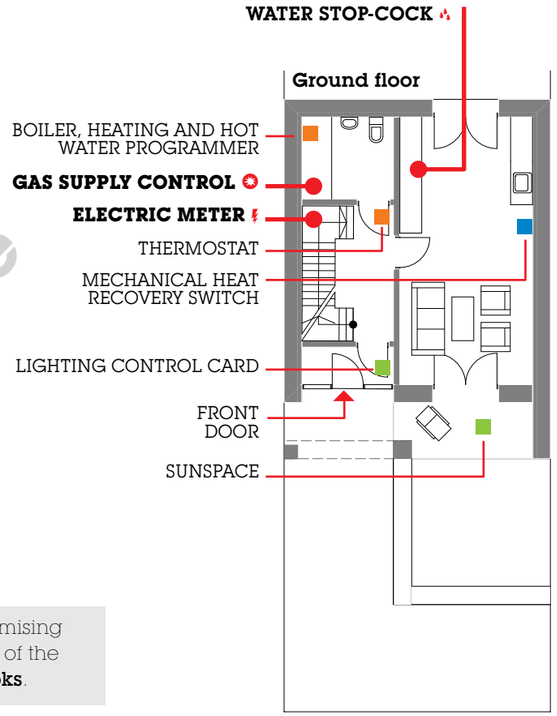
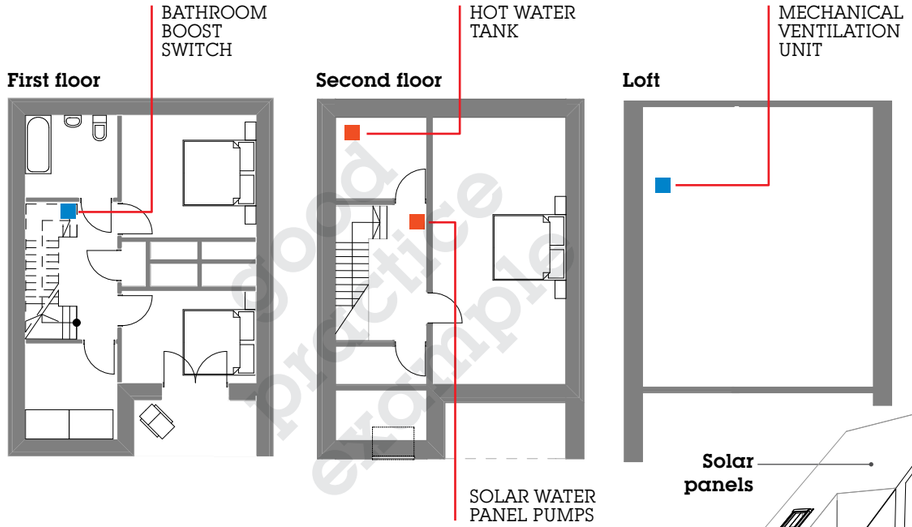
How Your Low Carbon Home Works

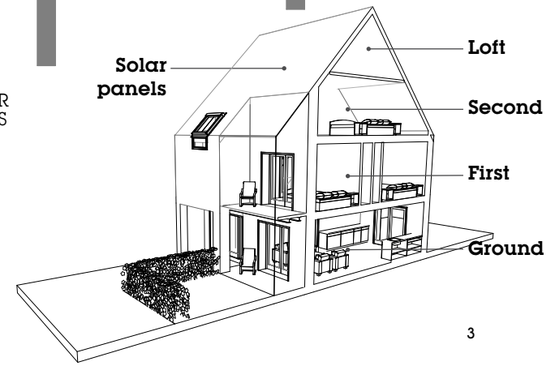
- Overview
- Heating
- Ventilation
- Hot Water
- Energy Saving Features
- Keeping it Working

Your house



This guide is produced to meet the aspect of optimising the performance within **Section 7: Sustainability** of the **Scottish Building Standards Technical Handbooks**.





Your house

Welcome to your new home. This quick start guide is designed to help you get the best out of your new house, keeping your bills and carbon footprint as small as possible.

Your house is designed to keep the heat in, it is constructed from timber frame with a timber roof structure and is very well insulated. It has double glazed windows and well insulated doors.

Your house has an efficient gas fired heating system, mechanical ventilation with heat recovery system and your hot water is heated by your gas boiler and solar panels. It also has sun spaces in front of the living room which can bring warm air into the house when it is sunny.

Roof

The roof has a timber structure and is insulated with 350mm insulation. The OSB board on the inside of the roof is designed to prevent air leaking out, if you need to make holes in it, be sure to seal the edges well. The roof tiles are recycled rubber tyres. If tiles break, you should order new ones.

Doors

Your doors are high performance insulated doors with double glazing and 'Low E' glass. They meet the police standard 'Secured by Design'.

Sunspace

On the front of the house is a sunspace, it is outside the insulated part of the house and is designed not to be heated. When it is sunny it will warm up and you can open the doors to let heat into the house. See page 13 for more information.

Walls

Your house is built from a timber frame which is fully filled with 140mm insulation, the bricks are fixed to this frame. Your home has been carefully detailed to avoid draughts, you should avoid drilling holes deep into the wall to avoid creating a new route for draughts.

Windows

Your windows are high performance double glazing with 'Low E' glass. They meet the police standard 'Secured by Design'. All of your windows open and can be cleaned from the inside. There are escape windows in bedrooms on the first floor.

Heating

Your heating system is powered by a gas combi boiler. This provides heat for your radiators which warm the rooms. You need to adjust the thermostatic radiator valves (TRV's) and thermostat to get a comfortable temperature. If you keep your house cool it will cost less to run, a warmer house will give you a bigger fuel bill.

The construction of the house can retain heat in the winter so that it stays warmer for longer than many other houses. If the house gets too hot remember to turn the heating off before opening the windows.

The sunspace on the front of the house is designed to help keep the house warm, page 13 shows how it works.

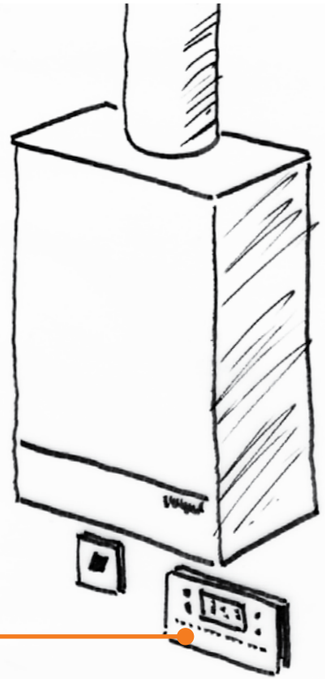
Programmer

LOCATION: Underneath boiler. The programmer turns the system on and off and should be set to do this when occupants are in the house.

(Manufacturer and model number here)

Boiler

LOCATION: in the utility room. The boiler is A-rated with ultra-low emissions. It provides both heating and hot water. It is turned off by the programmer and temperature in the houses is controlled by a thermostat and radiator valves.



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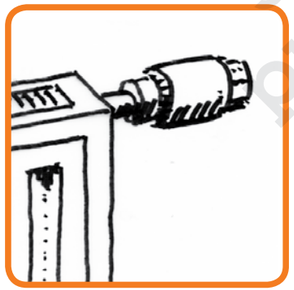
Thermostat

LOCATION: Ground floor hallway.
The thermostat turns the boiler off when the house has warmed up, it overrides the TRV's. Set it to the temperature that you want your hall to be, this may be lower than the temperature of your main living rooms. 18°C is comfortable.



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Thermostatic radiator valves (TRV's)

LOCATION: On every radiator. These valves control the amount of heat coming out of individual radiators. When the room is at the right temperature they turn the valve off. If it gets cooler the radiator warms up again. The setting 1 is quite cool, 4 is warm. 5 is no warmer than 4, but means the radiator does not turn off even if it gets very warm.

DO learn how to set your programmer. There are instructions for this inside the boiler cover.

DO set your thermostat for a comfortable temperature

DO set your Thermostatic radiator valves to provide comfort, normally 3 or 4 is about right

DO remember to make sure the clock is changed when the clocks change

DON'T set your thermostat too high, you can save energy and money by keeping this about 20°C or 21°C

DON'T set your Thermostatic radiator valves to 5

DON'T dry clothes over radiators

MORE INFORMATION:
See Manufacturers website at: (Website here)
See Manufacturers website at: (Website here)

Ventilation

The house is ventilated by a **Mechanical Heat Recovery system** (MVHR) and windows that can be opened. The building is designed so there are no leaks or draughts, so it's important that the ventilation system is used properly. The Mechanical Heat Recovery System sucks stale air out of the kitchens and bathrooms and brings fresh air in through the vents in the ceiling, but keeps the heat from the old air. It runs all the time, there are switches in the kitchen and bathrooms to boost the system to get rid of moisture or smells.

- **DO** turn on the extract fan when cooking
- **DO** use the boost switch in the bathrooms
- **DO** make sure that you clean the filters regularly
- **DO** open windows in the summer to get more ventilation
- **DON'T** turn off the MHRV system, it can lead to smells, mould and poor air quality

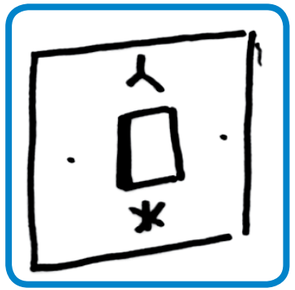
Mechanical Ventilation System

LOCATION: In loft (use a ladder to access it)
This very low power fan unit powers the ventilation system, it needs no adjustment. It has filters to ensure the air in your house is clean, you need to clean the filters (located behind flaps on the front of the unit) every month.

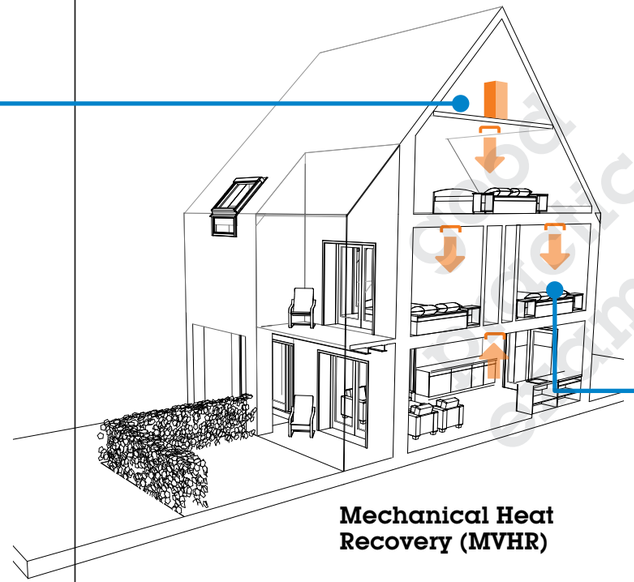
(Manufacturer and model number here)

Ventilation Boost ✸

LOCATION: Bathrooms and kitchen.
The boost button helps clear the steam and smells. Use it when you are using the bathroom or the kitchen and turn it off when you are finished.



Engraved switch



Mechanical Heat Recovery (MVHR)

MORE INFORMATION:
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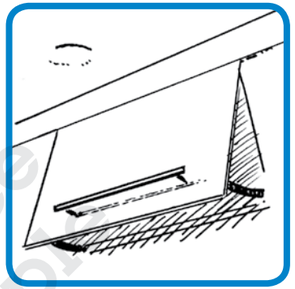

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✸ Cooker hood

LOCATION: Above hob in kitchen.
In addition to the ventilation system, there is a cooker hood to help remove smells from the kitchen. It cleans the air and recirculates it into the room. Pull the handle out to turn the unit on.

(Manufacturer and model number here)

Vents

Most rooms have a vent that supplies or extracts air. Do not adjust these or block them up.

Hot water

Hot water comes from the boiler and also the hot water solar panels on the roof. The solar panels heat the water when it is warm or sunny outside. You don't need to do anything to this system.The gas boiler heats the water when there is not enough sun, the controls for this are part of the heating system programmer.

Hot water is stored in a hot water tank, turning the taps or shower on will draw water from it. The tank contains enough for about 5 showers. If the water begins to run cold you will need to turn on the boiler and wait for the cylinder to warm up again - this will take about 90 minutes.

You have a valve on the bath which limits the water temperature to 48°C to prevent accidental scalding.

- **DO** set the programmer to give you hot water when there is not enough sun
- **DON'T** adjust the solar panel's

Solar Panel

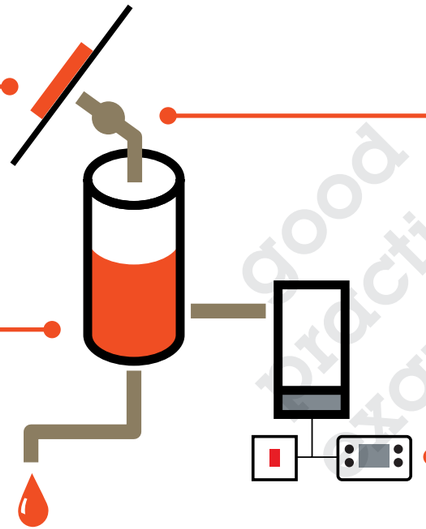
You have one on the front and one on the rear roof, you will find that during the summer the solar panels will heat up your water so you may not need your boiler on in the mornings.

(Manufacturer and model number here)

Hot Water Store

Location: Cupboard on top floor.
There is no need to make any adjustments to these controls.

(Manufacturer and model number here)



MORE INFORMATION:
See Manufacturers website at: (Website here)
See Manufacturers website at: (Website here)

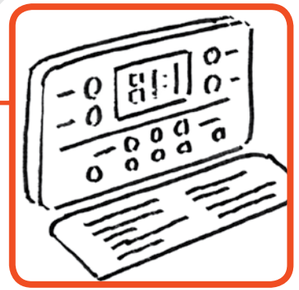
Solar Panel Pumps

LOCATION: Cupboard on top floor.
There is no need to make any adjustments to these controls.

(Manufacturer and model number here)

Programmer

LOCATION: Underneath the boiler in utility room.
This programmer controls the hot water and heating system. Programme it to come on at specific times to suit your lifestyle. There is a boost button which can be used to turn on the boiler if it is needed unexpectedly.



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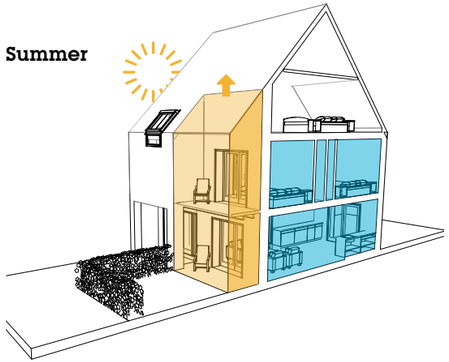
Energy saving features

Your house has the following energy saving features:

- sunspaces
- low energy lighting
- lighting control card

Using them effectively will reduce your energy bills.

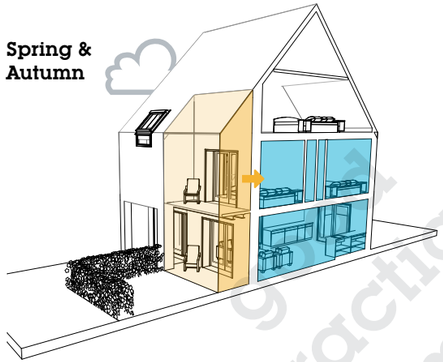
Your house is designed to use low energy light bulbs, they last longer than normal light bulbs and use much less energy. Remember to replace blown bulbs with low energy types.

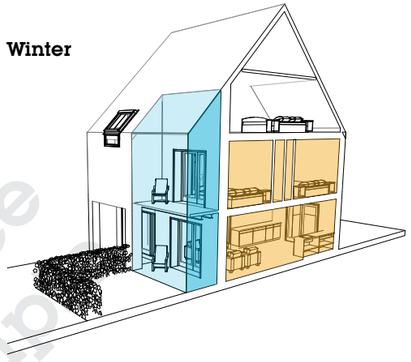


(Manufacturer and model number here)

Lighting Control

LOCATION:By the front door. It is designed to turn off all the lights when you leave the house. Remember to check there is a card in the slot if your lights don't work. This card reader takes any type of plastic card.





Sunspaces

When it is sunny this space will heat up and you can open the doors into your bedroom and living room and let the heat into the house. In the summer, if this space gets too hot, open the vents in the glazed roof to let the heat out, remember to close them when the temperature drops. When it is cloudy, this space will be cold, keep the doors shut to keep the house warm. This space is not designed to be heated.

- **DO** use your sunspace to heat the house when it is sunny
- **DO** close the sunspace doors when the weather is cloudy and cold
- **DON'T** put a heater in the sunspace

Keeping it working

Your house requires regular maintenance to ensure it continues to work well for many years. Poorly maintained systems tend to be more inefficient and cost more to run.

Every Month

Wash filters in the ventilation system
Clean sunspace windows

Every Year

Boiler check by Registered Gas Safe Engineer
Replace the filters in the ventilation system (insert type and manufacturer)

Resources

Your welcome pack contains the manuals for the following equipment.

Heating

Programmer
See Manufacturers website at: (Website here)

Boiler
See Manufacturers website at: (Website here)

Ventilation

See Manufacturers website at: (Website here)

Hot Water

Programmer
See Manufacturers website at: (Website here)

Boiler
See Manufacturers website at: (Website here)

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