

30 Redbridge School

R. Francisco Metrass 97, 1350-164
PORTUGAL Lisbon

2018
 Finished

About

The school consists of two buildings, a single-storey irregular-shaped pavilion and a regular longitudinal building, which follows the alignment of the street with four floors and a basement. The longitudinal building houses the primary classrooms and common areas of the school, the top floor is designed as a multifunctional open space.

Timber was chosen as the structural material for its sustainable properties and speed of assembly. In addition, the use of wood allows the construction of large spans, which are required to accommodate the different uses in the school.



Aerial view.



Northeast corner of the building
 FG + SG <https://n9.cl/6256f>



Agents involved

Architect	ARX Portugal		
Developer	Stone Capital		
Construction company	Alves Ribeiro, S.A.		
Structural engineer	SAFRE		
Timber installer	Carmo Wood	Timber manufacturer	Carmo Wood



Redbridge School viewed from Correia Teles Street
 FG + SG <https://n9.cl/6256f>



General

20	Height (m)	5	Floors above ground
4.579	Built-up area (m ²)	835	Ground floor area (m ²)
6.800.000	Budget (€)	1.485	€/m ²

Building use **Educational**



Inner courtyard
 FG + SG <https://n9.cl/6256f>



Technical data

Post and Beam

Structural system

Bracing system

Steel & timber cross

Timber products used

- GLT posts
- GLT beams

1 Concrete floors

3 CLT floors

0 Concrete-timber floors



Construction process. Roof structure
<https://n9.cl/cv2z>



Construction timing

Months to complete the building

16 Weeks to build the structure



Wind actions

Terrain category IV

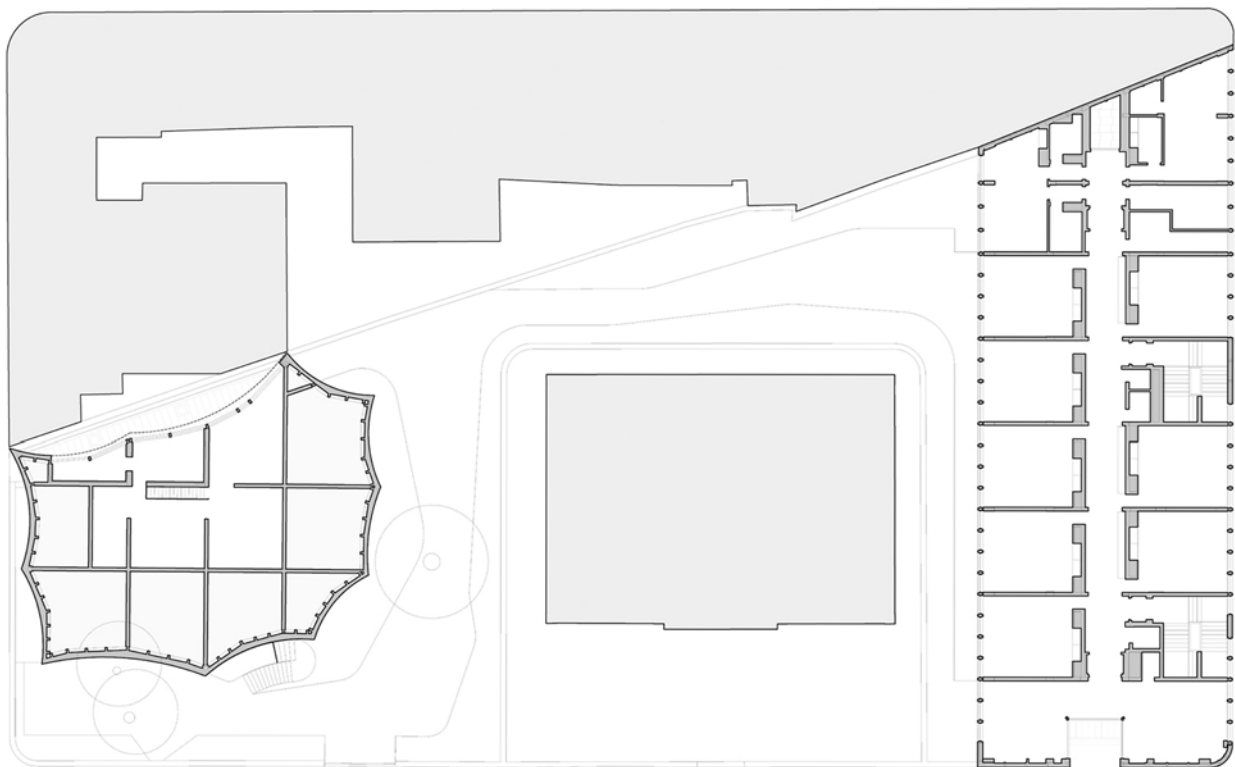
Area in which at least 15% of the surface is covered with buildings and their average height exceeds 15 m.

Slenderness

1,1




Concrete stairs core.
FG + SG <https://n9.cl/6256f>



General floor plan



 **Sustainability**

Abies alba Wooden specie

785 Wood volume (m3)

301 Potential CO2 benefit (t)

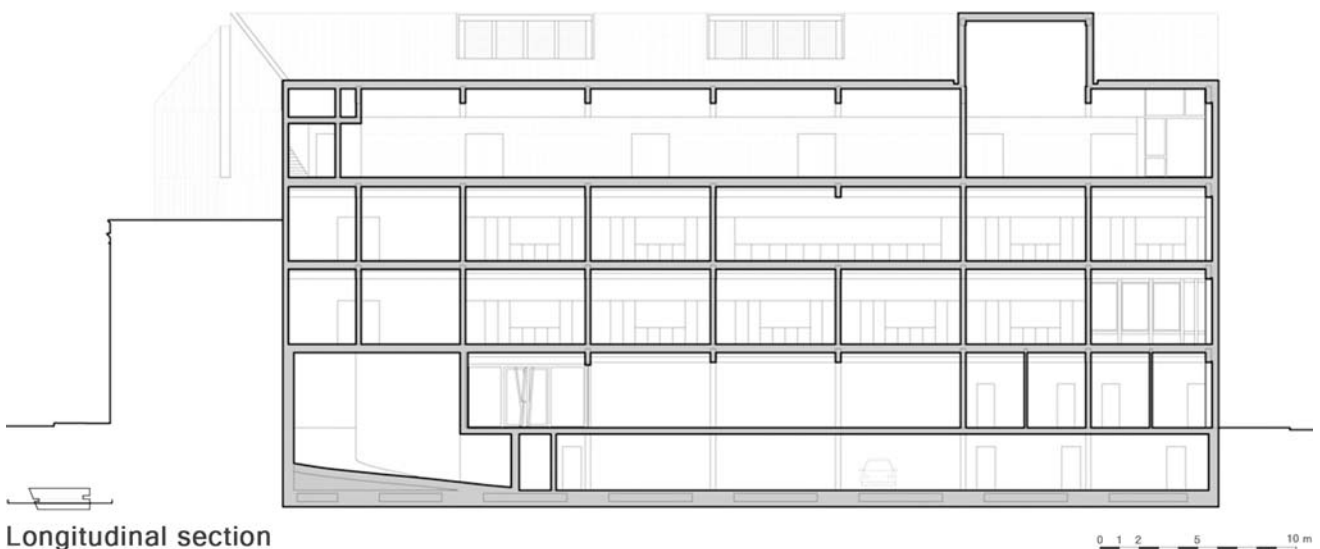
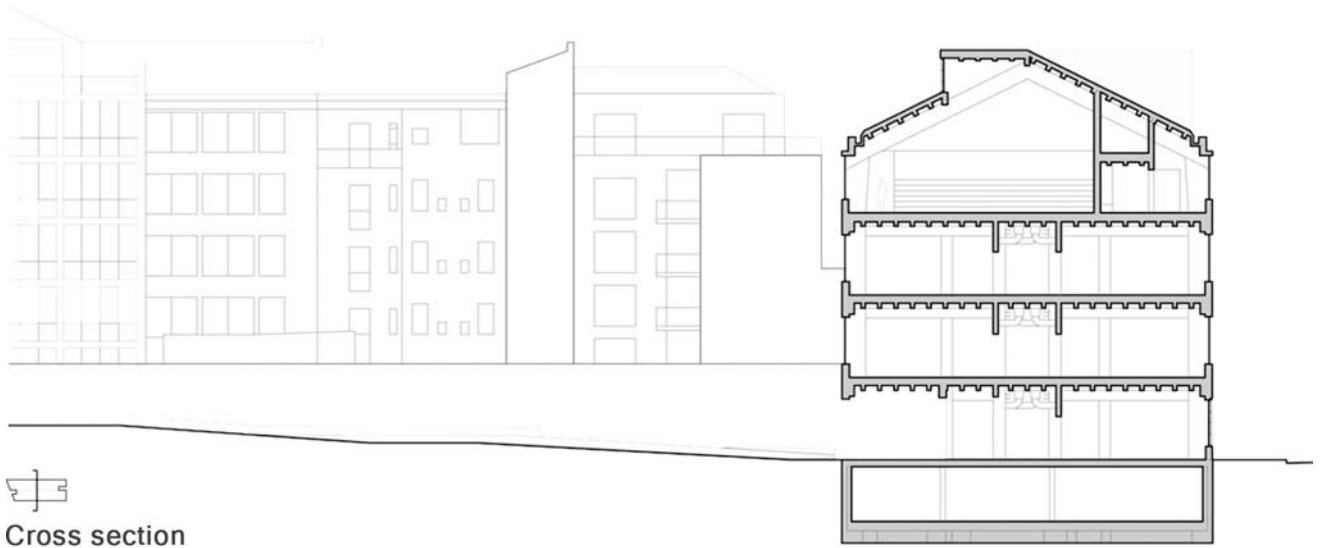
300 Distance of transportation (km)

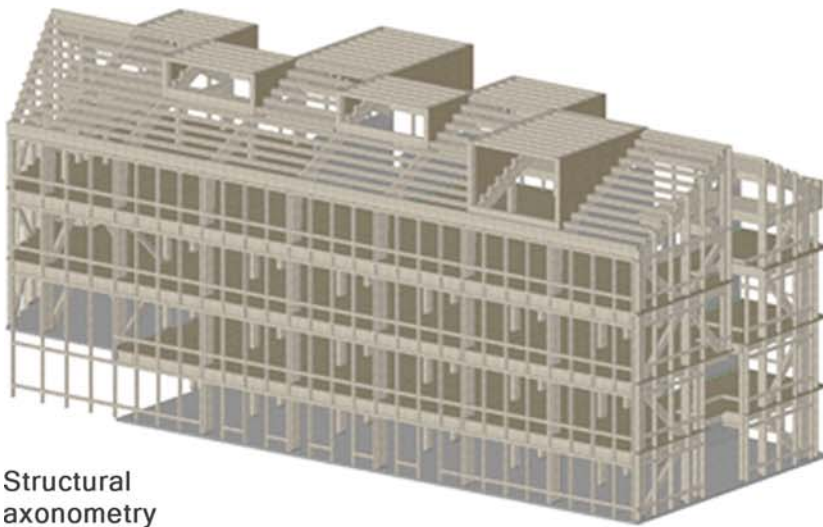
Special transportation needed

80% Percentage of structure made of wood

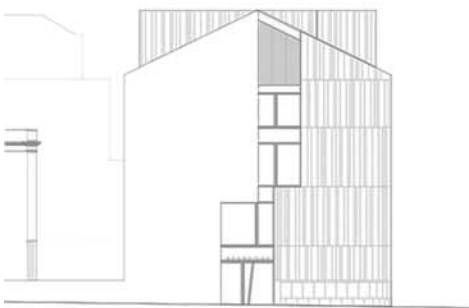


Construction process. Structure phase.
<https://n9.cl/cv2z>





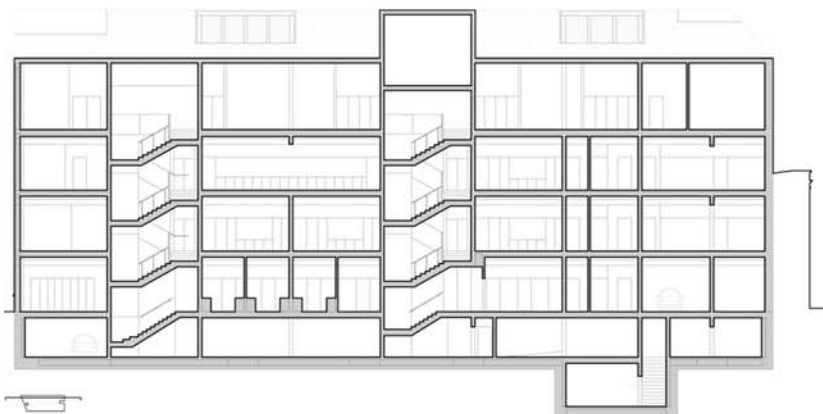
Structural axonometry



West elevation



South elevation



Longitudinal section

0 1 2 5 10 m



Aerial view of the roof.
Achitonic <https://n9.cl/wkauz>



Inner passage next to the longitudinal building.
Achitonic <https://n9.cl/wkauz>



References:

- Alves Ribeiro, S.A. Online survey on 14.05.21.
- CARMO. Online survey on 30.06.21.
- Archello <https://n9.cl/6256f> [23.03.21].
- AR.X <https://n9.cl/r5s7w> [23.03.21].
- Architonic <https://n9.cl/wkauz> [23.03.21].
- METALOCUS <https://n9.cl/xc6su> [23.03.21].