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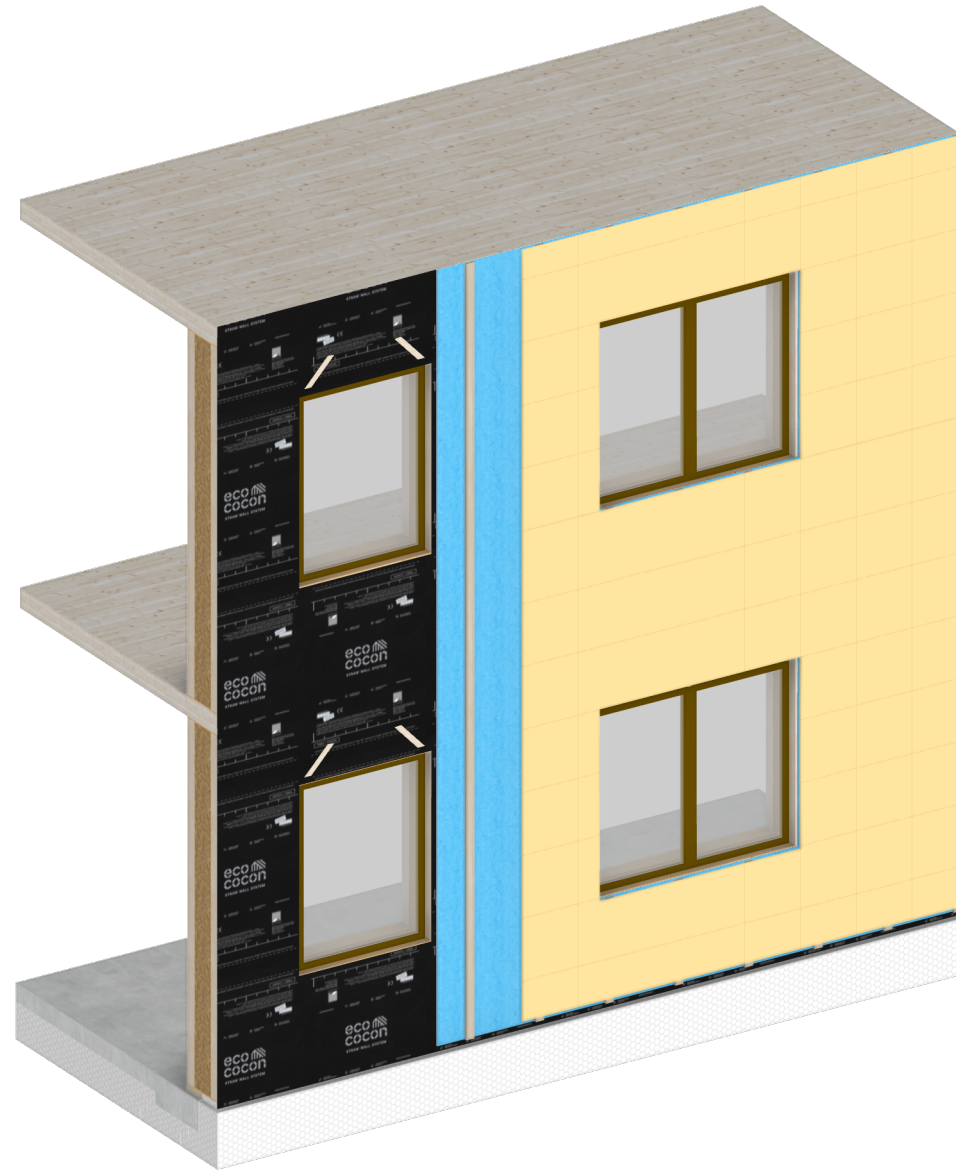
CLT Structure with EcoCocon Walls

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Introduction

The combination of Cross-Laminated Timber (CLT) and EcoCocon walls offers a versatile and sustainable construction system that unites structural precision with exceptional environmental performance. CLT provides a strength, stability, and design flexibility.

EcoCocon walls can function either as load-bearing elements or as infill in combination with a CLT structure. They deliver excellent thermal insulation, airtightness, and vapour permeability. Together, these bio-based systems create a durable, low-carbon building envelope that enhances energy efficiency, indoor comfort, and material circularity.



Structural Flexibility



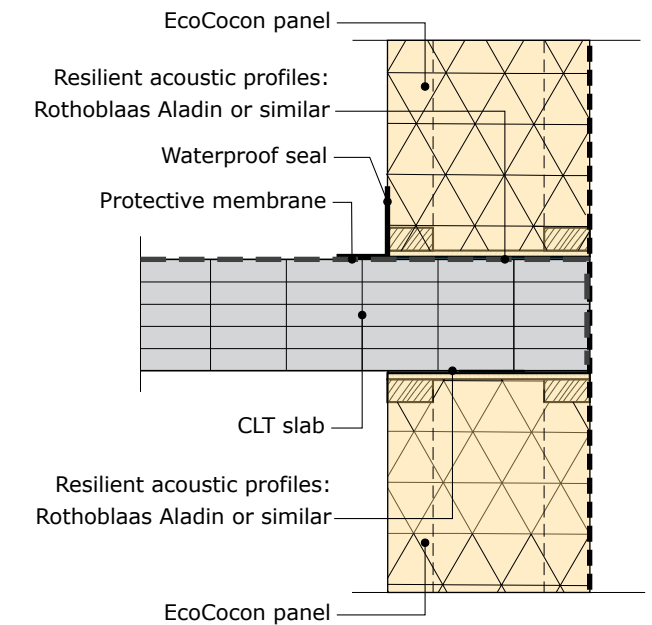
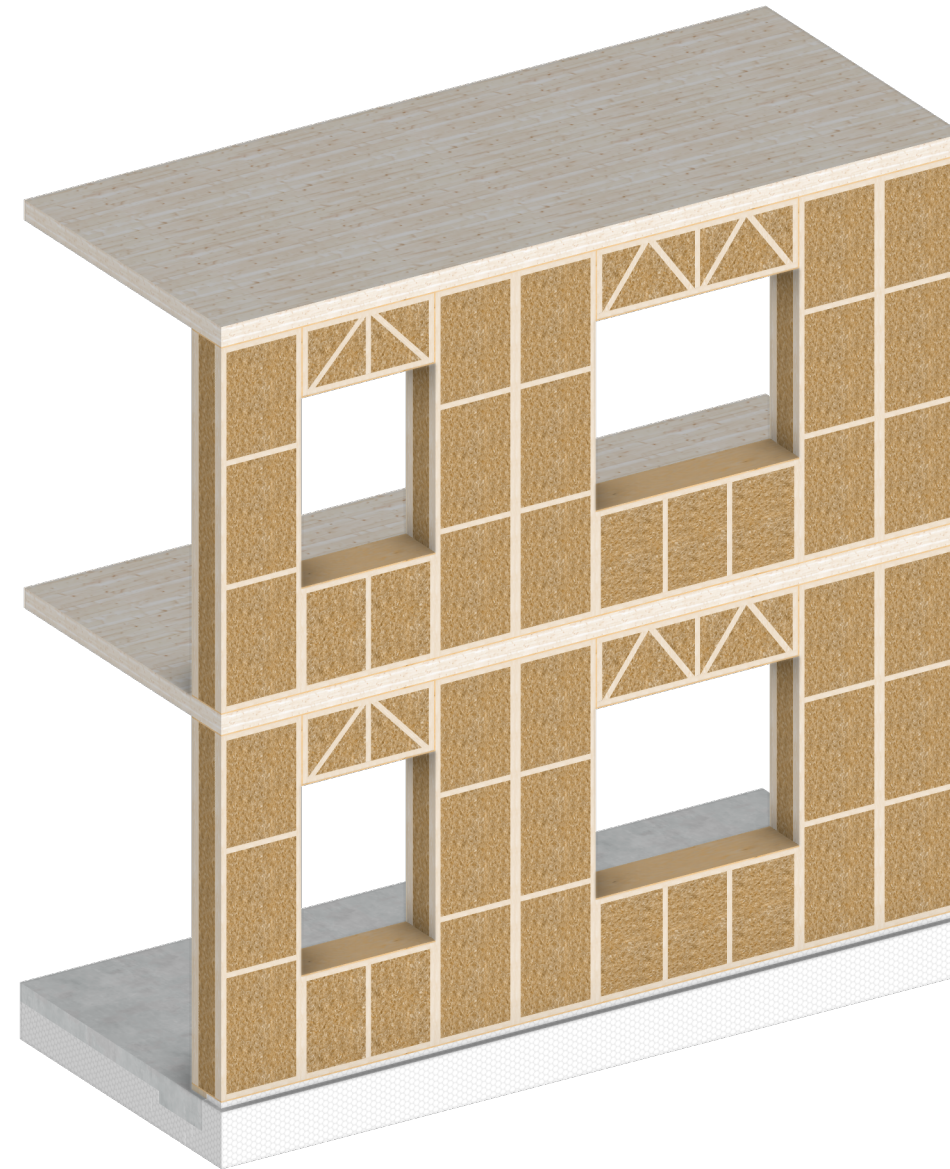
Low-Carbon Design

CLT Structure with EcoCocon Load-Bearing Walls

For load-bearing option, EcoCocon panels act as the primary load-bearing walls, supporting a CLT floor slab.

The EcoCocon panels carry the structural loads while also providing structural racking and insulation. This approach integrates the building's structure and thermal envelope into a single system, combining the load-bearing capacity of timber-straw panels with the spanning ability of CLT floor slabs.

EcoCocon have developed a number of standard foundation solutions and these are available for download on our website. However, project specific foundation design is always confirmed by the project Structural Engineers.



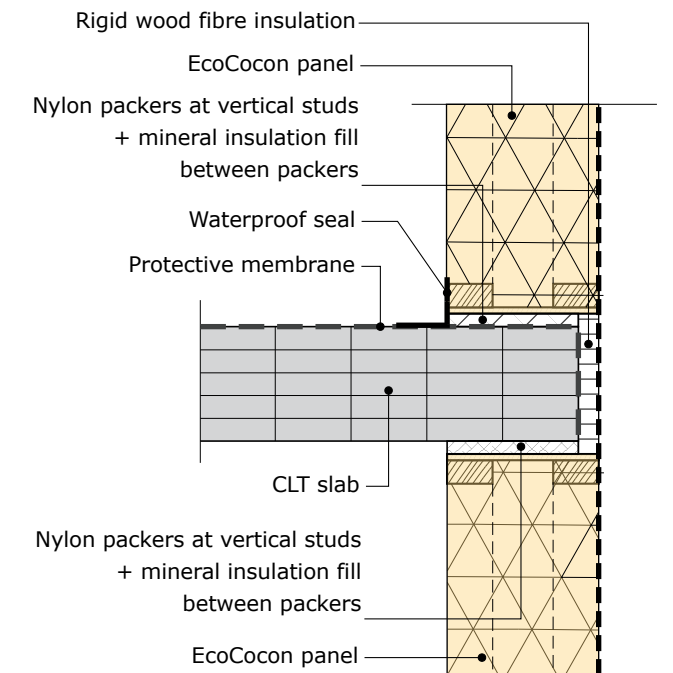
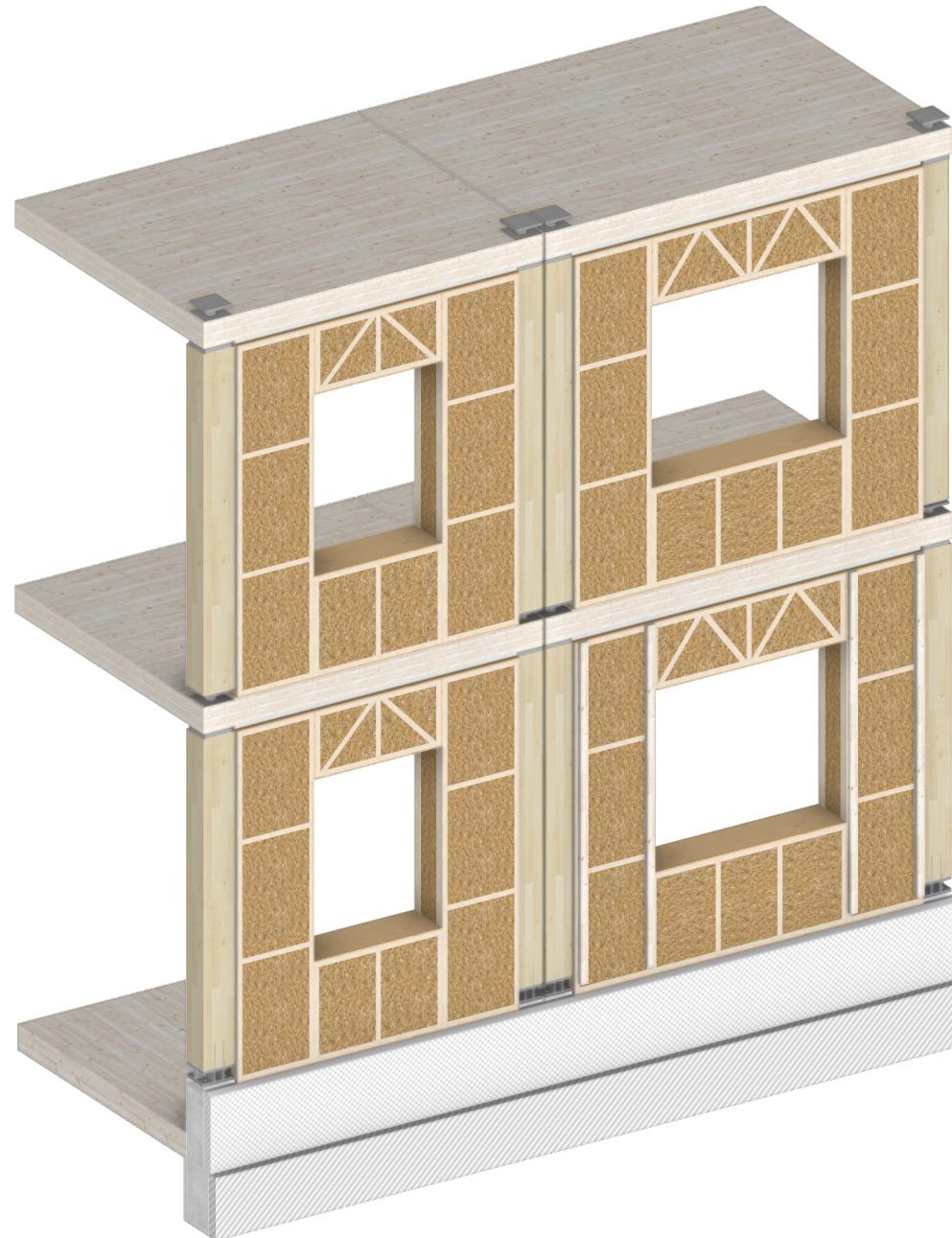
Wall to floor connection in section

CLT Structure with EcoCocon Non Load-Bearing Walls

In this example, the structural system consists of CLT floor slabs supported by glulam columns. EcoCocon panels are used as non load-bearing infill walls.

The CLT and glulam carry all structural loads, while the EcoCocon panels provide enclosure and insulation, separating the structural and envelope functions efficiently. This setup allows efficient use of timber and fast construction of tall buildings, while incorporating timber-straw panels for the building envelope.

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Example: Wall to floor connection in section

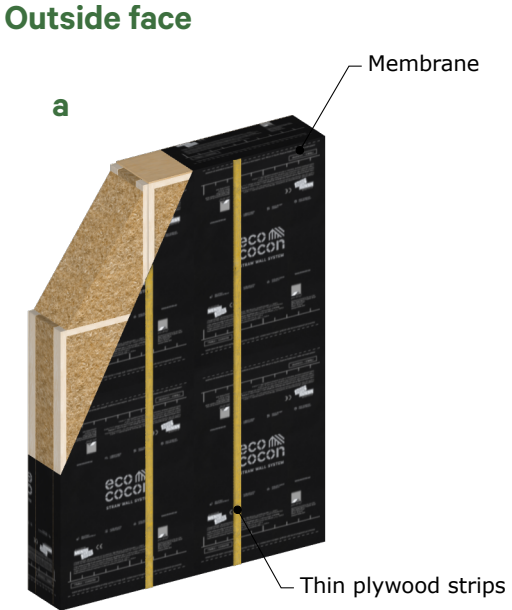
Airtightness and Weather Protection

EcoCocon walls consist of individual prefabricated panels.

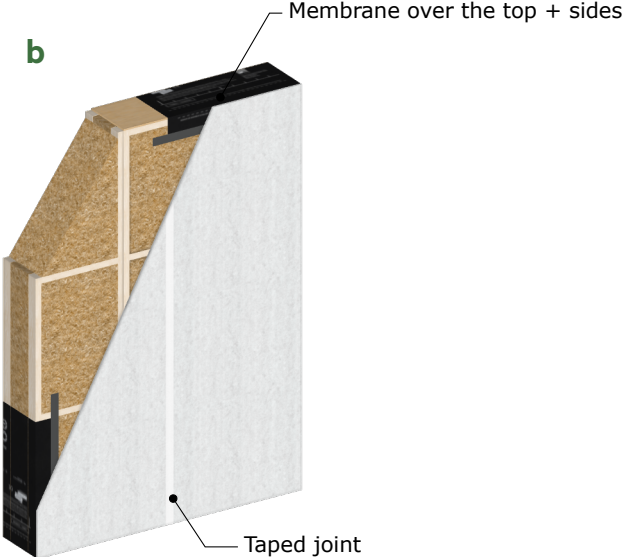
On the exterior side, a vapour open membrane ensures airtightness while allowing moisture diffusion. Internally, a service cavity can be provided, finished with gypsum board for a smooth, fire-resistant surface or natural plywood panels for a warm aesthetic.

Alternatively, a temporary clear plastic membrane can be installed to the internal face, providing weather protection during assembly. This temporary membrane should be removed within 2 weeks of installation on site. Final internal finishes can be applied to walls at a later stage.

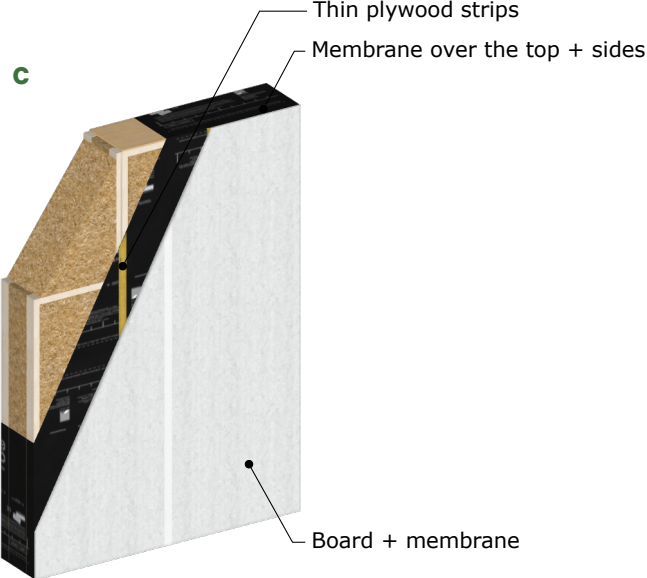
Externally, a diffusion-open membrane or a board shields the structure from wind and rain while allowing vapour to escape, followed by ventilated facade for a durable weather protection and visual appeal.



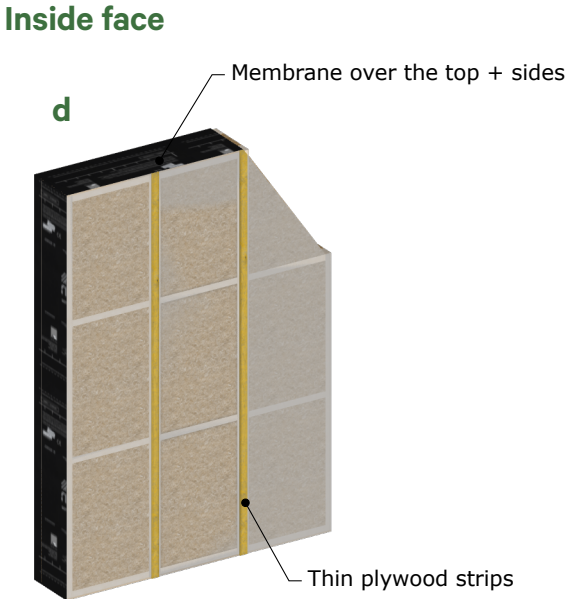
Membrane + thin plywood strips



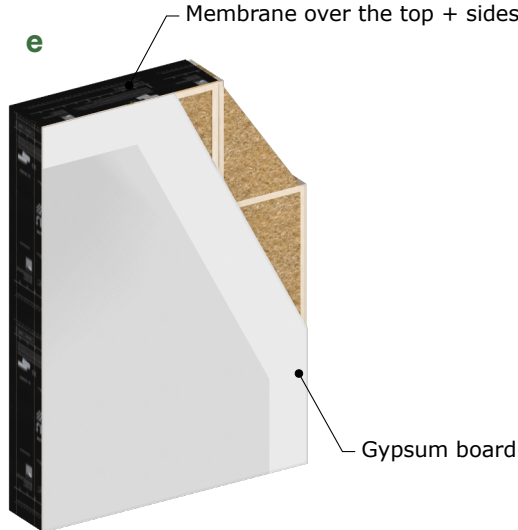
Protective board with taped joints



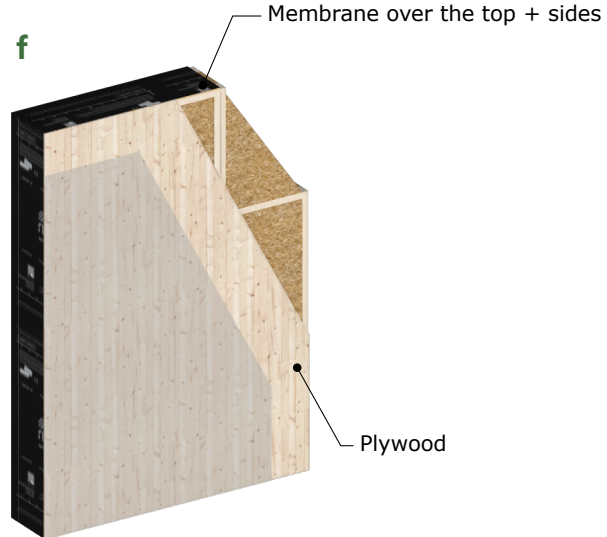
Protective board with additional membrane + thin plywood strips



Temporary plastic membrane + thin plywood strips



Gypsum board + optional temporary plastic membrane



Plywood + temporary plastic membrane

Benefits & Performance Summary

EcoCocon timber-straw panels provide highly insulating exterior walls with fast installation and excellent airtightness. CLT complements this as interior partitions, floors, and roofs, with EcoCocon walls usable either as load-bearing or as non load-bearing infill within a CLT/ glulam frame.

This hybrid approach minimises wood usage and reduces CO₂ emissions, using the natural insulation properties of EcoCocon.

Combining EcoCocon and CLT improves stiffness, load-bearing capacity, and thermal efficiency, while offering flexible architectural design options.



Fast & Airtight



Design Flexibility

CASE STUDY

Hyllie

A 12-storey residential building in Malmö with 65 apartments, offices and café area. The building is redefining what biobased construction can look like when design, innovation, and community come together.

Its entire supporting structure, including the elevator shaft, is built from wood. Glulam and CLT superstructure is combined with EcoCocon external walls, drastically reducing embodied carbon.

Fully pre-assembled walls are installed as non load-bearing infill elements into the glulam frame.

Completion is planned for 2026.

Location: Malmö, Sweden

Client: ETC Bygg

Architect: Kaminsky Arkitektur

Typology: Housing, mixed use

Construction: 2025-2026

Total Size: approx. 3200 m² floor area

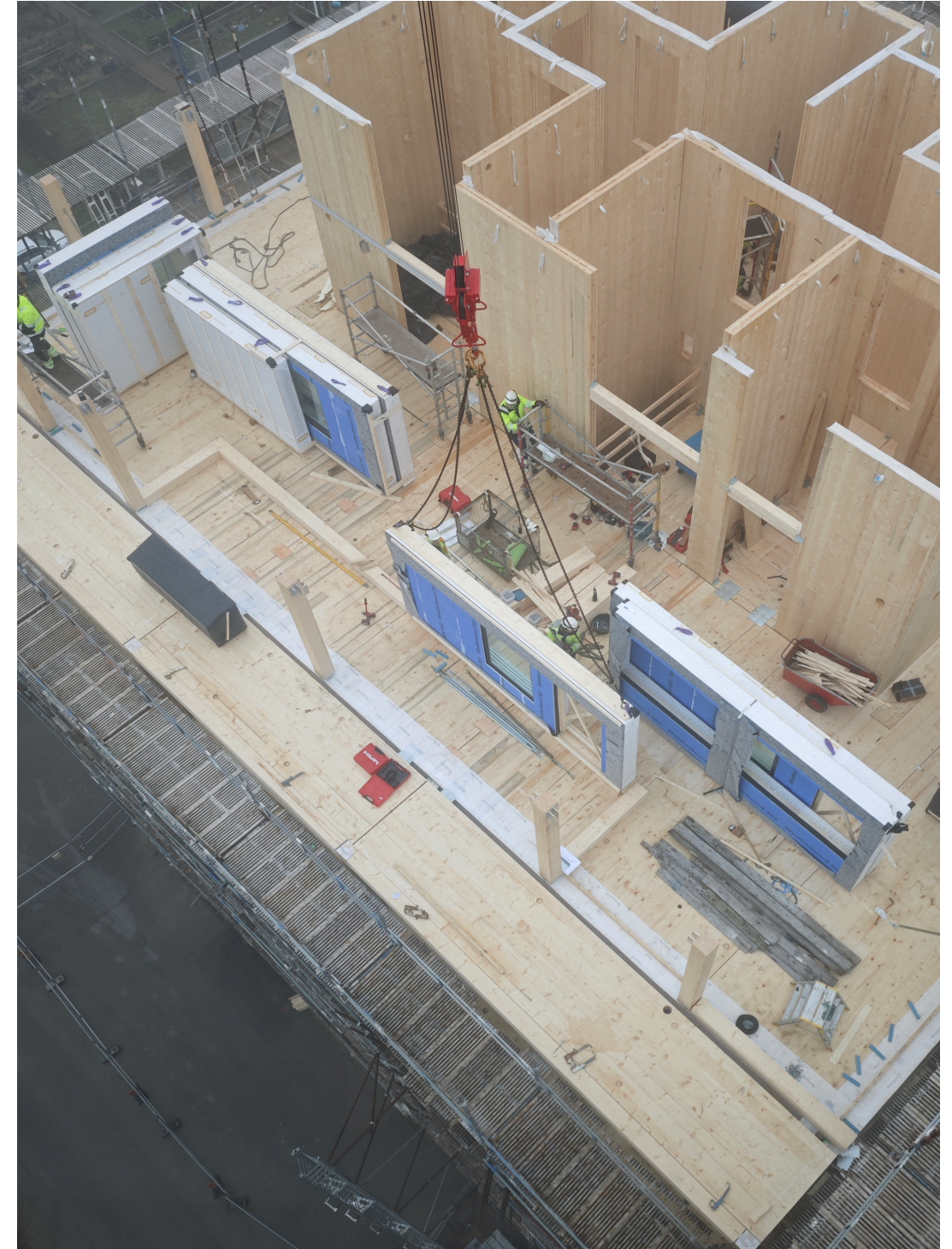




Top: EcoCocon timber and straw wall panels pre-assembled in a local workshop.

Middle: Pre-assembled walls installed between glulam frame.

Right: aerial view from the tower crane, pre-assembled walls placed on to CLT floor deck, with central CLT core walls.





Middle: Pre-assembled walls installed between glulam frame, with windows already installed.

Right: aerial view of the building half way through the construction, with central CLT core walls, CLT floors and EcoCocon external walls.





View of the building topped out at 12 storeys high.