The Larch House User Guide

This house is a Passivhaus. The term passivhaus refers to a specific low energy construction standard for buildings, which have excellent comfort conditions in both winter and summer. They typically achieve a heating saving of 90% compared to existing housing. Passivhaus buildings are easy to live in and require little maintenance, but they do have some important features, which are explained in this guide. The features are simple to operate, but are key to the buildings success.

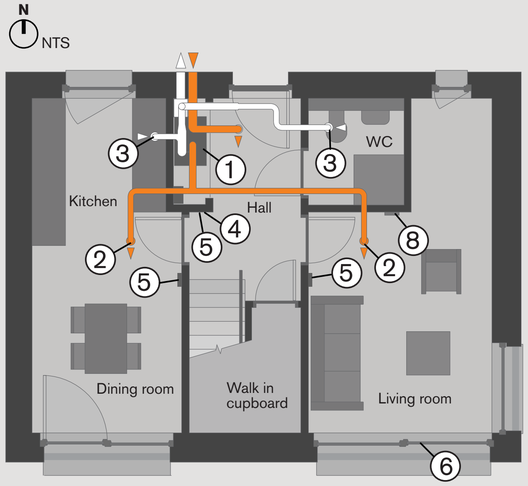
This guide has been design by Alan Clarke and bere:architect for you (the user) to understand how a passivhaus works and how to operate the controls in this house.

Each feature is labelled on the drawings below, highlighting their locations and briefly explaining how to operate them in the corresponding text. Please take the time to read this guide and familiarise yourself with the controls.

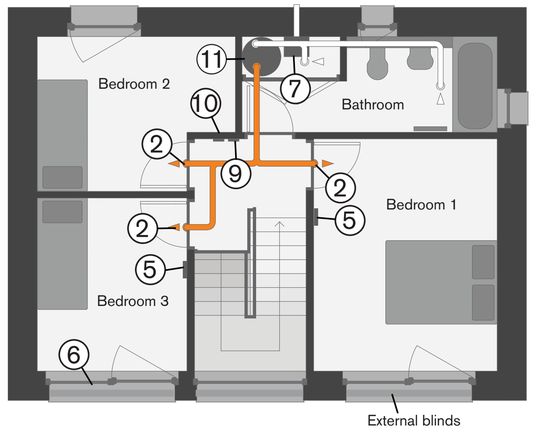
Legend for the below diagrams:

- Extract ducts
- Supply ducts
- Wall construction
- Elevation indication

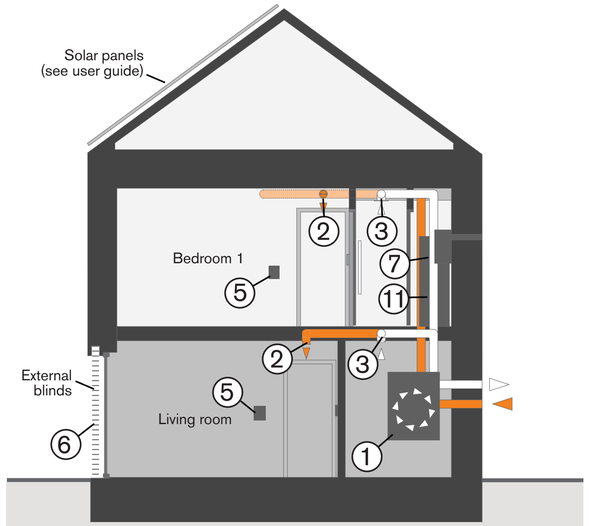
The Larch House: North elevation



Ground floor plan



First floor plan



Section A-A

① Heat recovery ventilation unit

This saves heat out of air taken from the house and puts the heat back into the fresh air supply to the bedrooms and living room. It saves about 10 times more energy than it uses!

② Fresh air vents

The heat recovery ventilation unit keeps the air fresh and pre-warmed in winter, using these fresh air vents. The system is automatic or you can adjust the speed manually by the controller beside the kitchen door.

③ Extract air vents

These vents get rid of smells and damp air from the kitchen, bathroom, and airing cupboard. The heat recovery unit saves the heat, which saves money. The ventilation runs continuously during the cooler half of the year.

④ Heat recovery ventilation control panel

The fresh air system can be left on “auto” but you can press the boost button during cooking or if the bathroom is steamy. If you go away during the winter leave it on the lowest speed ‘1’ to ensure warm fresh air on your return.

⑤ External blinds control (for summer cooling)

In summer the outside blinds stop the house getting too warm from the sun. These come down automatically in the summer when sunny except in the dining room so you don’t get shut outside, but can also be manually operated. If it’s too windy outside the blinds will retract to prevent them being damaged.

⑥ Windows (for summer cooling)

To keep cool in the summer take advantage of colder night time temperatures outside and leave the windows open in the secure “tilt” position overnight. If it’s hotter outside in the day you can shut the windows and external blinds and then run the heat recovery ventilation to keep cool inside.

⑦ Timer for boiler

The timer on the boiler controls the heating on/off periods. This should be set for all-day-long because the ventilation system is designed to provide gentle continuous heat. It can’t give a quick boost like radiators can.

⑧ Thermostat

The thermostat in the living room sets the temperature in the room. 20-21°C is the normal temperature, but you could turn it down if you go away for a few days. The thermostat buttons include a green eco button which turns the temperature down for a few hours, say when you want to go out, but this is not necessary.

⑨ Towel radiator control

The towel radiators have temperature dials on them - these control how hot the radiators are to maintain a set temperature in the bathrooms - leave the dials set at number 3 for normal use. If you want to run them for a while when the heating isn’t on, press the ‘boost’ switch on the landing.

⑩ Hot water temperature

Hot water should always be ready - the tank is very well insulated so it won’t cool down overnight. You can see how much the sun has heated has the bottom half of the tank by looking at the display. In winter most of the hot water will come from the boiler.

⑪ Hot water from the sun

In summer the whole tank is heated up by the sun when it shines on the solar panels on the roof. In winter the sun heats the bottom half of the tank and the boiler heats up the top so you always have hot water even when three is no sun.

⑫ Heating

A Passivhaus does need a small amount of heating. This comes from the fresh air supply and the towel radiators in the shower room and bathroom. The heat comes from the gas boiler in the airing cupboard. It’s a normal small boiler it just doesn’t get used a lot. The boiler also tops up the hot water tank.

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For further information about these features:

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