



StoraEnso

Partner of Stora
Enso

21 Viviendas

Sabadell, Barcelona



This mixed-use construction project, located at the corner of Barcelona Road and Zurbano Street in Sabadell, Vallès Occidental, is a significant development for the municipality. The project includes 21 dwellings, a shop, and parking facilities, and is managed by Viviendas Municipales de Sabadell, in Barcelona.

Building Design and Structure

The building spans six floors, including two basement levels, a ground floor, five standard floors, and an attic. The design ensures all dwellings benefit from transverse ventilation and direct solar gain in the living rooms during winter solstices. The two basement floors provide parking for 24 cars and 8 motorcycles, along with storage rooms, grey water recycling systems, and a communal warehouse.

Application of prefabricated CLT

The structure above ground is constructed using Cross Laminated Timber (CLT), specifically 778.53 m³ of [Sylva Walls, Floors, and Roofs by Stora Enso](#). This choice of material significantly enhances thermal insulation and reduces the building's carbon footprint.

Industrialised Construction Systems

The project employs industrialised construction methods, leveraging the Building Information Modelling (BIM) approach. This method allows precise and controlled planning, reducing material usage and energy consumption during assembly. The use of prefabricated CLT elements realised by Madergia facilitated this industrialised approach, ensuring high-quality construction with minimal waste.

Environmental impact

The building's design prioritises energy efficiency, featuring a thermal envelope that avoids thermal bridges and reduces heat loss. The facades with higher solar radiation are equipped with ventilated solutions, while other facades use thermal insulation adhered directly to the exterior CLT surface. The windows are fitted with PVC frames and low-emissivity glass to further enhance energy performance.

Carbon footprint

Manufacturing

41 tonnes CO₂e **Transporting** 41 tonnes CO₂e **594** Carbon dioxide removed from the air and stored in 21 Viviendas c/Zurbano **890** tonnes CO₂ emissions avoided by using wood instead of non-renewable construction materials

Wood Origins

The Sylva™ elements 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 recognised certifications for sustainable forest management.

Monitoring and user education

To validate the energy efficiency measures, VIMUSA is monitoring the building's performance in real-time. This includes placing thermal expenditure meters in aerothermal machines and specific electric energy meters in four of the 21 dwellings. This data helps refine future developments and educate tenants on optimal building usage.

The renewable materials company



StoraEnso

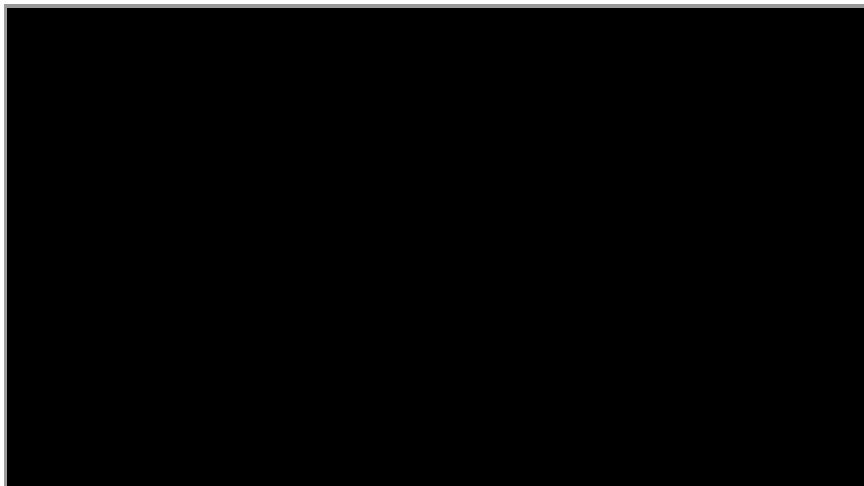
Lifecycle considerations

Special attention was given to the choice of materials, considering their entire lifecycle. The building's energy systems, including grey water recycling and aerothermal energy, contribute to its sustainability.

Awards

The project received the prestigious "Premios AVS 2023" award for the best sustainable building in new construction. This accolade is part of an architectural competition aimed at public land and housing managers.

Time lapse of the construction



Premios AVS 2023



Photo credit: Madergia/©Pablo García Esparza

General

Delivery year

2021

Building type

Multi Residential

Area (m²)

1,948

Storeys

6

Units

21

The renewable materials company



StoraEnso

Products

Products and Services

Sylva™ CLT Floors and Roofs,
Sylva™ CLT Walls

Product quality

INV and NVI

Product volume (m³)

779

Team

Partner of Stora Enso

Madergia

Developer

Habitatges Municipals de
Sabadell, S.A. (VIMUSA)
Conscytec

Specialist Timber Subcontractor

Eiffage Conscytec