

Sustainability credential – carbon footprint reduction measures.

The Self build will incorporate several Eco features, set in place to reduce the carbon footprint of the property, and external energy demands that it may impact on.

The key start point here would be to note the construction method. An insulated concrete formwork, which provides very high U values and forms an almost air tight, and thermally sound structure. The chosen method, is called ISOTEX, which is an ICF system with the formwork made from Recycled timber, that will be pumped with concrete into the core of the blockwork provide fantastic performance and exceptional thermal gain to keep the house cool in the summer months and warm in the winter months, reducing the need for heating substantially. The roof will be made from Structurally insulated panels (SIPs). These too add to the thermal efficient make-up of the building alongside, a sustainable timber construction. The house will achieve close to a passivhaus standard, with this specification.

The aim is to integrate as much solar PV as is reasonably practicable. Alongside this, I will be aiming to install a large battery storage unit (11kw+) and an electric vehicle charge point for my own use.

Ideally, we would be looking at a rooftop install of over 10KW which in turn, will reduce the electrical demand of the property by approx. 80%.

The intentions are to not even connect to main gas. The heating system will be provided via an underfloor heating system fed via a Ground Source Heat Pump (GSHP). Utilising the size of the curtilage, we have enough space to dig vast underground trench systems to bury our pipes. This in turn, will deliver warm, consistent temperature water to warm the house where required.

There is potential, to look to move towards a system such as Bunsen Air too, a thermodynamic panel system, which using just the air, generates domestic hot water for washing.

Moving onto the water. To again, attempt to reduce the demand for fresh pumped water, I shall be installing a rainwater harvesting unit. The rainwater gathered from the roof of the dwelling, alongside that from the garage structure, will aid with providing water for showers, washing machines and any garden use. The fallout from this means, aside from drinking/cooking water, the demand for freshly pumped water to the dwelling will be reduced.

Costly measure have been considered and implemented in the design of this dwelling. The house builder is passionate about the environment, and reduction in carbon footprint. The products mentioned above are not exhaustive, however are the best of their kind. Financially, the more expensive options have been chosen, mainly due to the plot size available, the requirements for a reduction in consumption, and also because the efficiency they offer is of the highest standard.

In summary the building will be designed to an exceptional level of thermal efficiency and go a long way to reduce the carbon footprint of the building, through the lifespan of the building, with no fossil fuels incorporated into the site along with recycled timber formwork for the external walls and the integration of renewable technology, to set a standard of building for many to follow in the future. This will exceed the new building regulations set at a national level.