

Welcome to your certified Passive House Institute Low Energy Building (PHI LEB).

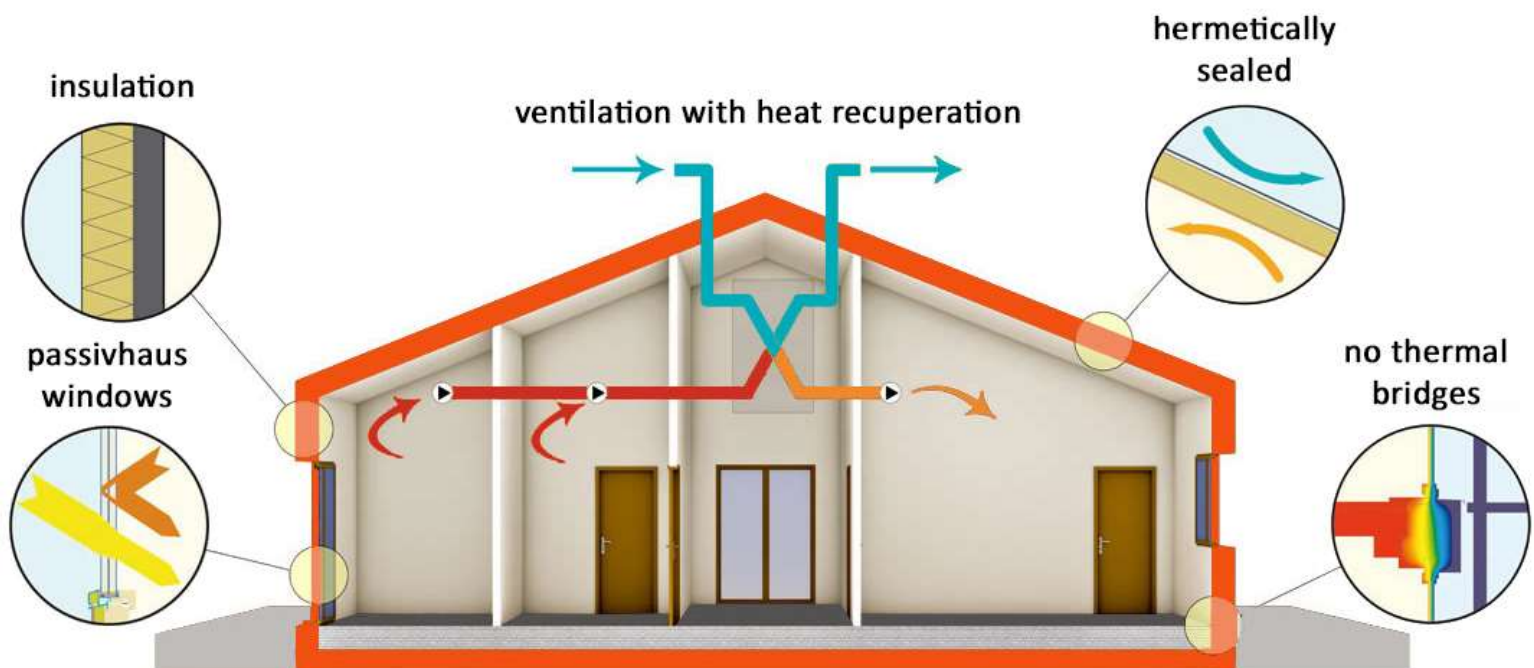
This guide has been devised to describe how and why your building functions as a certified Passive House.

Passive Buildings are defined as those which need little or no additional energy.

When thinking about your home, it is important to remember that only a small trickle of electrical energy is used to create a constant internal temperature. The majority of the heating demand is provided passively from the sun.

Your home has been certified by external consultants and the Passive House Institute. To use the PHI LEB logo above, there are 5 key areas which your home must conform to, in order to achieve Passive House Certification:-

1. Glazing
2. U-Values
3. Thermal Bridge free construction
4. Airtightness
5. Heat Recovery Ventilation



1. Glazing & Solar Gain:

By definition, Passive means that which uses little or no additional energy, so glazing/orientation and shading play an important role in generating the thermal energy within your home.

Your windows are triple glazed and are a Net Gain in terms of thermal energy, meaning that they will **generate more energy that they lose** over a typical year.

2. U-Values:

Your home has higher levels of insulation than a typical home, thus it is better at containing the energy the windows provide and, as a result, only a small trickle of energy is used to maintain a comfortable internal environment.

3. Thermal Bridge free construction.

Your home has been very carefully designed to ensure that the insulation is continuous and unbroken, forming an envelope around the home. This Thermal Bridge free design ensures minimal heat loss at crucial junctions in your home's construction. Junctions would be defined as anywhere there is a change of construction. This could be floor to wall, wall to window, wall to roof etc. This helps to create the "Tea Cosy" effect where the seams are functioning as well as the main fabric.

4. Airtightness:

For any high-performance home Airtightness is a necessity and is crucial to maintaining the internal temperature. Your home has been tested independently as part of the certification process of the Passive House Institute. This means that your home has met or exceeded the PHI LEB standard of 1ACH at 50 Pascals.

5. Mechanical Ventilation with Heat Recovery (MVHR).

A High-Performance home, such as yours, generates much of its own energy through the net gain of the windows. The excellent fabric and its airtightness then contains that energy. This Airtight, Passive structure therefore needs to be ventilated with clean fresh air. This is done so by Mechanical Ventilation with Heat Recovery (MVHR).

MVHR means that fresh air is constantly supplied to the building and distributed into Living rooms and Bedrooms. The stale air from Kitchens/Bathrooms is constantly extracted.

Within the MVHR unit these two air streams do not mix but pass by each other through a series of plastic fins. About 80% of the heat in the air that is leaving the home "jumps" across these fins to warm up the incoming air.

The shortfall of 20% is made up primarily with the glazing/solar gain and backed up by an auxiliary heat source (in your home these are electrically operated radiators automated by the MVHR unit). This heat recovery process is used to maintain the air temperature within your home and provide hot water to your hot water cylinder.