

eco 
cocon

 **ecological**
BUILDING SYSTEMS

**Together, we are building
a sustainable way of living
that creates a safer future
for the generations to come.**



A wall system designed by nature

EcoCocon® is a construction system based on the Cradle to Cradle philosophy, making the best of natural materials – timber, straw and clay – while ensuring maximum indoor comfort and energy-efficiency.

CARBON-STORING CONSTRUCTION

98% natural renewable materials sequester tons of CO₂ in each project.

OPTIMAL HUMIDITY

Directly applied interior clay plaster as a natural humidity regulation system.

INDOOR COMFORT

Excellent indoor microclimate together with great acoustic and thermal comfort.

PASSIVHAUS CERTIFIED COMPONENT

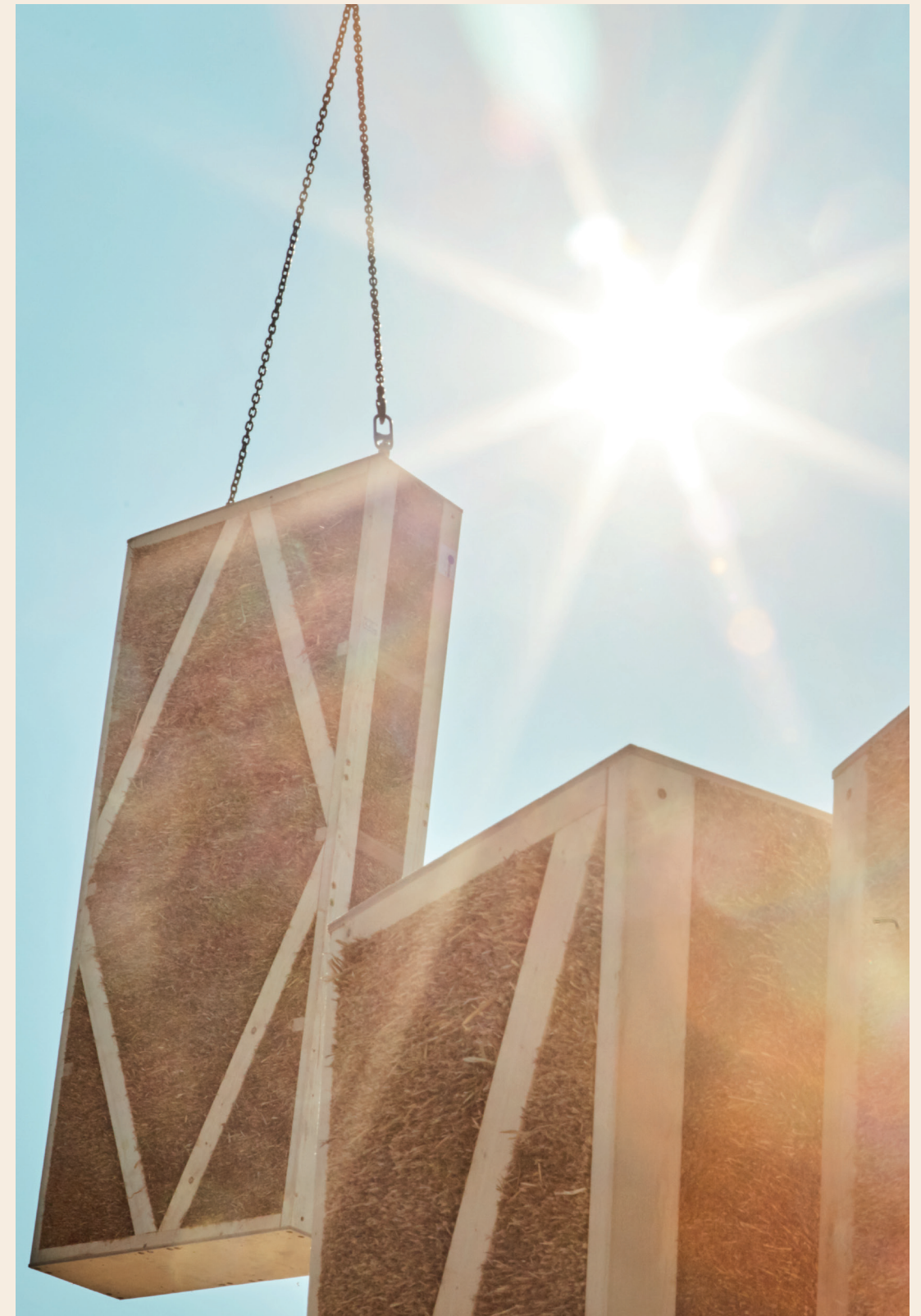
Super-insulated walls with no cold bridges and an easy-to-achieve airtightness concept.

MADE TO MEASURE

Custom-made to fit any building design – residential, educational, or commercial.

RAPID INSTALLATION

Precision-cut prefabricated panels for simple and rapid installation on site.



Wall build-up

The EcoCocon® wall system is a certified Passivhaus component. The main building blocks are structural timber-straw wall elements that are made to measure for every project.



An integral part of the system is the use of an airtight, yet diffusion-open membrane on the outside of the panels. The membrane also provides weather protection during construction.

A layer of insulating wood fibre board is fixed over the membrane. The required thickness of the board varies depending on the climate and target thermal performance. A secondary windtight membrane is installed externally to protect the insulation from weather exposure and to ensure windtightness. It can be finished with any kind of ventilated rainscreen facade.

The system is certified together with a humidity-regulating natural clay plaster on the interior side. This construction has been verified by WUFI calculation and on-site measurements. A variety of standard interior finishes are also available.

More than 30 variants of predefined wall build-ups are accessible as 3D BIM models for Revit, containing key technical parameters and facilitating the design process.

- | | |
|----------------|--|
| OUTSIDE | <ul style="list-style-type: none"> 1 Ventilated rainscreen facade 2 Pro Clima Solitex Fronta WA Windtight breathable membrane 3 Gutex 5 in 1 Multi-purpose wood fibre insulation board 4 Pro Clima Solitex Mento 3000 Reinforced airtight and breathable membrane 5 EcoCocon Wall Panel Timber structure and straw insulation |
| INSIDE | <ul style="list-style-type: none"> 6 Base clay plaster (25mm) 7 Reinforcing mesh 8 Fine clay plaster (3mm) |

Panel types and sizes

The panels are made in 1 mm increments to fit any kind of building design.

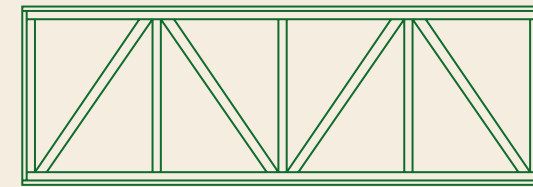


Panel types include braced panels, lintels, sills, and inclined gable wall elements. Different structural demands can be met by placing the panels closer together or by using plywood reinforced column elements.

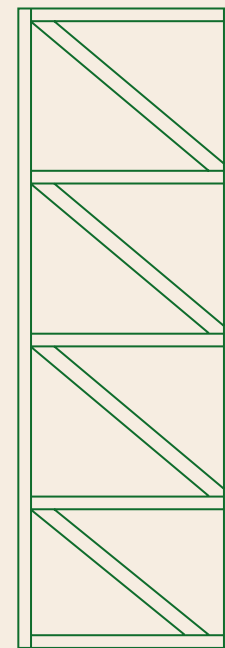
The twin stud timber frame of the panels ensures the structural capacity

for up to 6 storeys and easily supports floors, roofs or facades. The system is designed to be load-bearing without creating any thermal bridges.

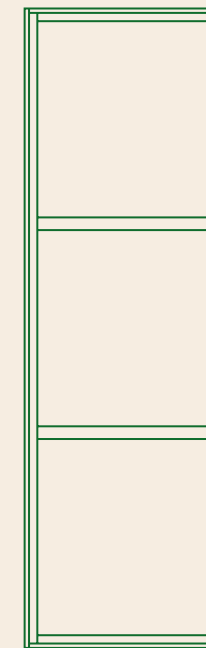
Standard panel thickness is 400 mm. 300 mm is also possible upon request.



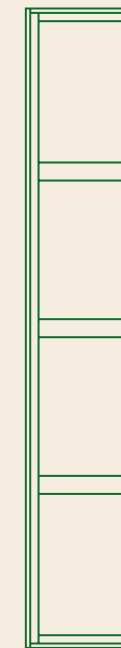
LINTEL



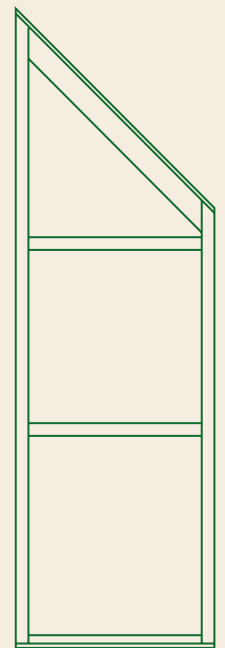
BRACED



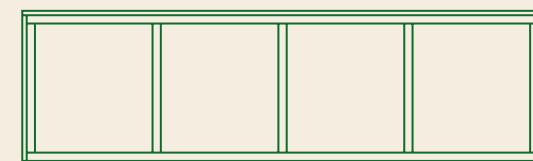
STANDARD



COLUMN



INCLINED



SILL



Technical characteristics

Characteristics for an average EcoCocon wall with 30 mm clay plaster, 400 mm timber-straw panel and 60 mm wood fibre board:

U-value	0.123 W/m ² K
Thermal conductivity	0.0645 W/mK
Fire resistance	up to 120 min (REI 120)
Flammability	E (EN 13501-1 : 2007)
Airborne sound insulation	54 dB
Vertical load-bearing capacity	up to 110 kN/m *
Precision	2 mm over 3 m length *
Average straw density	115 kg/m ³ *
CO ₂ emitted in production	2.8 kg/m ² *
CO ₂ e sequestered	97.6 kg/m ² * (400mm panels)
Assembly time	20–40 min per m ² *

* EcoCocon panels only



Regenerative design for a positive climate impact

EcoCocon is the only building component with both Passivhaus and Cradle to Cradle certifications. Making the most of renewable materials, it was created to have a minimal ecological footprint and to be safely returned to nature after use.

To protect the world's forests from over-exploitation, the system is designed to use as little wood as possible – just enough for it to be load-bearing.

An average EcoCocon panel is composed of 10% timber and 89% straw. The wood comes from sustainable forestry and the straw is sourced at local farms. Used in their raw states, the production process demands very little primary energy.

Both materials sequester large amounts of CO₂ through photosynthesis over

their lifetime. This CO₂ is then safely stored in the construction resulting in a highly positive climate impact. Panels in a typical house with an external wall area of 130 m² sequester more than 12 tons of CO₂e.

By replacing carbon-intensive materials such as concrete, bricks or polystyrene, as well as saving carbon in operations, EcoCocon's real contribution towards the climate becomes even more significant.

Comfort is the heart of our solution

The EcoCocon wall system provides superior indoor air quality, as well as exceptional thermal and acoustic comfort. It creates a healthy microclimate with even temperatures: warm in winter and cool in summer.

The timber and straw in the panels contain no glues and have not undergone any chemical treatment during the production process.

Interior clay plaster acts as an effective moisture regulator. It absorbs excess vapour in the air and releases it when levels drop, helping to keep conditions close to the optimal range*. It is a completely natural finish without any VOCs, and it offers low embodied energy and high thermal mass.

The system is airtight, yet vapour permeable. It allows excess humidity to escape and with no thermal bridges it leaves no space for draughts, mould or condensation problems that are often present in modern sealed buildings.

EcoCocon panels have an airborne sound insulation of 54 dB. This greatly exceeds the minimum standard requirements and results in exceptional acoustic comfort.

*Humidity regulating materials are not a replacement for an effective ventilation strategy.





Smooth planning process with full technical support

With more than 18 years of experience, EcoCocon's natural construction system has been used in more than 30 countries and on 3 continents.

EcoCocon combines the beauty of natural materials with the efficiency of the Passivhaus standard. Details, cost effective solutions, and building physics knowledge are all part of the package we provide.

Being able to accommodate any building design, EcoCocon ensures complete creative freedom for the architect. Predefined EcoCocon wall elements are also available in 3D BIM

models for Revit, streamlining the design process. Once the design of the building is ready, our in-house structural engineer prepares a detailed technical panel project that specifies all the panel types and sizes required for the project.

Each project is overseen by a local technical consultant that ensures smooth cooperation and provides technical support whenever required.

Are you a builder?

Raise your company profile with a highly sustainable alternative for your clients.

Provide certified quality all year round with your regular team of carpenters - no special qualifications are required.

Speed up your work on the building site with prefabricated panels or preassembled wall elements.

Provide precise quotes in advance and increase your added value.

Are you an architect?

Design quality architecture in line with the UN Sustainable Development Goals.

Create an exceptional quality of living that surpasses the expectations of the client.

Easily achieve Passivhaus standard and maximise the use of natural materials.

Have fun working with our modular elements and predesigned details.

Are you a public stakeholder?

Align your public buildings with the CO₂ emission targets and save carbon in construction as well as in operations.

Set an example for others by showcasing ultra-low energy buildings built from renewable materials.

Provide a healthy environment for your constituents in schools, nurseries, sports halls, public housing, and offices.

Use local resources and builders to keep the added value at home.

Are you a developer?

Provide higher quality at comparable costs, using efficient preassembly techniques.

Set yourself apart from the competition and increase your visibility on the market.

Dry construction with prefab elements shortens the time to completion, producing a faster return for your investment.

Create a healthy and comfortable indoor climate without the use of expensive technology.

About us

Circular Buildings: Built to Last, Designed to Return

Born from a dream of truly circular construction, EcoCocon crafts affordable walls from renewable, locally sourced materials. The panels are designed to stand strong for decades and then safely return to nature with minimal waste.

Plant-Based Construction Fights Climate Change

The panels are made of 89% straw and 10% timber, just enough to ensure strength while protecting our forests. Wood comes from sustainably managed forests, and the straw from nearby farms. With a low-energy production process and plans to set up local mini-factories, this approach keeps carbon footprints small, supports regional economies, and reduces transport emissions.

Stronger Together

In 2025, EcoCocon and Ecological Building Systems formed an exclusive partnership to bring scalable ecological construction solutions to the UK and Ireland. Together, we make low-carbon building methods more accessible for everyone seeking truly sustainable alternatives in modern construction.

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The Customer is solely responsible for determining the suitability of the Goods for the Customer's intended purpose and all design decisions relating to the use or installation of the Goods.





JOIN OUR CAUSE TODAY

Find more information and request a free estimate on our website ecologicalbuildingsystems.com/solutions/ecococon



For over 20 years, Ecological Building Systems has been at the forefront of environmental and sustainable building products supplying a range of innovative airtightness solutions and natural insulations backed up with expert technical support.

As product suppliers in the UK and Ireland, we're happy to assist you with your projects and have expert technical and sales advice on hand.



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