



StoraEnso

Partner of Stora
Enso

16 Viviendas

Polvorí, Barcelona



This €1.75 million, 16-unit social housing project is a key step in revitalising Polvorí, a 1960s Barcelona neighbourhood shaped by rapid expansion. Originally built in the 1950s with over 40 concrete tower blocks to combat housing shortages, the area still struggles with urban renewal and investment. While some buildings have been refurbished for accessibility, others face demolition or repurposing. Residents demand deeper transformation beyond surface improvements. This project delivers a radical, sustainable solution, leveraging Stora Enso's Sylva™ kit of parts by Madergia for a cost-efficient, sustainable construction solution.

Building Design The building is distributed across the ground floor and three upper floors. The interior design features a vertical communications core optimised for surface level, providing access to four homes per landing, with two and three-bedroom options.

CLT structure The structure and façade are made of prefabricated cross-laminated timber (CLT). Using wood instead of other materials achieves better levels of thermal insulation and significantly reduces the carbon footprint of the construction. Photovoltaic panels have been installed to generate electricity for self-consumption, earning the building an Energy Certification A.

Maximising views and privacy Homes are strategically positioned to optimise views of the city and the Collserola mountain range, particularly from the northeast corner. Adjustable blinds provide flexible visual control and privacy, while ground-floor flats are slightly elevated to enhance seclusion.

Low-carbon design and passive strategies Energy efficiency drove the project, incorporating natural cross-ventilation and passive systems to reduce energy consumption. Maximised sunlight exposure ensures a minimum of one hour of direct winter sun for each unit, enhancing thermal comfort.

Prefabrication for streamlined construction The prefabricated Sylva™ kit of parts played a key role in enabling rapid, precise assembly. By integrating prefabricated and dry-assembled elements with proven materials, the project achieves high-quality execution while reducing waste and on-site labour.

Wood origins The Sylva™ CLT 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.

Collaboration The partnership between Stora Enso and Madergia was at the heart of this project's success. Stora Enso, a leader in mass timber construction, provided the high-quality CLT elements and Madergia, leveraging these prefabricated kits, realised the efficient building solution with the project team.

About the architects The award-winning architecture studio founded in 2004 conceived as an open and multidisciplinary structure that integrates different professionals for the development of architecture at the service of

people, respectful of the environment and capable of generating synergies with the real estate world and the construction technology industry. The project was carried out by architects Luis Lara, Elena Redondo, Mónica Escaño, and David Soley.

Carbon footprint CO₂e = greenhouse gases Manufacturing 41tonnes CO₂e Transporting 40 tonnes CO₂e 592.84 tonnes of CO₂ were removed from the air and are stored in the 16 units for generations to come. 889.25 tonnes CO₂e emissions avoided by using wood instead of non-renewable construction materials

The renewable materials company



StoraEnso

Source: [Stora Enso Carbon Calculator](#) based on third-party verified EPDs.

Publications about this project [Work begins on 16 affordable rental homes in the Polvorí](#)

Would you like to view other affordable co-housing that was built with a Sylva kit of parts?

[Albizzia](#)

[Parmentier](#)

[Marmalade Lane](#)

Learn more about the advantages with mass timber: [Download the whitepaper](#)

General

Delivery year

2020

Building type

Multi Residential

Area (m²)

1,332

Storeys

3

Units

16



Photo credit: Madergia/©Pablo García Esparza

Products

Products and Services

[Sylva™ CLT Floors and Roofs,](#)
[Sylva™ CLT Walls](#)

Product quality

PEFC

Product volume (m³)

779



StoraEnso

Team

Partner of Stora Enso

Madergia

Developer

El Institut Català del Sòl
(Incasòl)

Architect

Lara&Escaño Arquitectos (Luis
Lara, Elena Redondo, Mónica
Escaño, David Soley)

Main contractor

Voracys

Timber Engineer

Kmod Enginyeria en fusta –
Cirerers

Others

Total construction development cost (€)

1,750,000

Construction duration (months)

18