A guide to your PassivHaus Home

This booklet is a quick and easy guide to help you get the best out of your new home.

gentoo

This quick reference guide will give you an overview of the design features in your home, answer some frequently asked questions as well as provide instructions on how to use the various non-standard controls that are placed in your home.

What is different about your home?

PassivHaus homes:

- Are the world's most energy efficient homes
- Use efficient components and a whole house ventilation system to achieve exceptionally low running costs
- Are comfortable, healthy and sustainable
- Have excellent levels of insulation
- Have excellent indoor air quality, provided by a whole house mechanical ventilation system
- Use solar and internal passiv heat sources
- Have excellent levels of air tightness

Design features – an overview

Your new home is designed and built to PassivHaus standard and has four environmental energy saving design features including:

1. Solar design
Your home is designed to maximise solar gain. The rays from the sun heat your home through the large amount of window area to the south facing facade, which:

- Supplies one third of the minimum heat demand of the house
- Increases the energy efficiency of your home

Solar energy is free and using solar gain reduces the need for mechanical heating, in turn reducing your heating bills. Solar energy is a renewable, non-polluting energy resource.

2. Super insulation
Extremely thick insulation has been used in your walls, floor and roof. This reduces heat lost, ensuring that you live in a more energy efficient home. Heat is not only lost through conduction through the building fabric but also through warm air escaping through small gaps at corners, edges and junctions. This is why your home has been made draught proof.

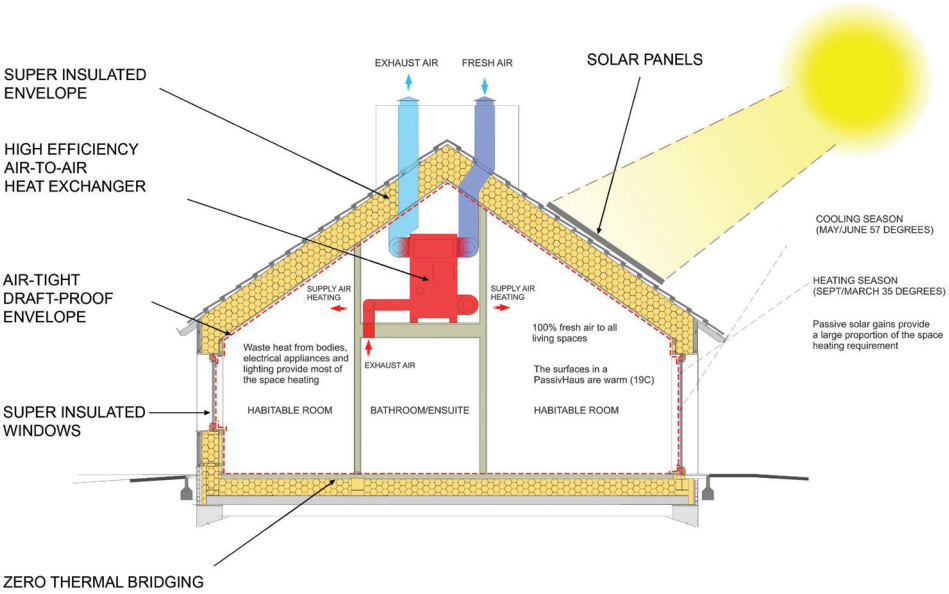
3. Energy efficient triple glazed windows
Large amounts of glazing can be a source of heat loss. To prevent this, your home has been fitted with low-emissive triple glazing that loses very little heat with good thermal insulation within the frame.

4. Mechanical ventilation heat recovery system (MVHR)
Fresh air is provided by a mechanical ventilation heat recovery system (MVHR). Your home is super insulated and highly airtight, to keep the heat in, it requires a continuous supply of fresh air to ensure comfort and to remove stale air from places such as the kitchen and bathroom.

The MVHR draws in fresh cold air from outside and as the fresh air is taken in the stale air is expelled. The fresh air and stale air pass through a heat exchanger which takes the warmth from the stale air and uses it to warm the fresh incoming air. This is then delivered to the rooms through the ventilation system.

The ventilation system breathes fresh air into your home.

This extracts humidity and removes stale air from your home.



You must not alter the position of either of these vents.

The MVHR system helps to reduce the amount of energy needed to heat your home.

Opening windows reduces this effect.

Energy efficient appliances

Your home comes complete with the following energy efficient appliances:

- AAA rated slimline dishwasher
- A+ rated fridge freezer
- A++ rated washing machine

Renewable systems

Some homes have also been installed with a solar hot water systems and solar photovoltaic (PV) panels. The use of such equipment is another means of making your home more energy efficient.

Solar hot water systems

If your new home benefits from being fitted with solar thermal panels you will be provided with free energy which is used to heat the water within your hot water tank. The heat captured by these will be directed to the hot water cylinder. This will not meet the hot water needs all year and some top-up will be required. The hot water will be topped up by heating pipe work from the communal gas boiler.

Q: How does my solar thermal panel heat water?
A: A pump circulates heat transfer fluid (water or water mixed with anti-freeze) through the solar panel. The fluid becomes hot whilst in the panel and is pumped through a 'coil' within your hot water tank. This has the effect of heating the water within the tank. The fluid leaves the coil and is pumped back up to the solar panel. This process continues until the water in the storage cylinder is at a sufficient temperature or there is no solar energy being collected, for example during hours of darkness.

The benefits of a solar hot water system are that a proportion of the hot water requirement of your home is provided for free by the solar system, and a proportion is provided by the boiler.

Photovoltaic (PV) panels

Some properties have been fitted with PV panels. These are light receptive panels that sit on your roof and use daylight to create electricity. PV uses daylight and generates electricity even on cloudy days.

Q: How do they work?
A: The PV panel is located where it will get good light levels (in this case the panel is located on the roof). The semi-conductor material within the panel generates power when exposed to daylight. The Inverter sends the electricity to the main circuit breaker panel in the house. From there, the electricity can go into the house to run appliances.

The benefits of a solar PV system is that a proportion of the electricity requirement of your home is provided for free. This should help reduce your bills and carbon footprint.

> **Did you know?** A typical 2 kilowatt peak (kWp) system of around 16m2 could generate up to 40% of your average electricity use

Hint: To get the most out of your system you need to use most of your electricity during the day when the sun is shining. If this isn't possible, consider investing in some timed appliances.
Please note that your home is still connected to and will use mains electricity. Therefore you will still receive electricity bills from your chosen utility provider.

Frequently asked questions

How does PassivHaus work?
Imagine your house like a flask. Instead of just insulating the walls and the loft, the insulating layer is around the whole of house. Super insulation and strict levels of air tightness create a `flask' effect which keeps the heat in. The homes are designed to optimise heat from the sun. The only technical bit is the MVHR.

Do I need to switch my heating on?
PassivHaus homes do not need a conventional central heating system. They are super insulated, and highly air tight, therefore lose very little heat.

For most of the year you will not actually have to switch on any heating as `free' heat from the sun shining through the large south facing windows plus heat from appliances and from the occupants will be trapped inside by super insulation. As a result you hardly need any traditional heating.

Only in winter when there is little sunshine top-up heating will be required. Top-up heat will be delivered into rooms as warm air via the ventilation system. This heat is generated by a small heating coil fed from a communal gas boiler.

Boilers are maintained by Gentoo.

How is my heating controlled?
There will be an ordinary heating thermostat in the living room which you can adjust to maintain a temperature which suits you. The most efficient way to set and use your room thermostat is to find the lowest temperature setting that you are comfortable with at the different times you have chosen and then leave it alone to do its job.

The best way to do this is to set low temperatures first, say 18ºC, and then turn them up by one degree each day until you reach your preferred setting. You won't have to adjust the thermostat any further. Any adjustments above these settings will waste energy and cost

Your home has been fitted with a 'Honeywell ST6100A' timer and 'RET 230' electronic room thermostat with LED stat calling indicator. These items work together as the controls for your heating and hot water.

A room thermostat works by sensing the air temperature. It will switch **ON** the heating when the air temperature falls below the thermostat setting and switch it **OFF** once this set temperature has been reached.

Can I open the windows during the winter?
Although the windows can be opened, you do not need to open them for fresh air. The MVHR draws in fresh air from outside. The windows are triple glazed and so, when shut, they keep your home quiet as well as warm.

Can I open the windows in summer?
When it is summer and you are not heating your home, the windows can be opened and the MVHR can be switched to 'extract-only' when needed to ventilate the bathrooms or kitchen.

What about cooking odours, drying clothes and steamy showers?
The MVHR has a boost facility to deal with cooking odours and steamy showers. This is controlled by a boost button in these rooms.

In addition to the kitchen extract provided by the MVHR, there will be a re-circulatory hood above the cooker which will also filter cooking vapours.

We have also provided you with an outdoor rotary drier, so you should not need a tumble drier. If you want to install a tumble dryer it must be the condensing type (or combined washer/drier), to avoid vent penetrations through the draught proof construction of the external walls.

There is an airing cupboard which has a small radiator at the bottom and an exhaust to the ventilation system, to take moist air away. Normally the radiator is set to room temperature, but pressing the radiator boost button in the cupboard turns it up for several hours to help dry clothes.

Can I make any changes to my home?
Your home has been designed to be extremely draught proof. This helps it stay warm. This is the reason why there is an external mail box instead of a letterbox through the front door. To make sure that your home remains this way you should contact Gentoo before making any changes. Damage to the draught proof covering by peg, nails, screws and to the seals around window should be repaired immediately.

Why are there no radiators in the rooms?
Your heating is delivered to the rooms as warm air through the MVHR system. That is why there are no radiators in rooms.

Why do I have an external letterbox?
Your home is highly air tight and an external mail box has been provided to avoid losing heat through a conventional letter box in the front door.

How will I be charged for my heating?
A heat meter is installed in each property which will measure the amount of heat from the communal boiler used in your home. You will only be charged for the heat you use. You will still need to pay your electricity bills.

Does the system run 24/7 for 365 days of the year?
The system is set for automatic use all year round so you do not have to adjust any settings. However, you may want to override the automatic system on some occasions.

Can I dry clothes?
Yes, clothes dry very well indoors and create some moisture which is beneficial. You may also like to grow plants.

What is summer purging?
If you experience unusually high outdoor temperatures and your home is too hot, it is recommended that you 'summer purge'.

1. Simply open windows during the night so that the cool air can enter and reduce indoor temperatures.
2. During the hot day, close your windows and increase the fan speed on your control panel to increase ventilation.

What do I do when I go on holiday?
You can reduce the ventilation while you are away. Simply go to your control panel and press reduce fan speed, when you return home just press 'return to standard setting' and your system will return to normal operation.

Useful tips

The following pages for simple instructions on how to use the various non-standard controls that are placed in your home.

By using these controls effectively you can make sure you get the best out of your PassivHaus home.

Dos and don'ts:

✓ **Do** keep your windows closed as much as possible
✓ **Do** keep the MVHR running continuously in winter
✓ **Do** use the best energy saving appliances (A++ rated) and low energy light fittings (compact fluorescents)
✓ **Do** use the shower rather than running a bath as much as possible
✓ **Do** ensure taps are turned off when not in use
✗ **Don't** leave blinds or curtains drawn during winter days
✗ **Don't** alter your home without first contacting Gentoo

Boost switch

The MVHR unit boost switch. This is located outside your kitchen and bathroom.

Press this button before taking a shower/bath or while cooking to boost ventilation. The unit will run at a faster extract speed to clear humidity from the kitchen and bathroom spaces

The boost will run for 15 minutes or until you press the button again to stop it.

Radiator boost switch

The radiator boost switch is outside your bathroom and is used for your towel radiator in your bathroom. When the button is pressed the radiator will be heated for a time period of either 30 minutes, 1 hour or 2 hours.

Press the radiator boost button to up the time period.

A LED light will be lit to indicate time period selected.

Touchstat for drying cupboard

The touchstat provides manual control of heating with an integral timer which can be activated simply by pressing the touch plate. This is located inside your drying cupboard.

Heating will boost to a higher temperature setting, automatically reverting to a lower set back temperature, after the set time period.

Control unit For MVHR

This button is the control unit for mechanical ventilation heat recovery.

This is located inside your drying cupboard.

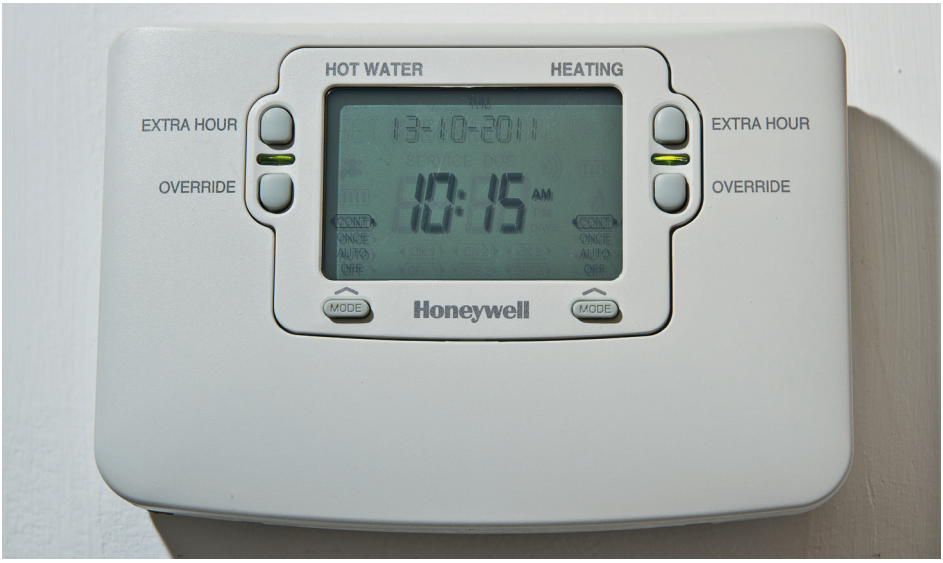
The control button has been set-up to run the system at the best performance for your property. In the summer time if your property is too hot you can press the extract only button on the MVHR controller. This will set the MVHR unit to extract only, therefore removing warm air from the property. To get the benefit from the MVHR system in the winter the unit will need to be set to supply and extract.

Channel time clock

Your channel time clock is located in your drying cupboard. This is 24 hour for the programming of hot water and heating.

We recommend that your heating is run on constant to be more efficient and cost less money.

Please refer to manufacturers instructions for detail on set-up.



Carbon monoxide detector

A carbon monoxide detector is installed in your hallway. In the event of this alarm activating open the doors to allow ventilation of the space.

Always have this unit checked by gas control after an activation (even in the event of false alarms).

Switched fused spur (for outside socket)

The switch fused spur is used for the switching on / off of the external weatherproof socket. This will be located in either your bedroom or living room.

In the event of the socket not working, please check/replace the fuse as it may have been overloaded by appliances that have been plugged into the external socket.

Notes

If you or someone you know would like this information in large print, on CD or in Braille then please contact your local office.

If you or someone you know would like this information in another language, then please contact your local office. Interpretation services are available.

যদি আপনি বা আপনার জানা-শোনা কেউ এই তথ্য অন্য কোন ভাষায় পেতে চান, তাহলে দয়া করে আমাদের সঙ্গে যোগাযোগ করুন। দোভাষী পরিষেবা পাওয়া যাচ্ছে। (Bengali)

如果您或您認識的人希望此信息是其它語言，請與我們聯繫。口譯服務可提供。(Cantonese)

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如果您或您认识的人想要本信息以另外一种语言版本提供，那么就请与我们取得联系。我们同时还提供口译类服务。(Mandarin)

Jeśli Państwo, lub jakaś osoba, którą Państwo znają, chcieliby otrzymać te informacje w innym języku, proszę się z nami skontaktować. Dostępne są także usługi tłumacza ustnego. (Polish)

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