

Useful sustainability definitions - zero carbon, PassivHaus and others

Passivhaus - A dwelling which meets the Passivhaus standard will include very good levels of insulation with minimal thermal bridges; good utilization of solar and thermal gains; excellent levels of air tightness. This means the home needs very little heating or cooling. A dwelling is deemed to satisfy the PassivHaus criteria if the total energy demand for space heating and cooling is less than 15 kWh/m²/yr treated floor area. The total primary energy use for all appliances, domestic hot water and space heating and cooling also needs to be less than 120 kWh/m²/yr. For energy requirements of the code PassivHaus will usually meet code level four.

Code for sustainable homes level 5 – This is where net carbon emissions are 100% less than building regulations in 2006. The CO₂ emissions are from the energy used for heating, hot water and lighting, so code level 5 is achieved when CO₂ levels are reduced or generated onsite.

Zero carbon- This is where net CO₂ emissions resulting from all energy use in the dwelling is at zero or better. This includes energy used in the operation of space heating /cooling and hot water systems, ventilation, internal lighting and electrical appliances. It also takes into account contributions from onsite renewable/low carbon installations.

A zero carbon home must also have a heat loss parameter of 0.8W/m²K or less, and net zero CO₂ emissions from the use of appliances and cooking in the homes.

The table below charts the code level energy requirements each standard is likely to achieve. To reach code levels other requirements will need to be met including but not limited to water efficiency; waste recycling and surface water run off. For more information on code requirements of code levels do get in touch.

Note PassivHaus can be used as a base to go on to achieve higher code levels.

Code level 1	Code level 2	Code level 3	Code level 4	Code level 5	Code level 6
			PassivHaus	100% less than building regulations	Zero Carbon