

PassivPalau: Catalonia's second certified Passivhaus

In Palau-solità i Plegamans, PAPIK Group has built a single-family home with a timber structure that brings the German Passivhaus standard to the Mediterranean climate.

PassivPalau is the second Passivhaus in Catalonia certified as passive by the German Passivhaus Institute. Located in Palau-solità i Plegamans, in the province of Barcelona, it is a detached single-family home built to the German standard adapted to the Mediterranean climate, at a cost of 1,200 euros per square metre.

The project answers a clear brief from the owners: a traditional house with a timber structure and very low energy consumption throughout the year, without compromising interior comfort. The solution combines building techniques native to the area with passive strategies that reduce the building's energy demand across the seasons. PAPIK Group is a builder specialised in the [construction](#), [retrofit](#) and vertical extension of energy-efficient homes.

A 130 m² house oriented to the sun

The home has a built area of 130 square metres and faces south-west and south to make the most of solar radiation. A space in front of the house is set aside for a garden and vegetable plot. The modular timber structure was prepared at the PAPIK Group workshop, which made it possible to raise the home in four months.

The project's figures summarise its performance:

- Built area: 130 m²
- Price: 1,200 €/m²
- Annual electricity cost: 500 €
- Annual domestic hot water cost: 88 €
- Return on investment: 6 years

Airtightness and the elimination of thermal bridges

To obtain the Passivhaus certification, thermal bridges were minimised as far as possible and high-performance glazing was installed in every window. The Blower Door airtightness test returned a result of 0.24, well below the maximum of 0.6 required for certification.

Thermal comfort and air quality

Interior air quality was another of the owners' objectives. To ensure a healthy environment, a ventilation unit from the Swiss brand Zehnder was installed. The home has no conventional heating system: the Zehnder unit helps maintain the interior warmth and, for the coldest days, a sealed wood-burning stove has been provided in the living room as backup.

Lighting is entirely LED and the appliances carry an A+ energy rating. Domestic hot water is produced with a domestic tank fitted with an insulated cylinder. The home's water is collected separately so that it can later be reused in the vegetable plot.

A builder specialised in energy efficiency

PAPIK Group's buildings are defined by high thermal resistance, quality and airtightness, factors that deliver strong energy efficiency, a healthy and comfortable interior and good value for money. For every project, PAPIK Group brings together a team of experts that works side by side with architects and clients, advising, designing and manufacturing the building elements the project requires.

Technical credits. Builder and developer: PAPIK Group. Architect: Eva Jordan Guerrero (ARQUITIR). Energy consultant: Micheel Wassouf (ENERGIEHAUS). Technical architect: Joan Vilanova i Nogué.

With an airtightness of 0.24 and an estimated six-year return on investment, PassivPalau shows that the Passivhaus standard is fully viable in the Mediterranean climate.