

A vertical extension in Sant Cugat del Vallès: doubling the space upwards

A 1960s house in Sant Cugat del Vallès gains a full second floor. The vertical solution solves a space problem without compromising the existing structure or the neighbouring homes.

Last June, PAPIK Group began construction of a vertical extension on a house in Sant Cugat del Vallès. The owners' initial idea was to solve a lack of space with a horizontal extension of 15 m² on a 54 m² home. Reflection on the project, however, took the solution in a very different direction.

From a horizontal extension to doubling the floor

A second assessment examined a vertical extension of 27 m², adding a storey that would cover half of the upper surface. The final project went further still: a vertical extension over 100% of the existing floor. This added 54 m² of living space with a full second floor, housing three bedrooms and a bathroom.

Growing upwards rather than sideways preserves the garden and the plot area, and it is often the most efficient answer when available land is limited. In this case, the decision multiplied the usable space without giving up the house's outdoor surroundings.

A structure that does not load the existing walls

The original house, built in the 1960s, has no vertical foundations. It rests on a horizontal slab on which the walls sit. This characteristic shapes any intervention in height, because the ground-floor walls are not designed to take additional loads.

For this reason, the new structure has been built so that it rests directly on the existing slab, without transmitting loads to the ground-floor walls. The measure was taken as an extra precaution to avoid possible cracks in the adjoining homes.

The figures behind a conservative decision

The caution may seem unnecessary from a strictly load-based point of view. During the works, 18 tonnes of structure were removed and replaced by less than 15 tonnes, the calculated weight of the new floor. Even though the load balance was favourable, the safer solution for the neighbouring buildings was chosen. Quality is achieved through details of this kind.

This way of working is the same one we apply in energy retrofit and Eskimohaus construction projects: read the existing building carefully before intervening, and decide from technical judgement rather than from haste.

A vertical extension is not only about gaining square metres. It means recognising what an existing construction can bear and always deciding in favour of the safety margin.