

01 Reviving Concrete Buildings with EcoCocon Walls

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Introduction

EcoCocon Walls as an Excellent Wrapping and Infill Solution for Concrete Structures

EcoCocon walls offer an excellent thermal upgrade solution for existing concrete buildings where preserving the structural elements, such as columns and floor slabs, is a priority. Their design makes them ideal as infill panels or wrapping walls, providing effective insulation and enclosure without altering the core concrete frame.

This makes EcoCocon a great choice for retrofit projects or any situation where maintaining the original structural integrity is important, while upgrading thermal performance and building envelope quality.

Preservation of Structural Frame

The existing structural frame (concrete columns and floor slabs) remains intact, maintaining the building's load-bearing capacity and stability.



Preservation of existing structure

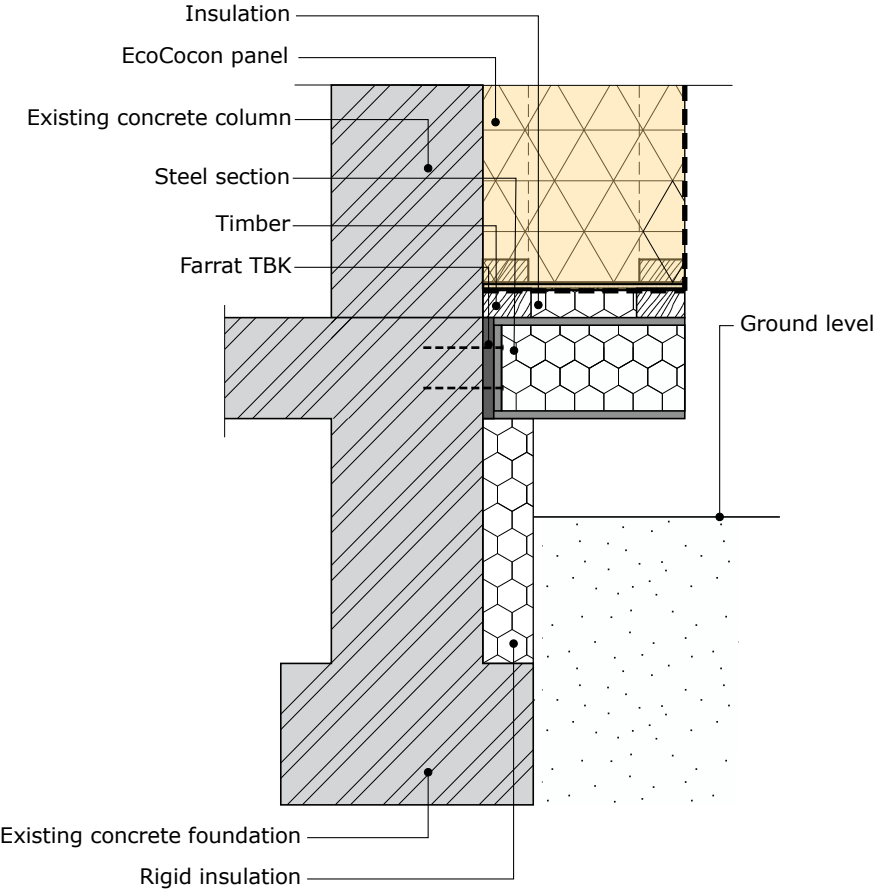


Thermal upgrade / Energy efficiency

Wall Support at Base

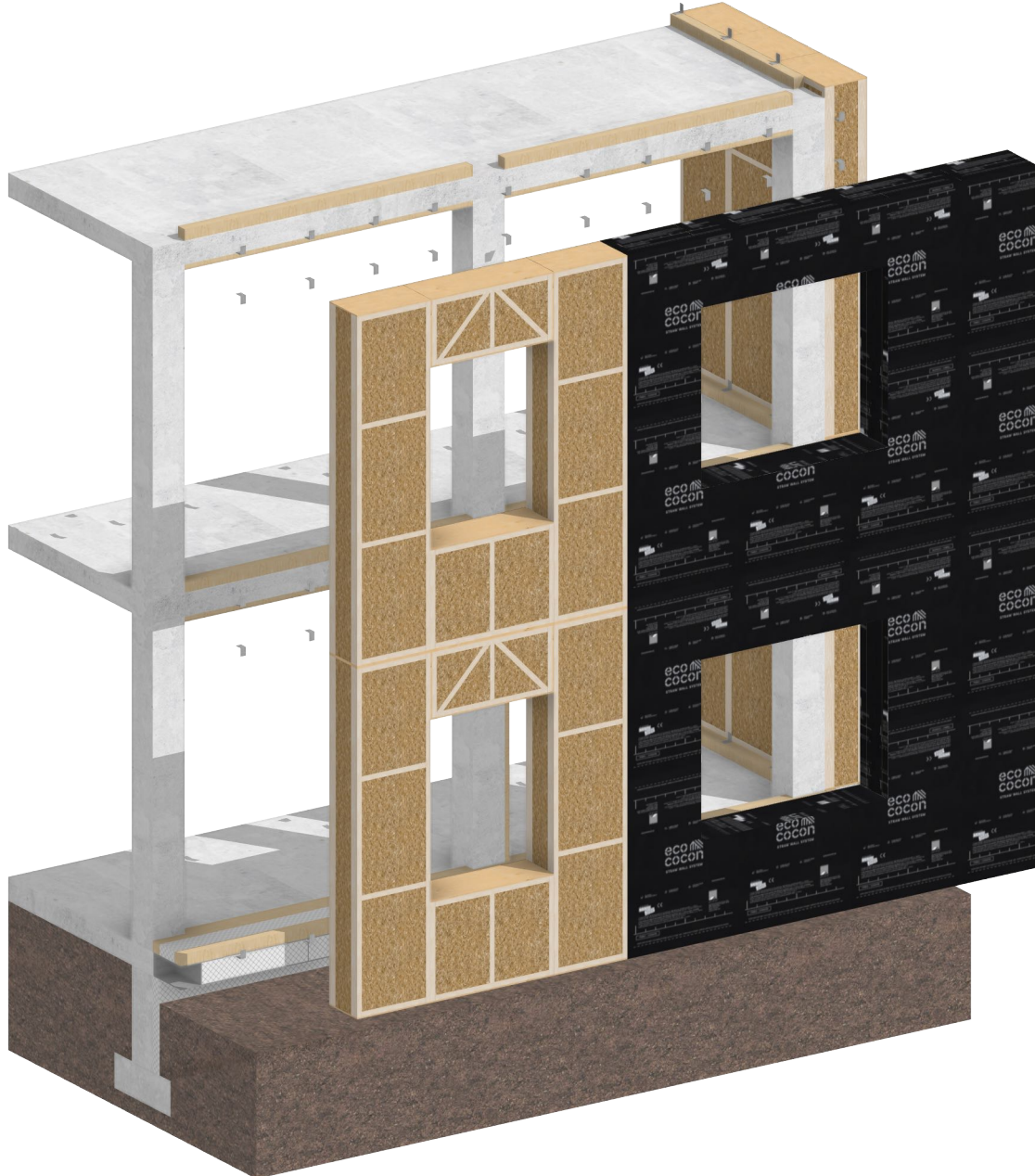
In this example, short steel beams are installed onto the existing concrete slab to provide support at base. A timber base plate is then fixed to the steel beams, providing a stable foundation for the EcoCocon panels.

The EcoCocon panels are subsequently attached to the new timber base plate, ensuring a secure and precise connection between the wall system and the existing structure.



EcoCocon Wall-to-Foundation Detail

Timber Frame/EcoCocon Panel Installation (Wrapping)



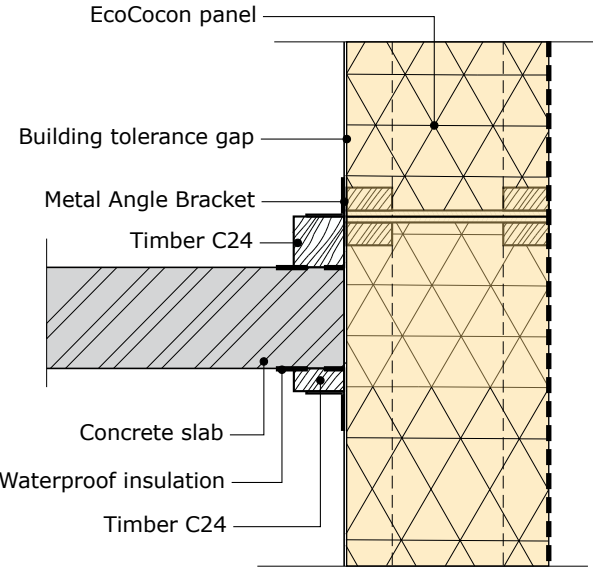
Installation of Timber Frame

A timber frame is fixed onto the existing concrete structure. This frame acts as the support system for the EcoCocon panels and allows for proper attachment and alignment.

The timber frame zone accommodates services, optional additional insulation and finishes as part of the wall system.

EcoCocon Panel Installation

EcoCocon panels covered with airtight vapour open membrane and installed onto the timber frame, creating a continuous, high-performance building envelope. These panels provide excellent thermal insulation, airtightness, and environmental benefits due to their natural materials and high precision prefabricated quality.

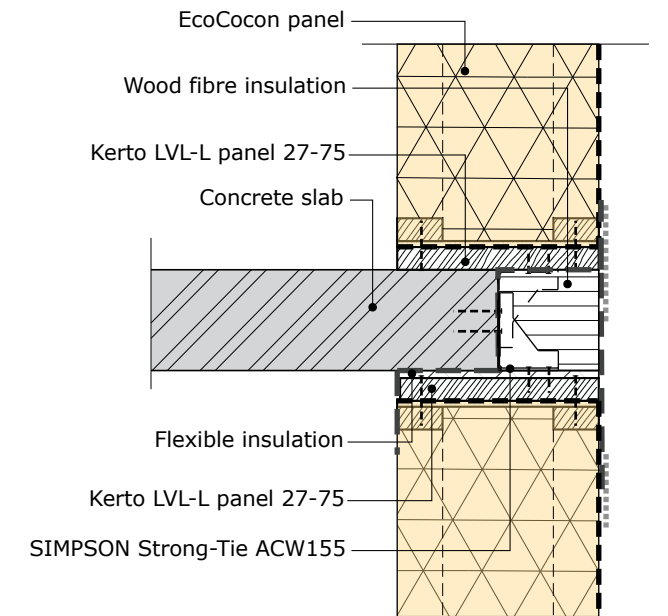


Wall to floor connection in section

Kerto LVL-L/EcoCocon Panel Installation (Infill)

EcoCocon Panel Installation

First, the metal brackets are fixed to the concrete structure. The Kerto LVL timber frame elements are then attached to the EcoCocon wall panels prior to installation. Finally, the EcoCocon panels are fixed to the concrete using the pre-installed metal brackets.



Wall to floor connection in section

Airtightness and Weather protection

EcoCocon wall segments consist of prefabricated panels with a twin-stud timber frame and straw infill, providing excellent insulation and vapour permeability.

On the exterior side a vapour open membrane ensures airtightness, while allowing moisture diffusion. Internally, a service cavity can be provided, finished with gypsum board for a smooth, fire-resistant surface or natural 3-ply wood panels for a warm aesthetic.

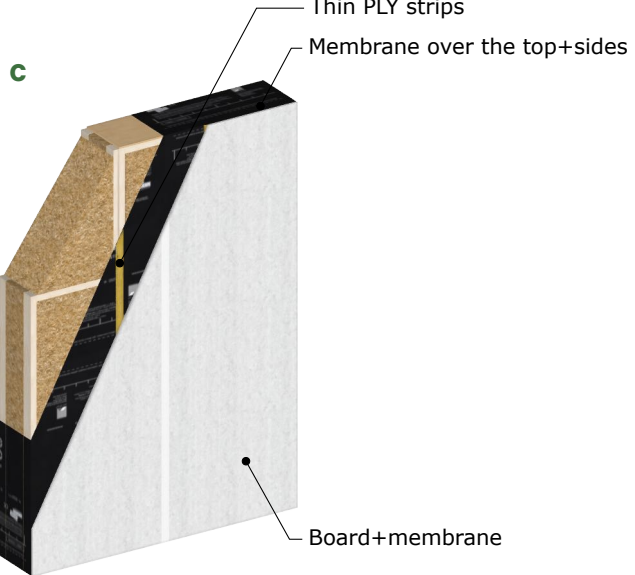
Externally, a diffusion-open membrane or a board shields the structure from wind and rain while allowing vapour to escape, followed by ventilated facade—typically timber or render—for durable weather protection and visual appeal.



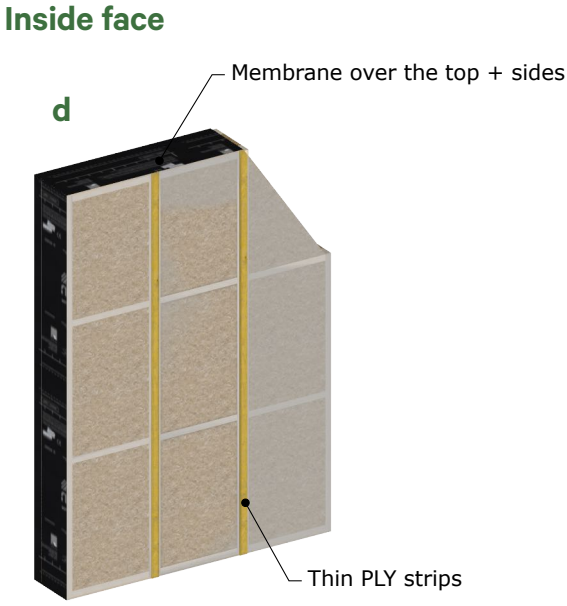
Membrane + thin PLY strips



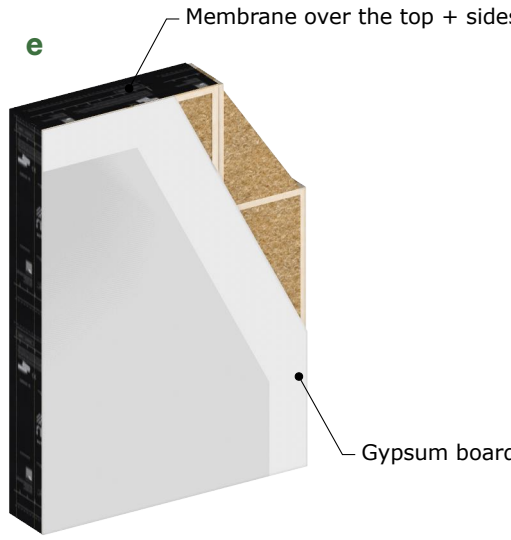
Protective board with taped joints



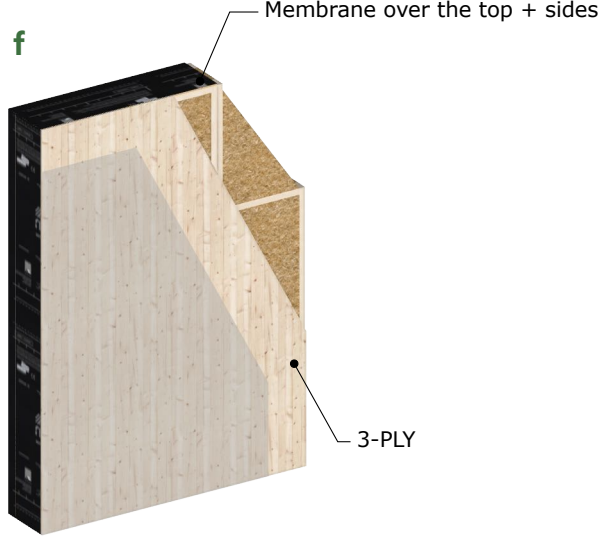
Protective board with additional membrane + thin PLY strips



Temporary plastic membrane + thin PLY strips



Gypsum board+optional temporary plastic membrane



3-PLY + temporary plastic membrane

Benefits & Performance Summary

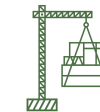
Preservation of the existing structure reduces construction time, waste, and costs. Superior insulation improves energy efficiency and occupant comfort. The system allows for flexible design and finishing options, both internally and externally.

The panels are light weight, and while they require basic support, they add only minimal load to the existing concrete structure. EcoCocon wrapping can be self-bearing on its own light foundation, making it possible to extend the building area or add new spaces without overloading the existing structure.

The insulation has a relatively high mass, which improves thermal comfort by keeping interiors cooler during summer heat.



Panels are light weight



Can be installed on a light foundation for extensions