

What a passive house is and why it consumes so little

A passive house does not aim to generate energy, but to avoid consuming it unnecessarily. Insulation and air renewal are the two keys to comfort.

Passive houses are homes designed with a precise objective: to consume the minimum energy needed to guarantee interior comfort. It is not about adding generation systems such as solar panels or wind generators, but about avoiding unnecessary energy consumption. With this philosophy the greatest environmental benefit is achieved, because the greenest watt is the watt that is never consumed.

Insulation as the first principle

To achieve this, the structure of a passive house provides strong insulation that keeps the interior temperature steady regardless of outside conditions. That insulation prevents heat in winter, or coolness in summer, from escaping outwards, so there is no need to generate more heat or bear the energy cost of the heating system, whatever kind it may be.

Insulating is not sealing airtight

Some believe the best insulation is the one that seals the home airtight and completely separates inside from outside. The reality is different: a house needs to renew its air for safety, comfort and healthiness. Good insulation, therefore, is not simply about sealing the home, because it must renew its air to guarantee a healthy household.

Renewing the air without losing temperature

There are several methods to ventilate without losing temperature. One of them is the structure's own transpiration, which renews the air without any loss of heat. It is this combination, insulating and breathing at once, that lets a passive house keep its comfort with very low consumption.

PAPIK Group's building system

At PAPIK Group we have created a building system capable of offering insulation and air renewal without heat loss. Timber structures and breathable insulation make that combination possible: a house that breathes and insulates, that does not consume, that saves and that proves efficient and respectful of its surroundings. This principle guides both new construction and [energy retrofit](#) projects.

Our passive houses offer an excellent level of insulation in every sense and can be certified with the Passivhaus standard, which guarantees the lowest energy consumption.

The comfort of a house depends not on how much energy it can produce, but on how much it manages not to spend.