



StoraEnso

PENNY Supermarket Skuteč

Skuteč, Czech Republic

Partner of Stora
Enso

When you're shopping, have you noticed more and more stores showcasing natural wood and greenery?

Do you also find it welcoming and calming? You're not alone; research shows over 80% of shoppers find wooden spaces positively influence their shopping experience and make them feel more connected to nature (Laval University).

It's called biophilic design, and it's increasingly popular with retailers with compelling evidence it boosts sales and strengthens a brand's value (CecoBois).

Customer experience and sales revenue are only one of the reasons why leading brands like Google and Amazon are designing with biophilic principles. When international supermarket chain PENNY remodelled their stores using sustainable massive timber, the driving factor was ambitious corporate responsibility goals. PENNY is determined to reduce the climate-damaging CO₂ they produce by 30% over the next 7 years.

Meet the biggest all-wood building in the Czech Republic!

One of the fastest and most effective ways to reach that climate goal is by remodelling and building their new stores with sustainable wood. As part of this effort, in 2022, the first all-wood PENNY store opened in the Czech Republic in Skuteč. The 830 m² store was built in just four quick months!

By building in wood, PENNY reduced its carbon footprint immediately. Had the store been built in reinforced concrete, every cubic metre would have produced around 500 kg of CO₂. But, by building with wood (a renewable resource), the opposite happened approximately 700 kg of CO₂ per cubic meter was saved. As the trees grew, they removed carbon dioxide from the atmosphere and stored it in the wood as carbon. So, instead of the supermarket being an emission generator, it is, in effect, a carbon storehouse. The carbon will stay locked up in the wood for the duration of the store's life-cycle and can then be reused. No other structural building material does all of that.

The raw material had to be used as efficiently as possible to achieve these impressive sustainability results. The load-bearing structure, which would typically be made with steel and concrete, was substituted with 346 m³ of ultra-strong Sylva™ by Stora Enso CLT Walls and Roofs and 53 m³ Sylva GLT Beams and Columns.

For those of you new to wood, CLT and GLT are modern wood products consisting of several single-layer panels connected with structural adhesives to produce very strong load-bearing material. They are short for cross-laminated timber and glued laminated timber, sometimes called glulam.

The exterior façade was constructed with 17 m³ of Thermowood® by Stora Enso. Thermowood is thermo-treated, high-quality softwood sourced from sustainable, managed forests that are treated using completely natural methods – heat and steam.

The intensive thermal treatment makes the wood more dimensionally stable and improves the wood's thermal properties, opening it up to a wide range of outdoor or indoor applications. By using Thermowood as a façade, as it is here, it helps protect the building from the cold winters and the humidity in summer.

The heat treatment also makes the wood highly resistant to rot and fungi by breaking down the hemicellulose in the wood, so it no longer contains the nutrients needed for it to develop. Unlike pressure-impregnated wood, Thermowood can be recycled as untreated wood at the end of the building's lifecycle because no harmful chemicals are added during the process.



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So, if you are a retailer or involved in the conception or production of buildings, you might just want to ask yourself, what if my next retail store project was made with wood?

Did you know?

- Stora Enso uses every part of the tree to create Sylva products, and Thermowood. The parts of the tree that cannot be used for wood products are fully utilised in other products.
- For each tree harvested, approximately three new trees are re-planted.
- It took only three minutes for the equal volume of wood used at this store to grow back in the sustainably managed European forests.
- The adhesives used to produce Sylva are harmless to health and formaldehyde-free.
- Wood is around five times lighter than concrete, so it took only seven relatively small deliveries of wood products instead of approximately 35 truck deliveries had the decision been to build entirely in reinforced concrete.



BIG SEE Wood Design Award Winner 2023



Photo credit: Stora Enso

General

Delivery year

Building type



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2022

Commercial

Area (m²)

830

Storeys

1

Products

Products and Services

Sylva™ CLT Walls, Sylva™ GLT Beams and Columns, Sylva™ CLT Floors and Roofs, ThermoWood®

Product volume (m³)

416

Number of deliveries

7

Team

Partner of Stora Enso

A2 Timber

Architect

Yuar s.r.o.

Specialist Timber Subcontractor

A2 Timber s.r.o

Developer

Penny Market s.r.o.

Main contractor

PS Slovacko s.r.o

Timber Engineer

A2 Timber s.r.o

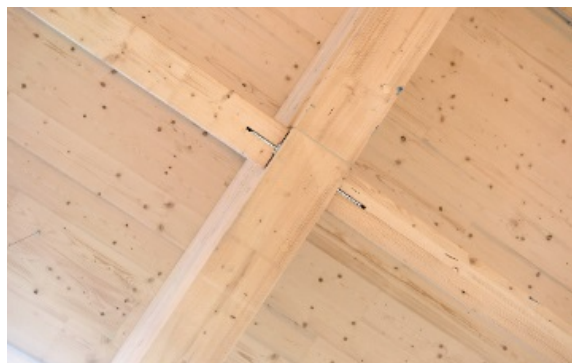


Photo credit: Stora Enso



Photo credit: Stora Enso



Photo credit: PENNY



Others

**Construction duration
(months)**

4

**Timber superstructure
erection duration (weeks)**

4

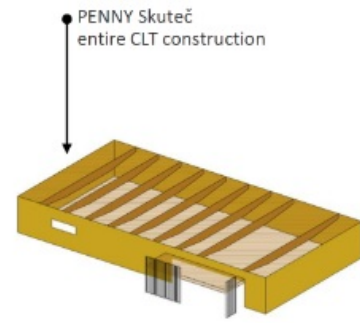


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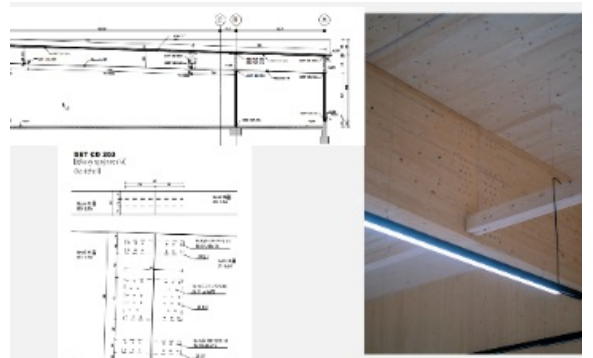


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