

77 Wittywood office building

Calle Llacuna 42

2022

SPAIN

Barcelona

Under construction

About

With 5 floors and 22 metres high, it is the first office building in Spain to be built entirely of wood. The construction of this building is committed to the industrialisation of the construction elements. That is why wood appears as the optimum material to form the structure. A system of GLT beams and posts on which the CLT panels rest to form the floor slabs was chosen, which adapts to the large spans required in a multifunctional building such as this one. The building stands out in terms of sustainability not only because of the timber structure but also because of its highest environmental ratings: LEED Platinum and WELL Platinum.



Aerial view.



Nighttime infographics. Main façade.
Colonial <https://n9.cl/7hr7o>



Agents involved

Architect	Ballarin & Grinyó		
Developer	Wittywood		
Construction company	Elecnor		
Structural engineer	Celobert Cooperativa y ESTUDI M103		
Timber installer	Madergia	Timber manufacturer	Stora Enso



Main façade infographics.
Colonial <https://n9.cl/7hr7o>



General

22 Height (m)	5 Floors above ground
4.147 Built-up area (m ²)	481 Ground floor area (m ²)
6.430.812 Budget (€)	1.551 €/m ²

Building use **Offices**



Infographics.
Colonial <https://n9.cl/7hr7o>



Technical data

Post and Beam Structural system Bracing system **CLT walls**

Timber products used

- Ribbed CLT panels on slabs
- CLT panels on core walls
- GLT posts
- GLT beams and joists

0 Concrete floors

5 CLT floors

0 Concrete-timber floors



Construction process. GLT posts and beams and CLT slabs in the first floor.



Construction timing

12 Months to complete the building

9 Weeks to build the structure



Timber structure with GLT posts and beams, CLT core in the background.



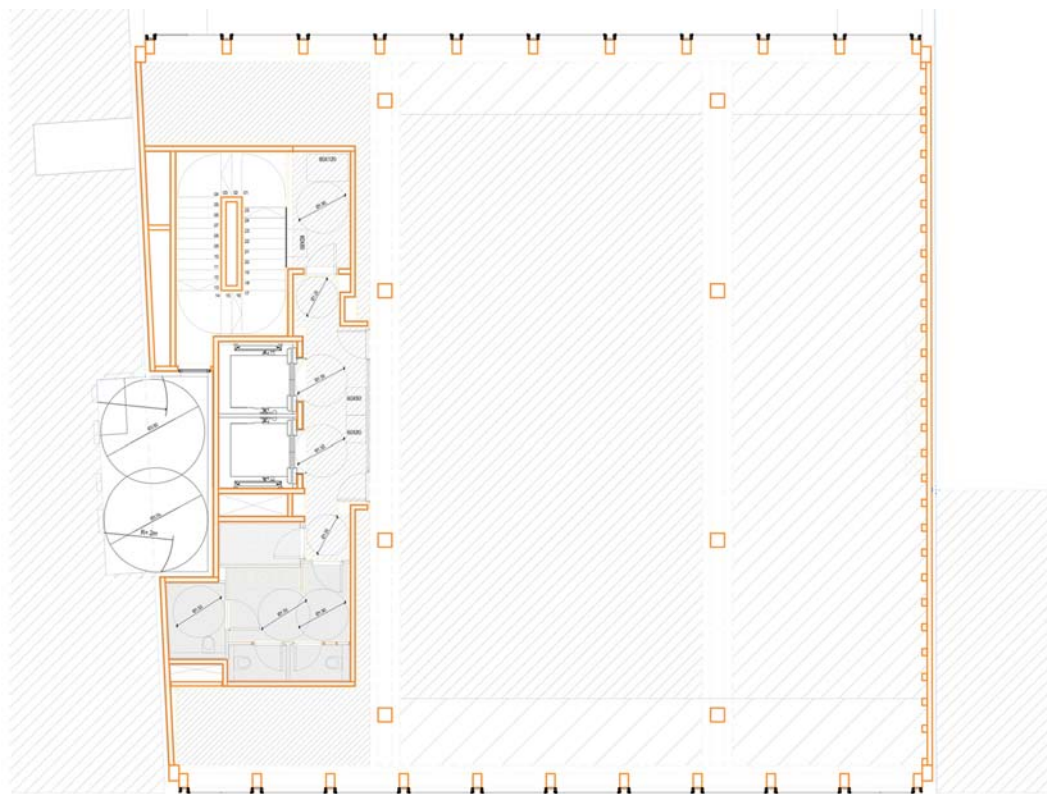
Wind actions

Terrain category IV

Area in which at least 15% of the surface is covered with buildings and their average height exceeds 15 m.

Slenderness

1,0



General floor plan

0 1 2 5m



Sustainability

Picea abies Wooden specie

1.200 Wood volume (m3)

1600 Distance of transportation (km)

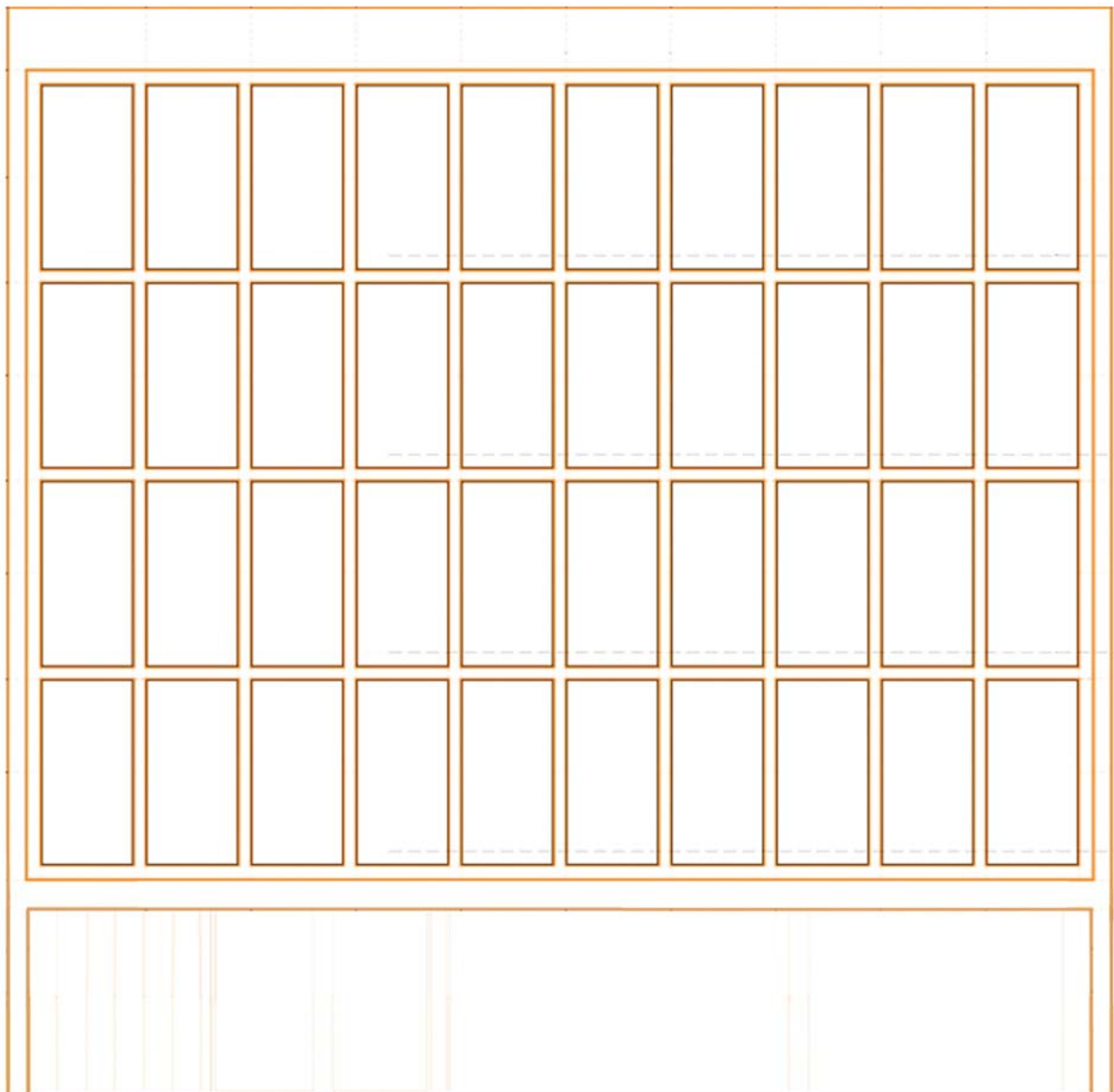
54% Percentage of structure made of wood

383 Potential CO2 benefit (t)

Special transportation needed

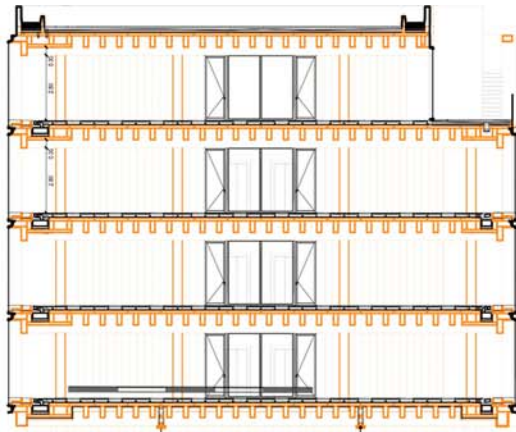


Construction process seen from the outside. Lacuna street.

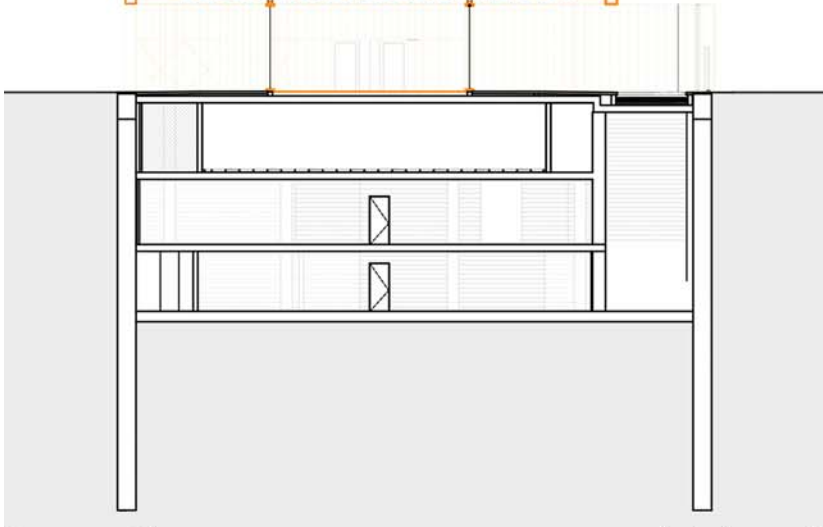


Main elevation

0 1 2 5m



Aerial view of the assembly of the structure. CLT panels stacked on the top floor.

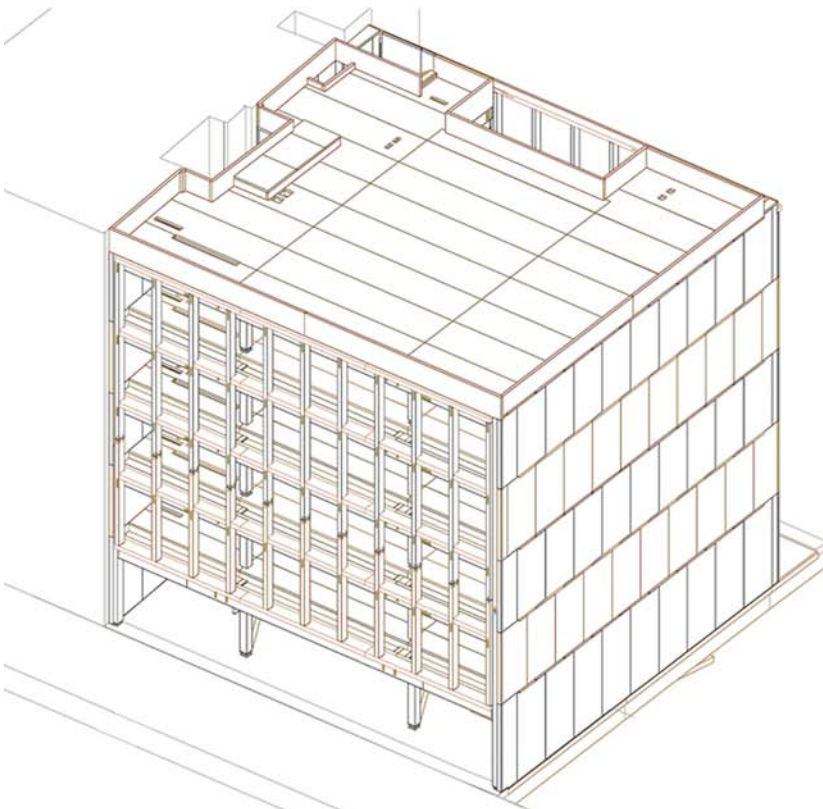


Cross section

0 1 2 5m



Joint of the GLT post with the CLT slab.



Constructive volume



References:

- Evalore. Pablo Muñoz. Online survey on 19.07.21. Interview on 20.07.21.
- Madergia. Diego Núñez. Online survey on 18.10.21.
- Visit to the building on 20.07.21.