Els Encants School: An Atmosphere that Promotes Exchange and Learning

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ELS ENCANTS SCHOOL: AN ATMOSPHERE THAT PROMOTES EXCHANGE AND LEARNING

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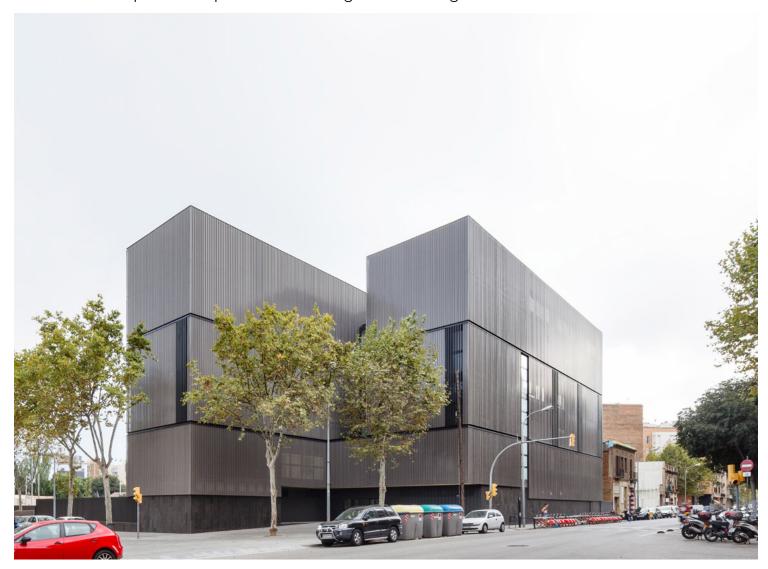
Categories: <u>Barcelona Metropolitan Area</u> (AMB), <u>Energy and sustainability</u>, <u>Middle Density</u>, <u>Project</u>, <u>Urban Paradigms</u>

Tags: Barcelona, Community, Concrete, Educational Building, Leisure, Lighting, Lightweight Materials, Metropolitan Barcelona, Performative Envelope, Project, School, Symbolic context, Thermal comfort, User's experience, Well-being, Zero Energy

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A school with a pilot teaching project in Barcelona's public school system. The Glòries area, currently being transformed, pushes the building to respond to the urban scale and bursts in inevitably, in advance of the development of the final planning. Inside, neutral spaces that are open and bright create an atmosphere that promotes exchange and learning.



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The school is located in a post-industrial urban area on the edge of Barcelona's Eixample. The dispersal of the city and the lack of local references led us to take a forceful approach in terms of the building's volumes and an abstract take on language.

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The façade, made from perforated sheet metal, evokes a past of industries and small workshops and lets us create a permeable filter between the classrooms and the city, between the school's activities and the street. It also serves to soften the direct sunlight and create high-quality lighting that heightens concentration and is, therefore, favourable to learning.

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The classroom area generates a central space for communication and interchange, which connects to the outside through the classrooms, which are open and permeable, thanks to the wide-glazed surfaces. The interior finishes provide the school with luminosity, neutrality, and transparency and help encourage the institution's commitment to a teaching model based on promoting and accompanying children's curiosity and favouring their relationships with classmates and their surroundings.

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On the façade, the use of large steel panels provided the building with a clear-cut urban scale, while simplifying the assembly and later maintenance. This latter aspect was present in all of the design decisions; in this respect, we chose materials with a long useful life or elements that could be easily repaired.

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The building has a high thermal performance envelope through the use of a ventilated façade with continuous exterior insulation, while a waterproof membrane enables transpiration. The roofs also ensure a thermal insulation coefficient that is much higher than that required by regulations.

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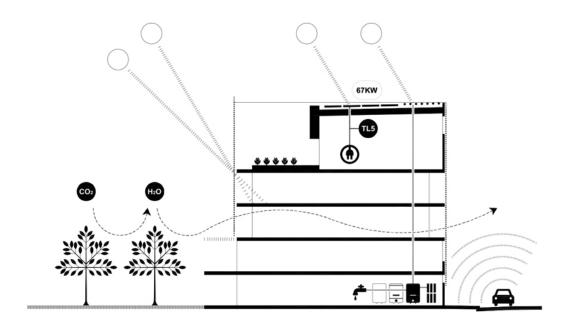
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Given the subsoil's characteristics, the building's weight was reduced as much as possible to avoid the need for a deep foundation. The building consists of a double block connected by a central space with porticoes every 7.5 metres to adapt to the dimensions of the classrooms. The classroom spaces are covered by one-way slabs based on lightweight concrete shuttering slabs, while a solid slab that ties the whole complex together covers the remaining spaces.

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To achieve zero energy balance, the project includes 254 solar panels installed on the roof, a domestic hot water (DHW) production system based on three cascade condensing boilers with the support of an array of solar panels and an accumulation system, and the building's double block typology is used to create the optimum climate for the installation.

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