

Pineda 58, phase 1: the preliminary study of a Passivhaus home

This opens a series documenting the construction of a certified passive house, from the land to the keys. The first stop is the preliminary study, where the plot determines much of what will be possible.

This article opens a series that will follow, step by step, the construction of a certified Passivhaus passive house. The path runs from the moment the client presents the available land to the handover of the keys, and it aims to show, with transparency, the decisions behind each phase.

Throughout the series we will move through the stages that structure any project of this kind at PAPIK Group: design, construction, insulation, certification testing and final finishes. Each phase answers the previous one, which is why the first, the preliminary study, conditions everything that follows.

The Pineda 58 project

The Pineda 58 project involves building a new home in Palau-solità i Plegamans. The brief is to construct a house that meets Passivhaus requirements while making use of the garage already present on the plot, so that the existing element is integrated into the new building rather than demolished.

The clients own a 480 m² plot. It is a surface that offers room to work and, above all, allows the house to be placed with a south orientation, a decisive factor in any home aiming for certification.

Why orientation decides almost everything

In a Passivhaus home, passive solar gain is one of the most efficient and least costly sources of thermal comfort. Orienting the main rooms and glazing towards the south makes it possible to capture radiation in winter and, with the right shading elements, to keep it out in summer. The Pineda 58 plot makes this orientation possible without compromise, which simplifies the later decisions on design and energy demand.

The preliminary study also identifies the shading present on the site. In this case, the only shadows come from the existing pine trees, which must be felled to make the construction of the house possible. Documenting this shading before designing avoids surprises in the energy calculation and in the real performance of the finished home.

What the preliminary study delivers

The preliminary study is not an administrative formality but the moment when the plot makes clear what is possible and what is not. Available surface, orientation, elements to preserve and shading constraints are all fixed before a single wall is drawn. From there, the design can work with real data rather than assumptions, which is how we build our Eskimohaus homes.

In the coming articles in the series we will move into the design phase, where these conditions become a specific home, and later into construction and certification testing. If you want to understand how the airtightness of a finished house is verified, we explain it in detail in our article on the Blower Door test.

A passive house does not begin with a drawing but with a careful reading of the land that will hold it. The preliminary study is where the project stops being an intention and gains real limits.