



Glossary

A

AECB – Association for Environmentally Conscious Buildings. Provides professional retrofit advice using Enerphit principles.

Air Source Heat Pump - a low carbon central heating system that uses the latent heat from external air, and increases it to provide central heating and hot water

Airtightness – the principle of ensuring the fabric of a building does not have uncontrolled air leakage.

B

Battery Storage - stores excess electricity. Can be connected to solar panels or use cheaper rate electricity.

Breathable – the ability of moisture to move through building materials. Also known as vapour permeable construction.

Boiler Upgrade Scheme – government grant currently available to replace current boiler with heat pumps or biomass boilers.

C

Carbon Emissions – carbon emissions released into the atmosphere from burning fossil fuels.

Cavity Wall Construction – a type of construction used mainly in the 20th and 21st centuries, where two layers of masonry are separated by a cavity/space.

Cavity Wall Insulation – insulation inserted into the cavity to slow down heat loss.

Chimney Balloon - an inflatable chimney draught excluder to reduce heat loss through an open chimney.

Circular Economy – a set of principles to tackle climate change and other global challenges. In the built environment these principles are (1) Maintain existing buildings (2) Refurbish existing buildings (3) Repurpose and adapt existing buildings (4) Re-use building components as much as possible (5) Recycle building materials and products where possible.

D

Deep Retrofit – a whole house approach which carries out all the energy efficiency measures at one time.

Decarbonisation – is the reduction in carbon dioxide emissions from a building, or energy production process.

Decrement Delay – the ability of an insulation product to hold onto/ slow down the flow of heat. Works in a similar way to thermal mass.

Double Glazing - windows with two panes of glass with a gap between them. The gap can be filled with an inert gas to reduce heat transmission.

Draughtproofing – sealing gaps in the fabric of a property to prevent cold air entering, or warm air escaping.

E

Embodied Carbon – emissions associated with building materials and the construction process throughout the whole life of the building. This includes maintenance, repair, refurbishment or repurposing done during the building's life.

Energy Efficiency Measure (EEM) - any measure installed in a property that improves the energy efficiency of that property.

Energy Performance Certificate (EPC) – EPCs are required for properties when they are sold or rented out, however, they are not required for the sale of listed properties. They provide a guide for owners and occupiers about the energy efficiency of the property, based on assumed running costs.

EnerPHit – a voluntary established standard for refurbishment of existing buildings using Passive House basic principles and components (definition below), but not seeking to achieve the high targets of Passive House.

External Wall Insulation (EWI) – insulation fixed to the outside of buildings which reduces the rate of heat loss.

F

Fabric first - a system of retrofit which concentrates on improving the building fabric with insulation, draughtproofing, windows and doors to reduce heat loss before adding low carbon heating and renewables.

Flat Roof Insulation – a layer of rigid insulation, usually installed above the roof structure.

Floor insulation - insulation installed under or over a floor to retain heat within a building (see suspended floor insulation and solid floor insulation).

Fossil Fuels – non-renewable energy sources such as gas, oil and coal.

G

Ground Source Heat Pump - a low carbon central heating system that uses the latent heat from the ground and increases it to provide central heating and hot water.

H

Hygroscopic – a material that can absorb moisture from the air.

I

Insulation - material added to a home to reduce the movement of heat.

Intermittent Extract Ventilation - extractor fans in bathrooms, kitchens and utility rooms that expel humid air.

Internal Wall Insulation (IWI) - insulation applied to the inside of walls to reduce the rate of heat loss.

J

Joules - another term for watts ($1W = 1J/s$), a measurement of energy consumption.

K

Kilowatt (kW) – a unit of power which explains how much energy an appliance needs to run. 1 kilowatt = 1000 watts.

Kilowatt-hour (kWh) - the unit of measurement determining how much energy is used. Gas and electric use are measured in kWh.

K-value - represents the thermal conductivity of a material and measures the materials ability to conduct heat. Expressed in watts per metre per degree Kelvin (W/mK). Low values are better than high values. (See also R-value and U-value).

L

LED Lighting - lighting that gives off very little heat. LED bulbs use 90% less energy than old incandescent bulbs and 50% less energy than compact fluorescent bulbs (older energy saving bulbs).

Loft Insulation - insulation fitted within a loft area to reduce heat loss. Usually installed above the flat ceiling. (See also Sloping Ceiling Insulation).

Low Carbon – causing or resulting in only a small release of carbon dioxide into the atmosphere.

Low-emissivity (low-e) Glazing - a coating added to glazing which reduces the passage of uv and infrared entering and leaving the window without affecting the amount of natural light. It can help keep houses cool in the summer and warmer in the winter.

M

Micro-generation – production of heat or electricity from a low carbon source (e.g. solar panels or heat pumps).

Microgeneration Scheme (MCS) certified - products, installations and installers that meet MCS standards.

Mechanical Ventilation with Heat Recovery (MVHR) - a whole house ventilation system that extracts heat from outgoing air and uses this to warm incoming air.

Mechanical Extract Ventilation (MEV) - a whole house ventilation system that can be centralised (cMEV) or decentralised (dMEV). The extract fans (in kitchens, bathrooms and utility rooms) run continuously with a boost mode.

N

Net Zero – balancing the amount of greenhouse gases being released into the atmosphere with those being removed from the atmosphere.

Non-designated heritage asset – buildings, monuments, sites, places, areas or landscapes that have been identified by the Council as having a degree of heritage significance to merit consideration during the planning process, but not sufficient to meet the criteria for formal designation.

O

Optimum Viable Use – the energy efficiency measure that is least likely to cause harm to the significance of a heritage asset.

P

PAS2030 - the British Standard for the installation of energy efficiency measures.

PAS2035 – the British Standard and framework to ensure quality during a retrofit project.

Passive House/Passivhaus – a rigorous energy efficiency standard where the building retains a constant temperature. The principles include (1) no thermal bridging – see definition (2) mechanical ventilation with heat recovery systems (3) high quality insulation (4) airtight construction (5) highly efficient windows.

Passive ventilation – this is a way of removing stale air from inside a building without using mechanical systems, for example opening a window.

Pugging – a material inserted between floors and ceilings to reduce noise transmission. This can include sawdust, clay, mortar, shells or sand (note that other materials are also used).

R

R-value - represents the thermal conductivity of material at a certain thickness. Materials with a high R-value are better at resisting the passage of heat.

Renewable Energy – energy from natural sources such as sun and wind, or from under the ground.

Retrofit – the process of installing new products or systems to improve a building's energy efficiency, reduce its energy use and carbon emissions.

Retrofit Assessor - qualified professional who surveys a property to record the energy performance, condition and occupancy of a property.

Retrofit Co-ordinator - qualified professional who plans and project manages the installation of energy efficiency measures.

Retrofit Designer – qualified professional who produces designs and drawings that show how energy efficiency measures are installed. Usually, an architect or architectural technologist who has received retrofit training.

Retrofit Hierarchy – the order in which to carry out retrofit works to an existing building.

S

Secondary Glazing – an additional layer added to the inside of an existing window frame to reduce draughts and heat loss.

Sloping ceiling Insulation - insulation fitted between and either below or above rafters.

Solar Gain – heat transmitted from the sun via solar radiation. Solar gain can cause overheating if windows face due south or west.

Solid floor insulation - insulation fitted either below or above a solid ground floor.

Suspended Floor Insulation - insulation fitted between and/or below floor joists.

T

Timber Framing – when a building's structure is built from timber. This is often infilled with brickwork, lath and plaster or wattle and daub.

Traditional Construction – a building which has a solid wall construction (no wall cavity). This may be constructed from stone, brick, or timber.

Thermal mass – properties of the building construction that enables it to store heat and slowly release the heat once the temperature cools down.

Thermal Bridge (cold bridge, thermal bypass) – weak points in the construction which allows heat to pass through more easily.

Trustmark - the Quality Assurance body overseeing PAS2035. It has details of certified professionals including retrofit assessors, coordinators and installers.

U

U-value – the rate of heat loss through a given area (m²) of building fabric. Includes all materials within that element (e.g. bricks, plaster, insulation, render). The lower the u-value the better the element is at reducing heat loss. Uses the R-values of all individual material components.

V

Vapour Permeable – the ability of a construction or insulation material to allow the movement of water vapour.

Ventilation - controlled air flow through a building to reduce incidence of condensation and mould.

Vernacular – a style of construction related to the local area, using traditional materials and resources.

W

Whole House Plan – a comprehensive or holistic plan for works to a building to ensure that it is as energy efficient as possible. These works consider potential upgrades or alterations to every part of the building.

Z

Zero Carbon - no carbon emissions are produced from a product or service, when in use.