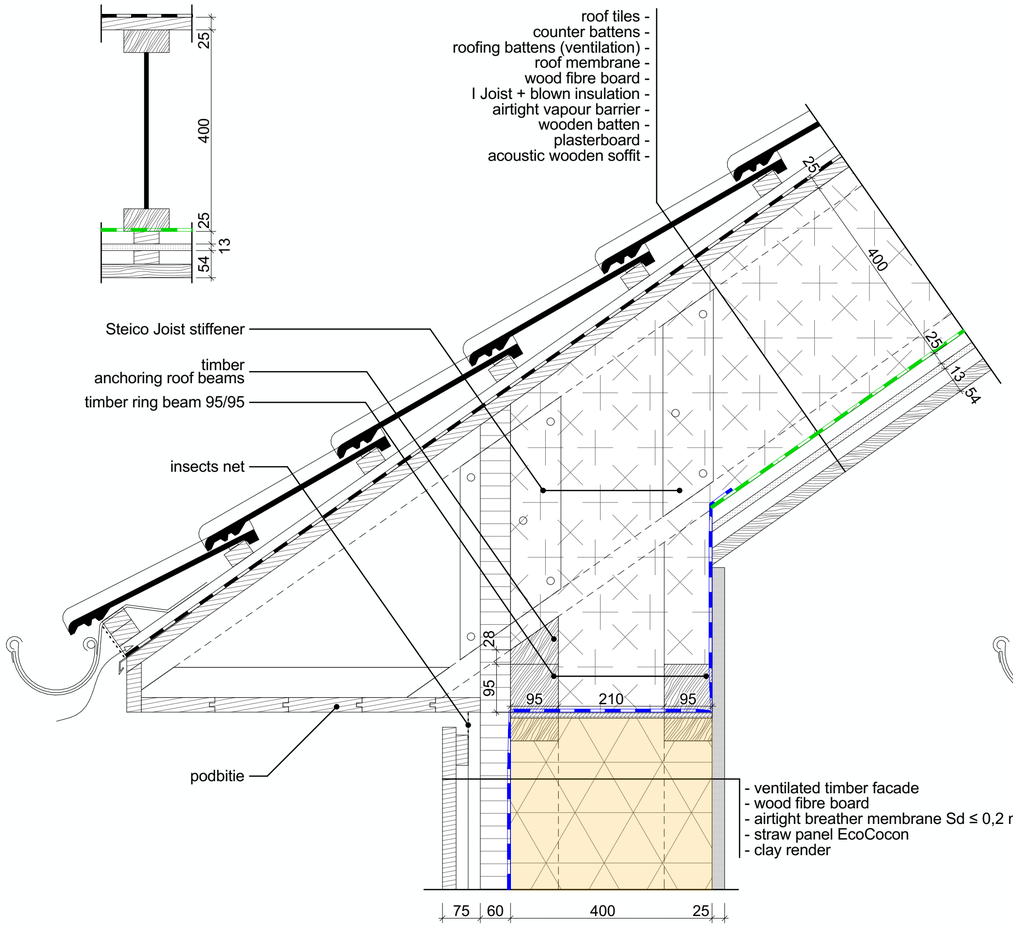
Insulation - blown

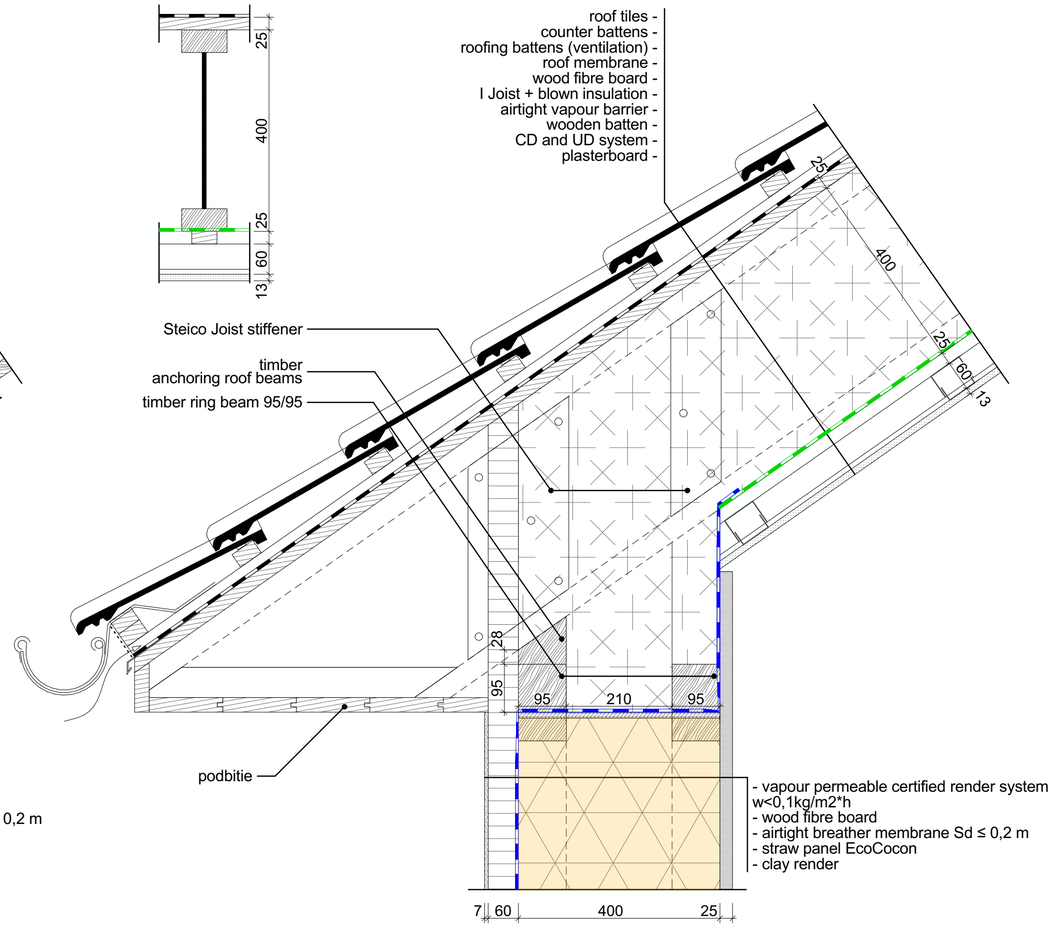
EPS

Wood

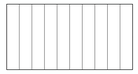
External Wall - Roof Eaves (I- beam)

Thermal bridge calculated -0,030 W/mK

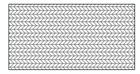


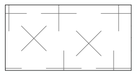


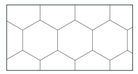

Ecococon Straw panel


Wood fibre board


Wood - structural


OSB / plywood

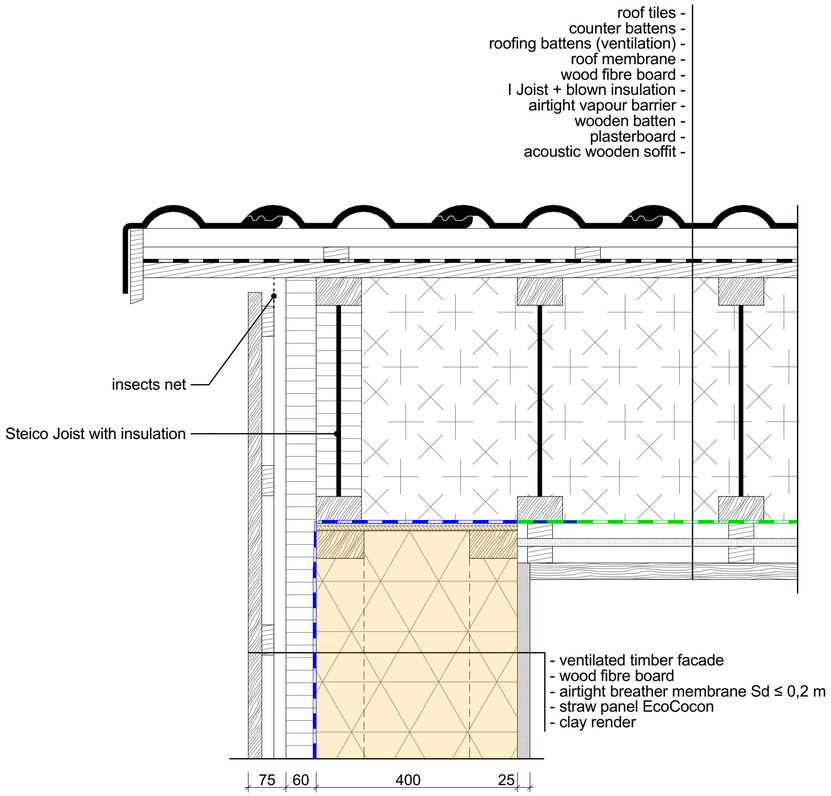

Insulation - blown

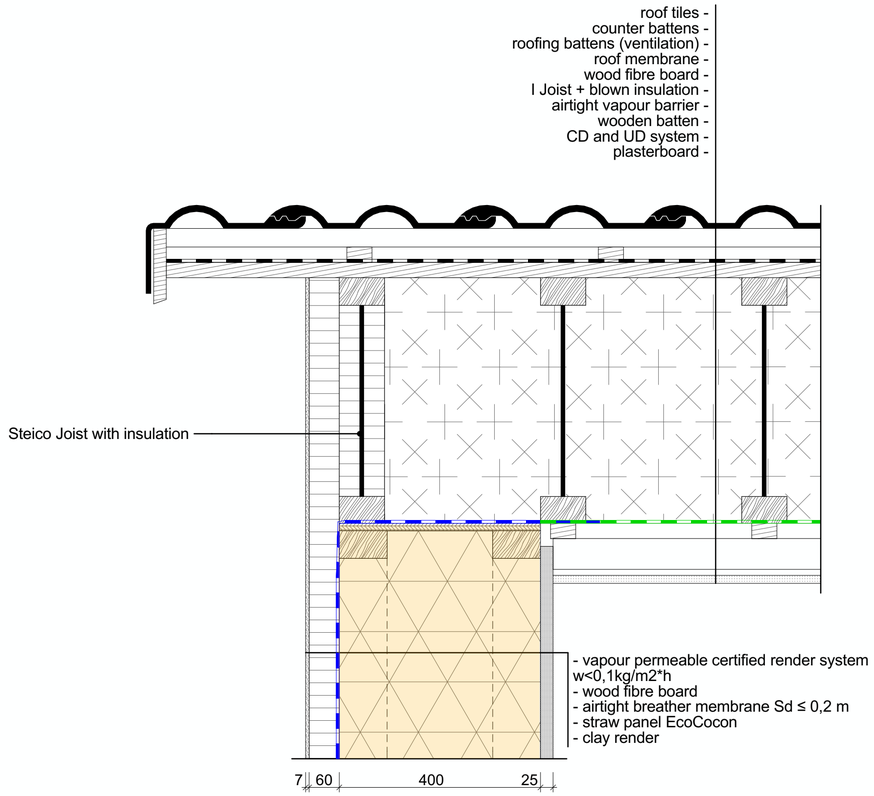

EPS


Wood

External Wall - Roof Verge (I- beam)

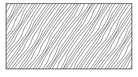
Thermal bridge calculated -0,071 W/mK

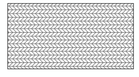


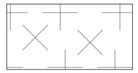


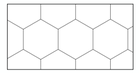

Ecococon Straw panel


Wood fibre board


Wood - structural


OSB / plywood

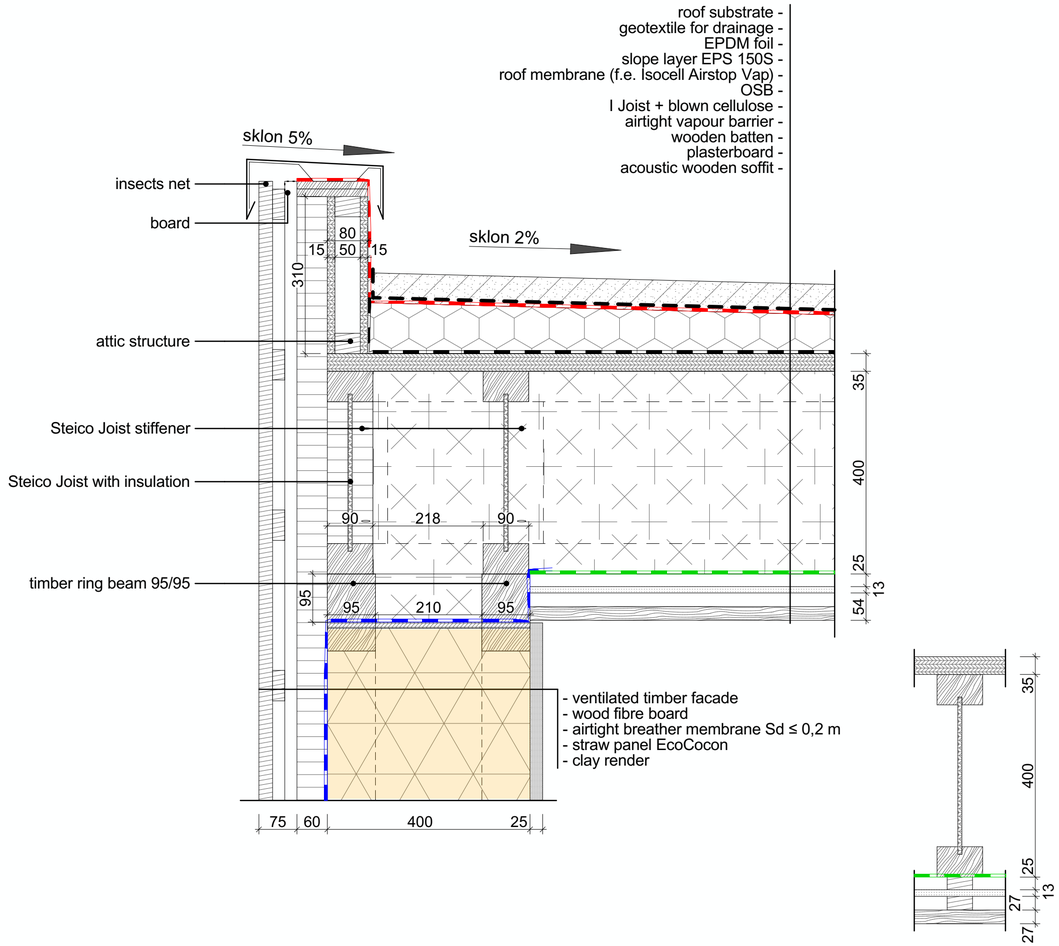

Insulation - blown

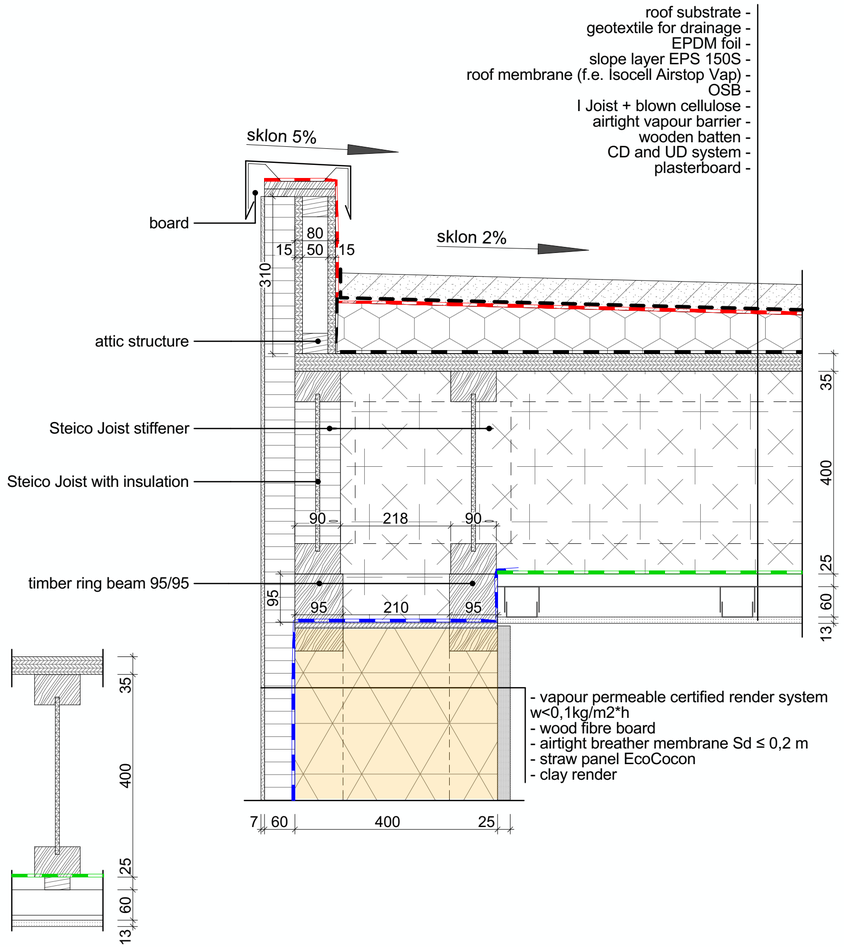

EPS

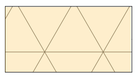

Wood

External Wall - Roof Verge (I- beam)

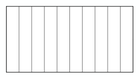
Thermal bridge calculated -0,071 W/mK



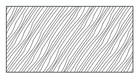




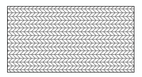
Ecococon Straw panel



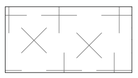
Wood fibre board



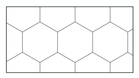
Wood - structural



OSB / plywood



Insulation - blown



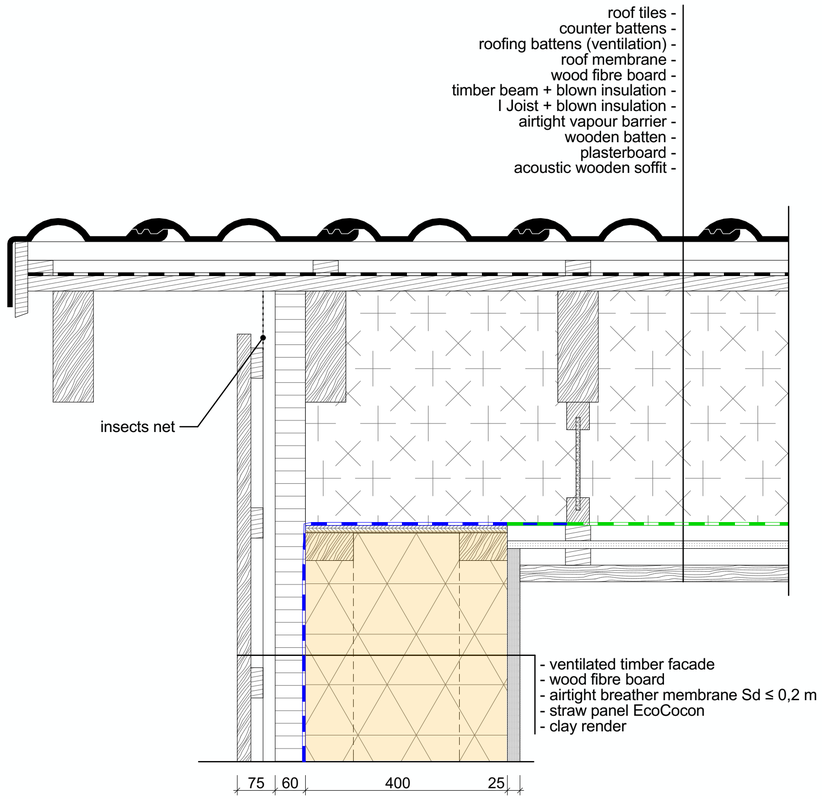
EPS

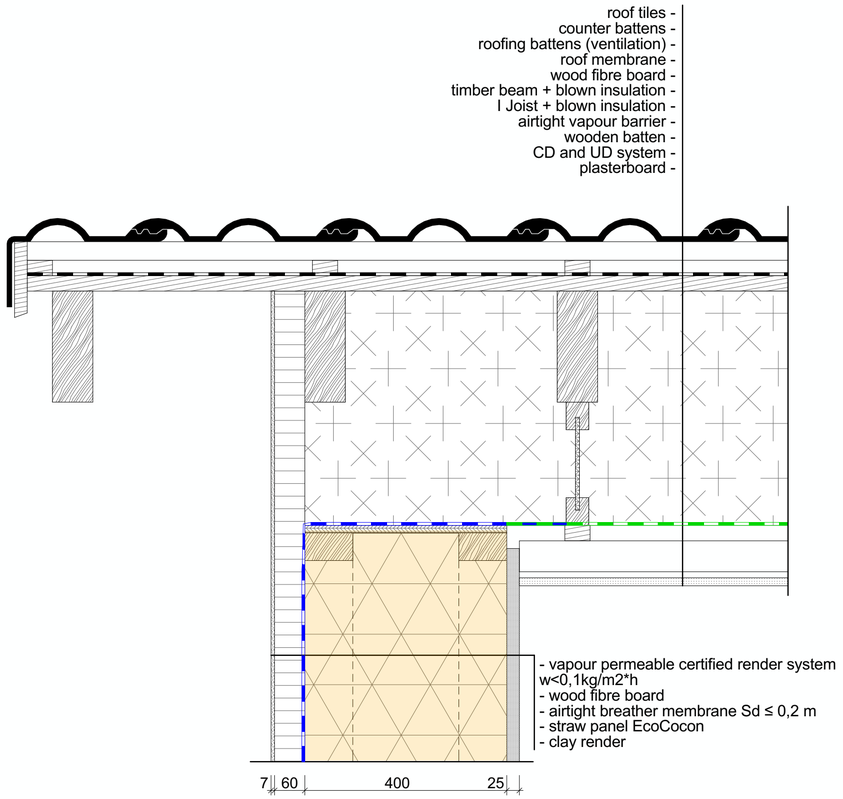


Wood

External Wall - Roof Verge

Thermal bridge calculated -0,071 W/mK





Ecococon Straw panel

Wood fibre board

Wood - structural

OSB / plywood

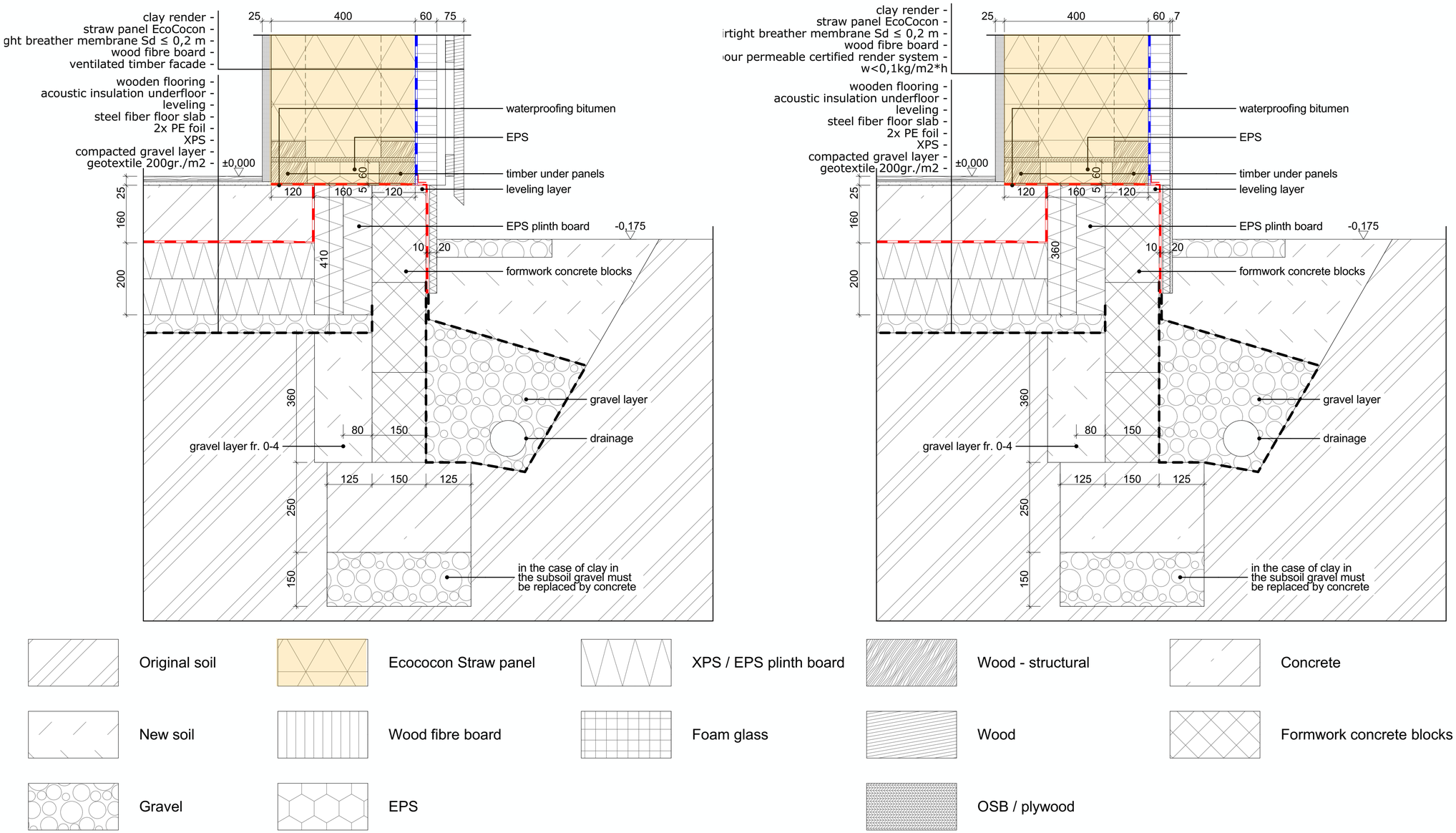
Insulation - blown

EPS

Wood

Strip and Slab Foundation - External Wall

Thermal bridge calculated -0.059 W/mK



Original soil

Ecococon Straw panel

XPS / EPS plinth board

Wood - structural

Concrete

New soil

Wood fibre board

Foam glass

Wood

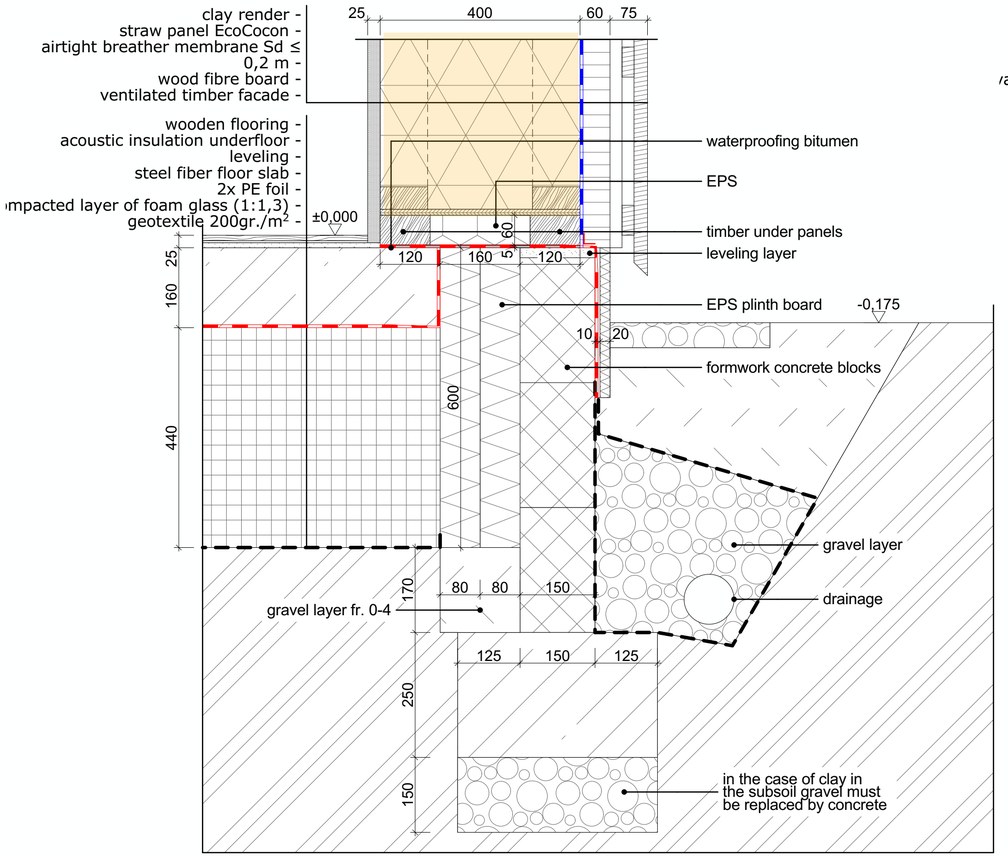
Formwork concrete blocks

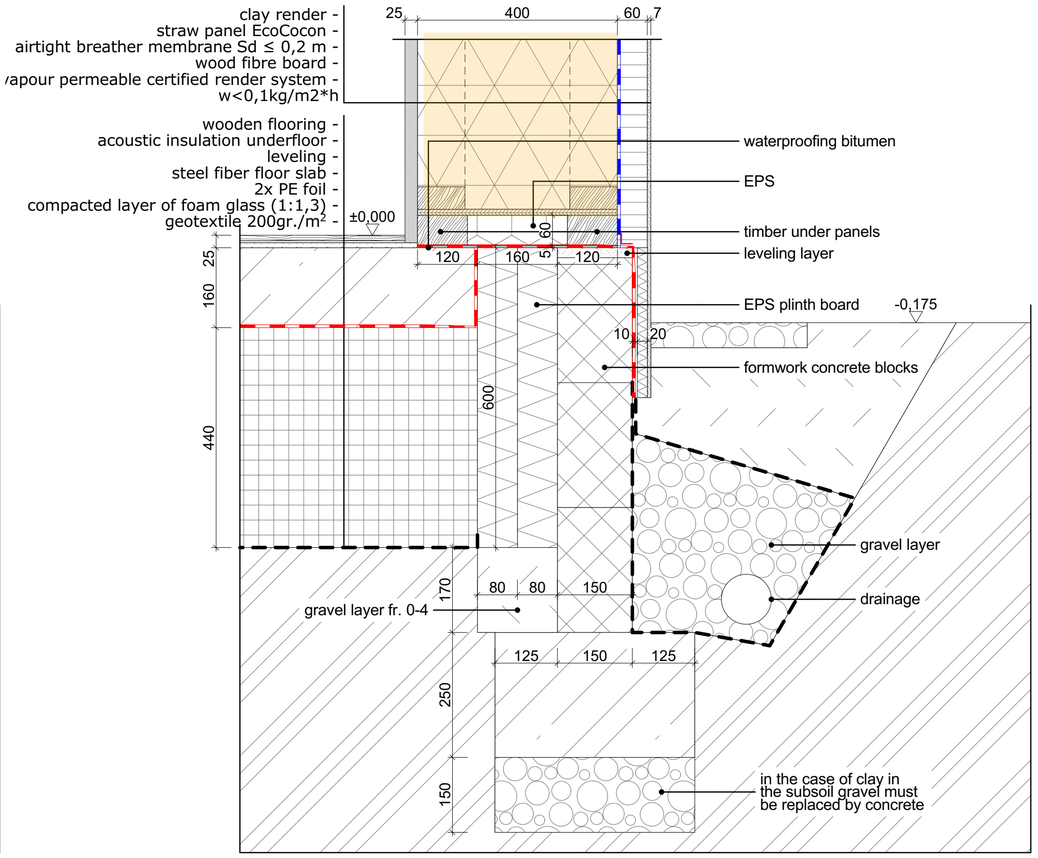
Gravel

EPS

OSB / plywood

Strip and Slab Foundation - External Wall





Original soil

Ecococon Straw panel

XPS / EPS plinth board

Wood - structural

Concrete

New soil

Wood fibre board

Foam glass

Wood

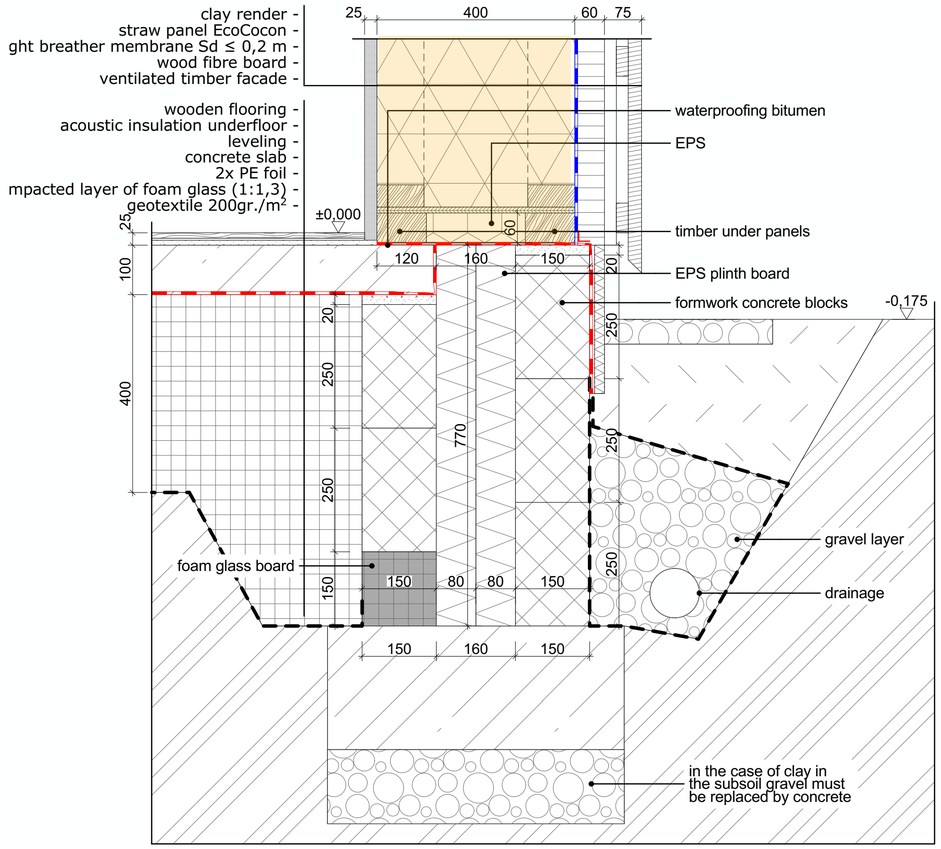
Formwork concrete blocks

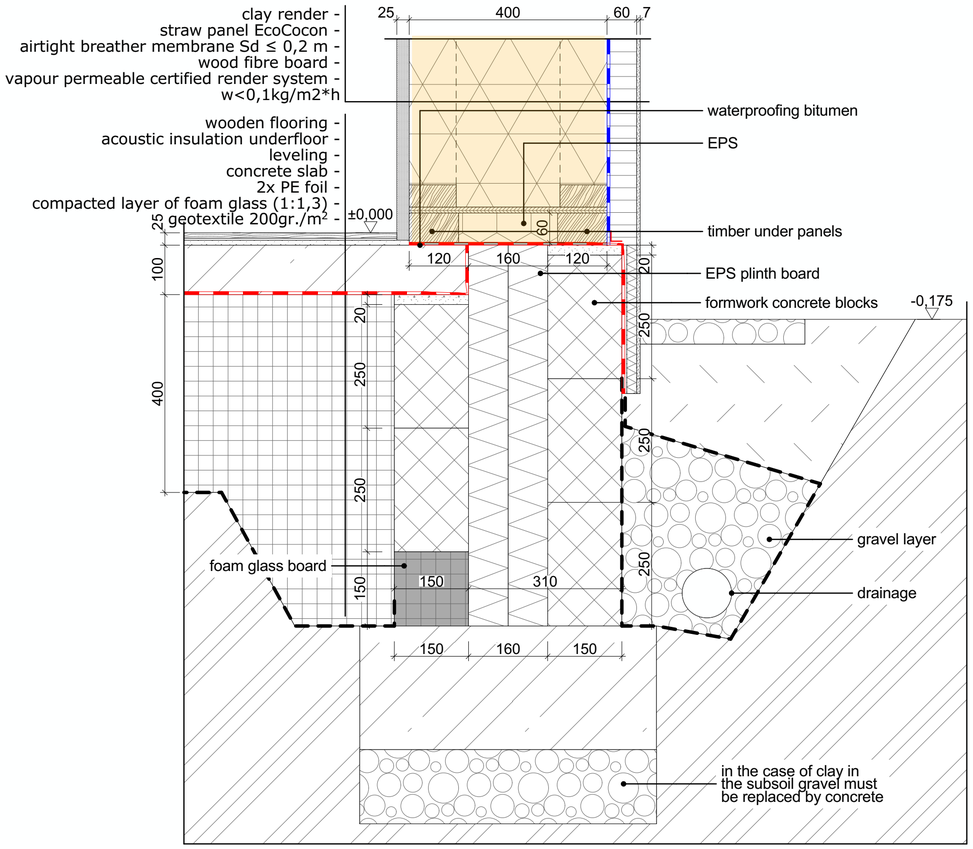
Gravel

EPS

OSB / plywood

Sandwich Strip Foundation - External Wall





Original soil

New soil

Gravel

Ecococon Straw panel

Wood fibre board

EPS

XPS / EPS plinth board

Foam glass

Wood - structural

Wood

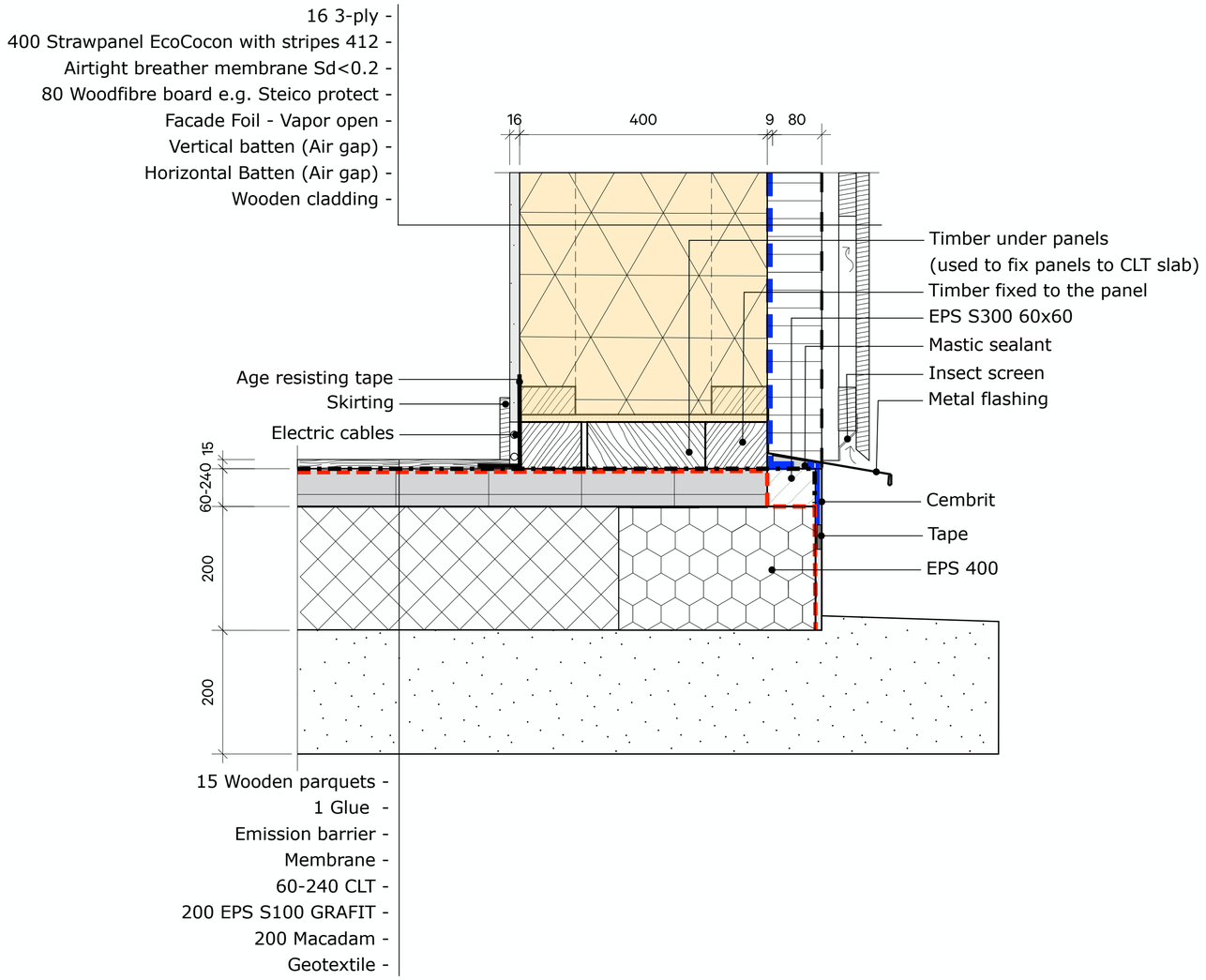
OSB / plywood

Concrete

Formwork concrete blocks

DETAIL - INSULATED FOUNDATION SYSTEM (KLARA)

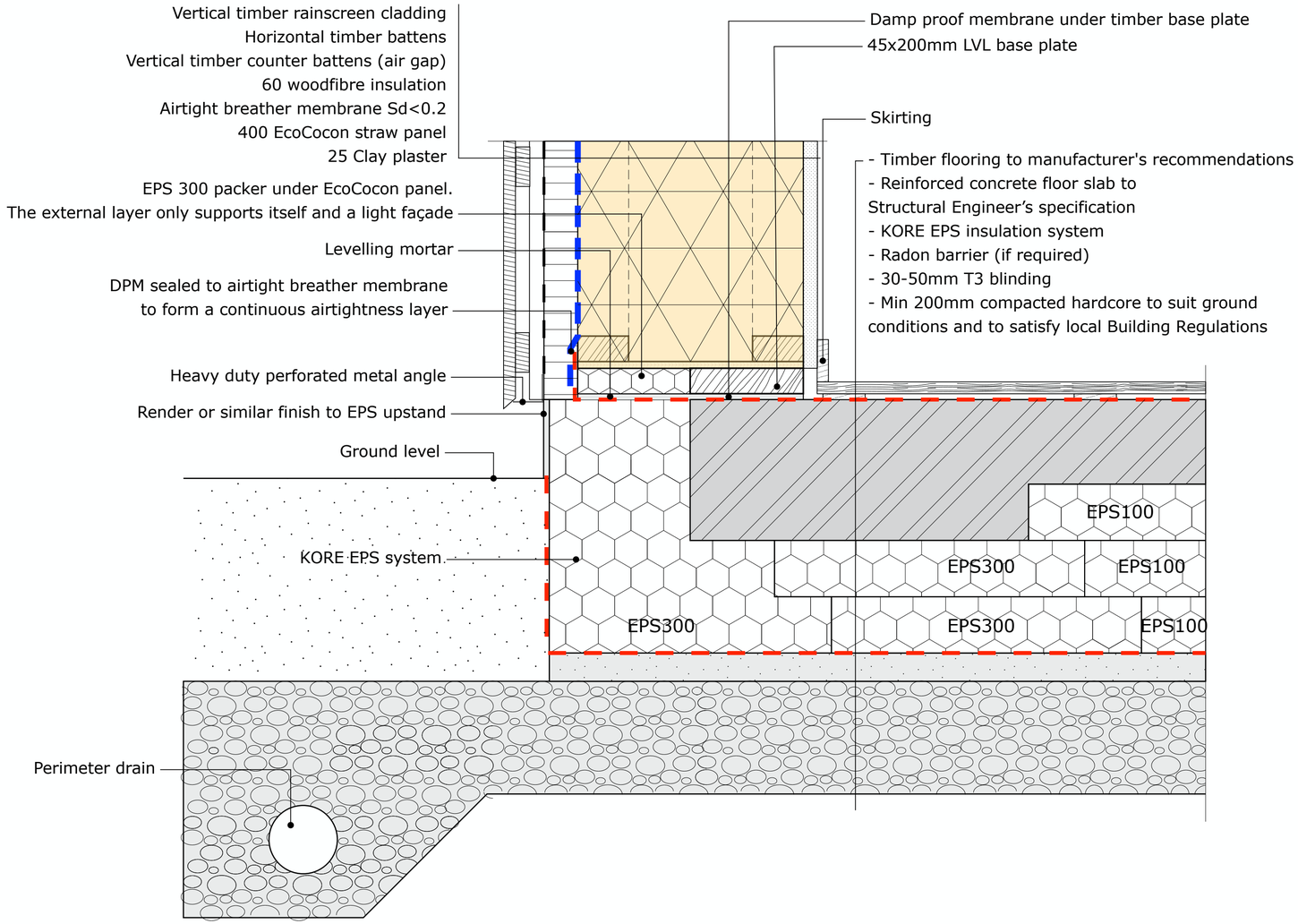
(Klara System) Floor Slab - External Wall



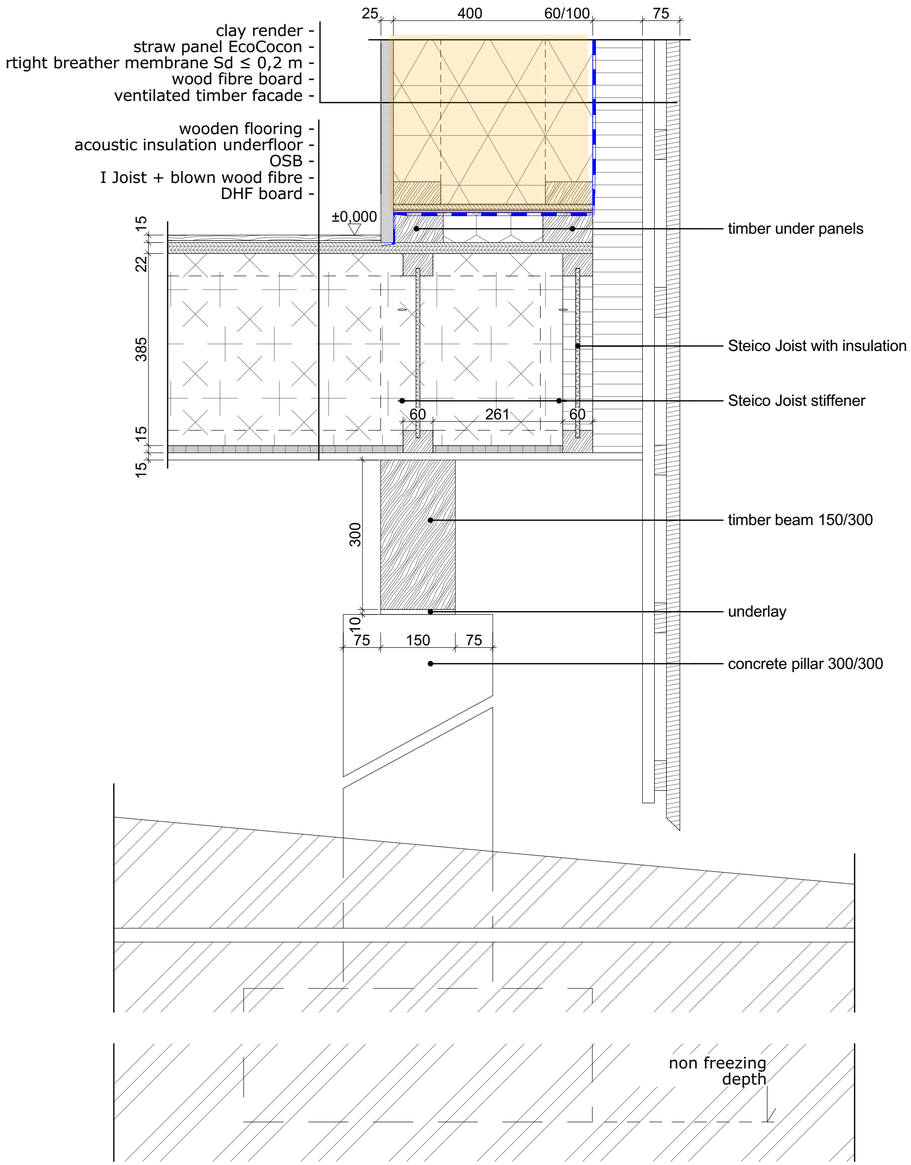
NOTE:
With this option, EcoCocon wall panels are pre-assembled in the factory with all external layers and delivered ready for installation on the foundation.

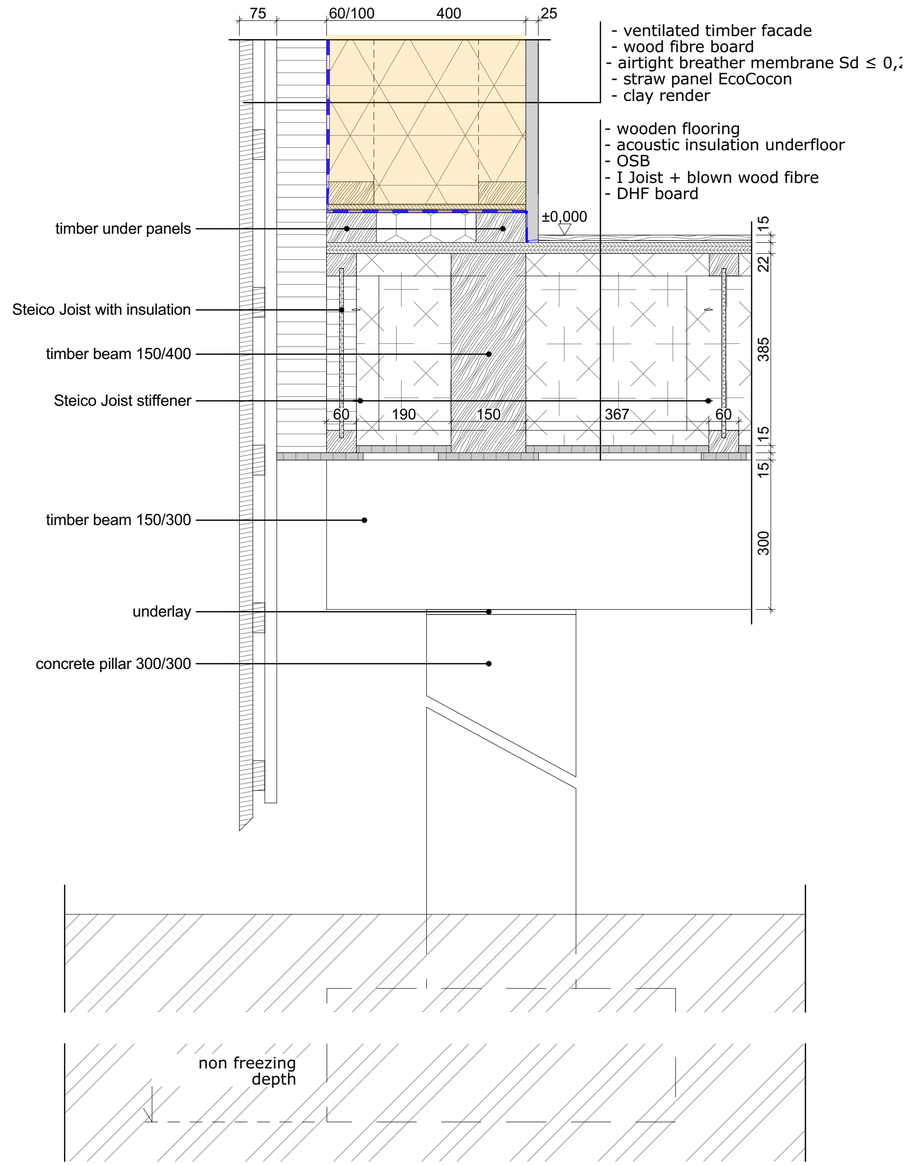
DETAIL - INSULATED FOUNDATION SYSTEM (KORE)

(KORE System) Floor Slab - External Wall



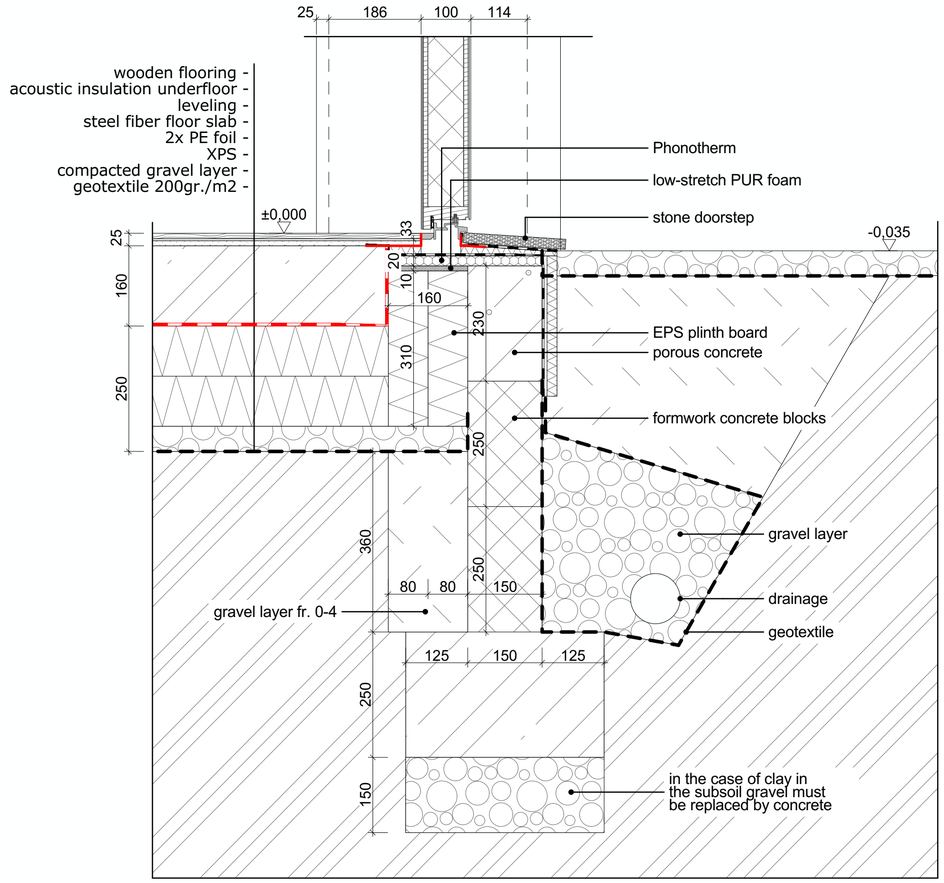
Crawl Space Foundation - External Wall





(Hoblina) Door Threshold

Thermal bridge calculated -0.020 W/mK



Original soil

Gravel

XPS / EPS plinth board

Concrete

New soil

EPS

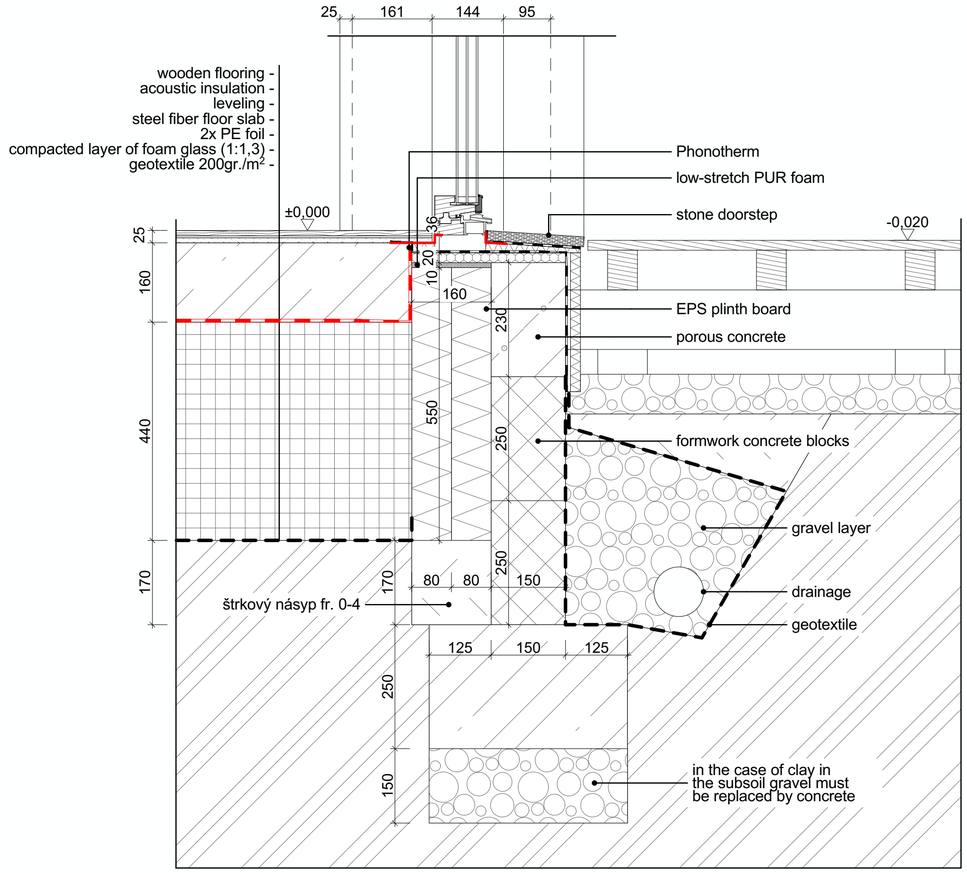
Foam glass

Formwork concrete blocks

DETAIL - DOOR

PASSIVE HOUSE
CERTIFIED PRODUCT
(HOBLINA SMARTWIN)

(Hoblina Smartwin) Terrace Door Threshold



Original soil

New soil

Gravel

EPS

XPS / EPS plinth board

Foam glass

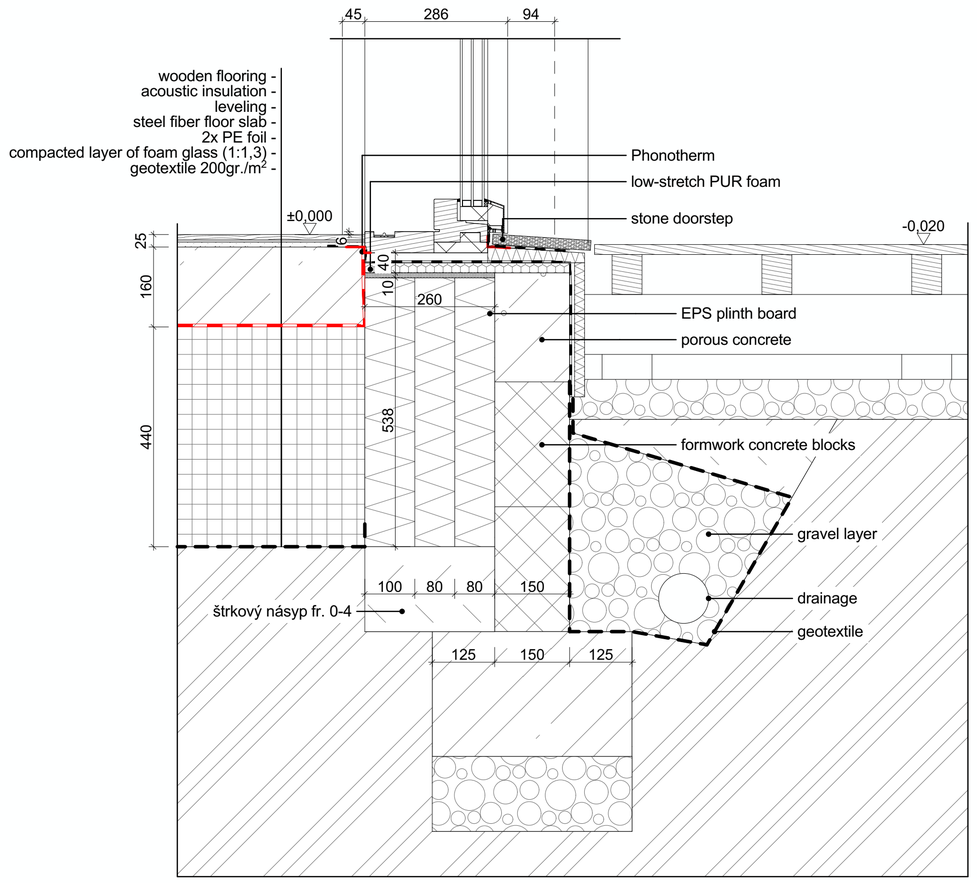
Concrete

Formwork concrete blocks

DETAIL - DOOR

PASSIVE HOUSE
CERTIFIED PRODUCT
(HOBLINA SMARTWIN)

(Hoblina Smartwin) Sliding Terrace Door Threshold



Original soil

New soil

Gravel

EPS

XPS / EPS plinth board

Foam glass

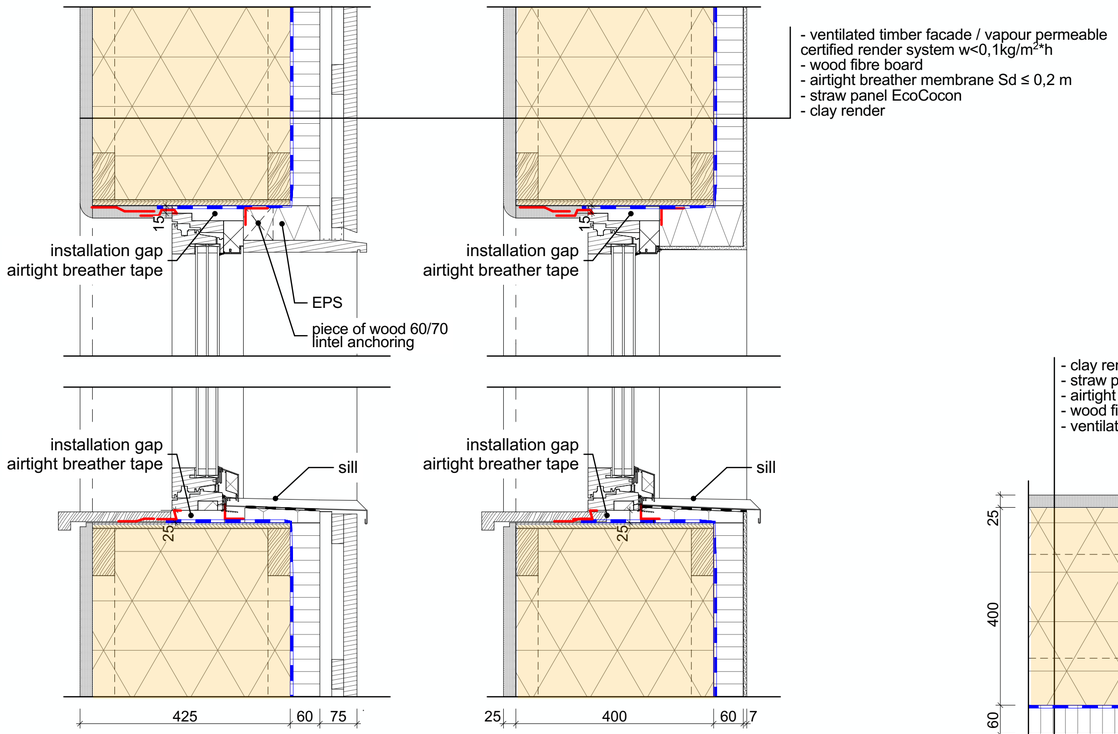
Concrete

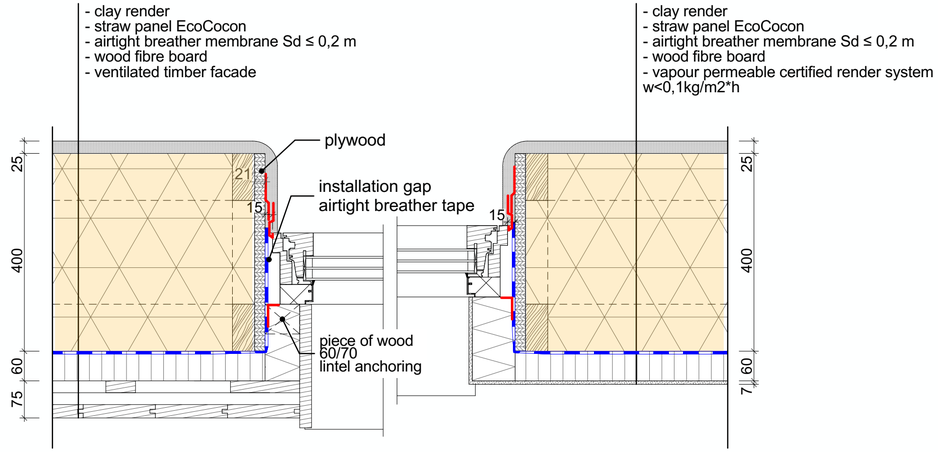
Formwork concrete blocks

DETAIL - WINDOW

PASSIVE HOUSE
CERTIFIED PRODUCT
(HOBLINA SMARTWIN)

(Hoblina Smartwin) Windows - External Wall





Ecococon Straw panel

EPS

Wood - structural

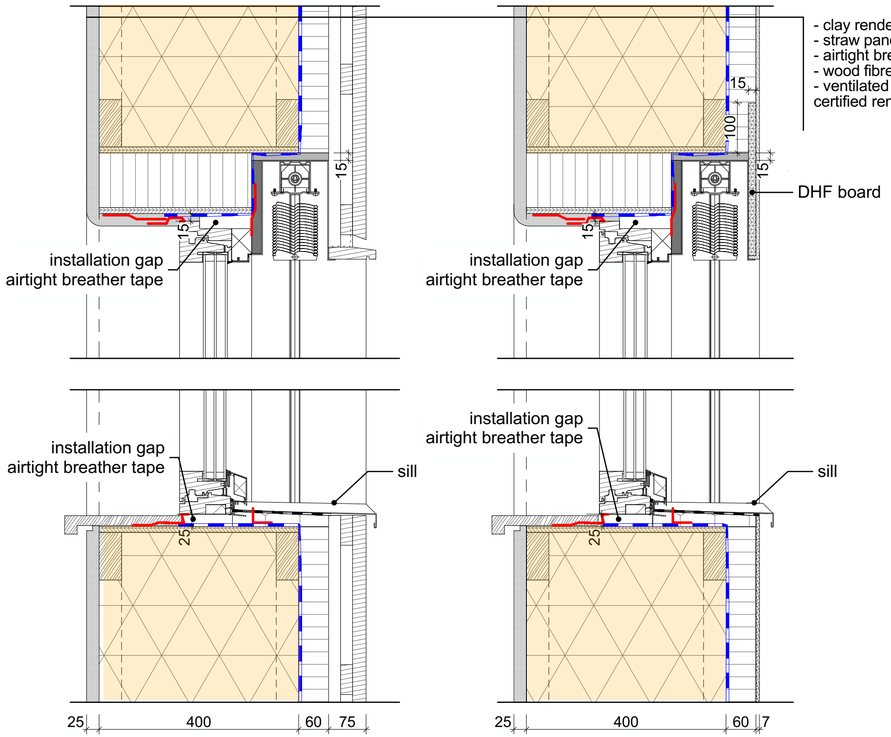
Wood fibre board

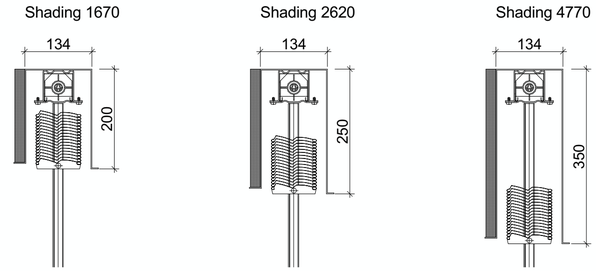
XPS / EPS plinth board

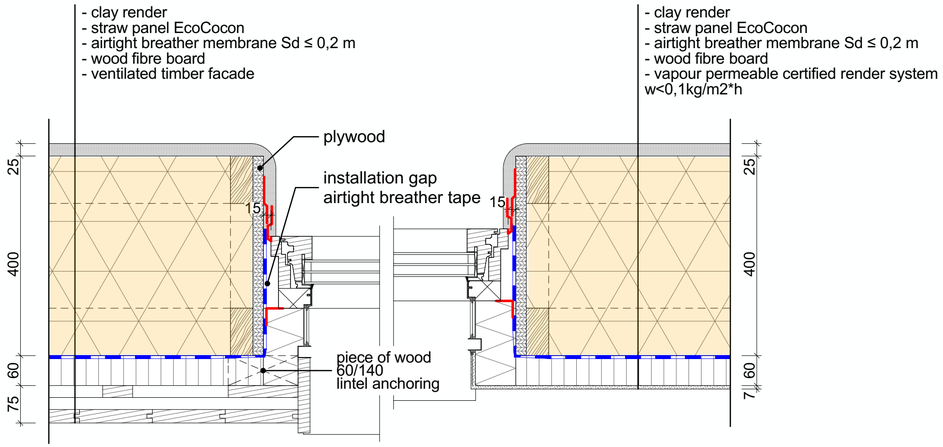
Wood

DETAIL - WINDOW
PASSIVE HOUSE
CERTIFIED PRODUCT
(HOBLINA SMARTWIN)

(Hoblina Smartwin) Window with Shading - External Wall







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For concealed shading, it is essential to address this at the beginning of the Panel Project creation process:
1) either raise the opening and add a wood-fiber board with plywood to create fixing space for the window and shading,
2) or require narrow lintels/box elements that provide space for shading while allowing direct window fixing.

Ecococon Straw panel
EPS
Wood - structural
Wood fibre board
XPS / EPS plinth board
Wood