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Partner of Stora Enso

ByggPartner

Central Hospital Karlstad (CSK) Karlstad, Sweden

Stora Enso is supplying its mass timber Sylva™ kit of parts for a groundbreaking hospital project in Karlstad, Sweden, where Skanska is leading construction.

The new reception building at the Central Hospital (CSK) will be the first hospital facility in Sweden to feature an engineered wood frame and will contribute to creating a more efficient and modern healthcare environment for both patients and staff.

Commissioned by Region Värmland, the SEK 740 million (€62.9 million) project is the first of five major developments planned for the CSK site and is currently underway.

Layout

The reception building will be approximately 14,000 square meters spread over eight floors, including six floors with hospital operations, one floor with fan rooms and a basement.

The building will provide day and outpatient care. During the upcoming renovation of the existing hospital buildings, the reception building will also be used for temporary activities. The project therefore requires a high degree of flexibility in design.

Stora Enso's ~1,300 cubic meters of mass timber structure aligns with the project's goals of resource efficiency and a healthy indoor environment for the patients.

The prefabricated Sylva Floors and Roofs only generated 68 tonnes of greenhouse gases (CO_2e) to manufacture and less than one tonne of CO_2e to transport from nearby Grüvon, Grums. Compared to the 987 tonnes of carbon dioxide that the trees removed while growing and will store in the hospital for generations.

This amount is a small fraction. Choosing Sylva instead of non-renewable materials avoided 1480 tonnes of greenhouse gases. Source: Stora Enso Carbon Calculator based on third-party verified EPDs .

Construction

Construction began in March 2024 and the first phase is expected to be completed by 2027. It is an on-going project, that will be completed in its entirely in 2033.

A 40-meter-high, 45-meter-wide, and 90-meter-long construction tent has been erected to protect the timber frame and reclaimed brick extension from weather, ensuring materials stay dry until the façade and roof are in place.

Size/area: New construction GTA: 107,000 square metres in total. First phase 14,000 m2. Reconstruction GTA: 29,000 square metres, Demolition: 53,000 square metres.

Wood origins

The Sylva™ Floors and Roofs were made with wood sourced from PEFC-certified forests, ensuring that the timber used comes from sustainably managed forests. PEFC is one of the most trusted and widely recognized certifications for sustainable forest management.

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Sylva™ Services

This project is leveraging the use of Stora Enso's Sylva Services and will have three layers of non-combustible Sylva™ Fire Resistant Lining applied to the Sylva CLT Floors and Roofs in the mill. This will significantly reduce on-site construction working hours and prevent common health and safety hazards associated with drywall installation, such as harmful dust, overexertion, slips and falls.

The project is also having openings for friction-based lifting devicespredrilled in optimal factory conditions, so when the kit of parts arrives on-site, they are ready to install safely and immediately.

Low-disruption construction

Given that the construction site is in the heart of the hospital centre, the construction period needed to be as short as possible with minimal disruption for the patients and staff.

Building with mass timber is already at minimum 30% faster using concrete and steel and requires less heavy equipment on site as materials arrive prefabricated, and ready to install in smaller just-in-time deliveries.

This results in far less: noise, dust, on-site construction waste, and transport emissions. (Review of the Performance and Benefits of Mass Timber as an Alternative to Concrete and Steel for Improving the Sustainability of Structures). However, with Sylva Services the construction is even more rapid as Stora Enso is preassembling fire-resistant liners off-site. This service drastically reduces the amount of noise pollution and harmful dust on-site.

General

Delivery year

Under Construction

Building type

Health

Area (m²)

14,000

Storeys

8

Photo credit: ©White Arkitekter

Products

Products and Services

Sylva™ CLT Floors and Roofs, Fire-Resistant Lining, Preinserted lifting devices , Temporary Membrane

Product volume (m³)

1,295

Product delivery duration (weeks)

24

Team

Partner of Stora Enso

ByggPartner

Developer

Region Värmland
Regionfastigheter

Architect

White Arkitekter

Main contractor

Skanska