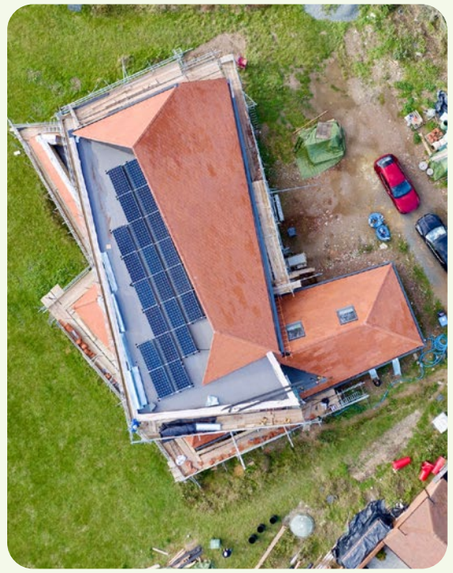
POWER

PV PANELS

An array of Photovoltaic panels which are used in collaboration with innovative technologies, to create a bespoke system which is able to serve the full energy requirements of the dwelling without the need for fossil fuels.

The panels generate the majority of their energy during the daylight hours in the summer months when there is the lowest energy demand by the house. The technologies employed in house aim to store the energy so that it can be used in periods of higher demand in the evenings and winter.



TESLA POWERWALL V2 (INC INVERTER)

The TESLA powerwall is a scalable battery system. The sophisticated battery unit has an internal inverter built in. The inverter manages the DC input from PV and manages its storage in DC batteries. The unit then converts this DC stored energy into AC to power domestic power loads from electric constables. Once the batteries are fully charged the powerwall is able to divert excess energy to charging the electric vehicle and the heat store.

In the event of a grid failure or generator power being disconnected, the inverter within the unit is automatically activated and takes over the supply to the connected loads. This happens so fast (less than 20 milliseconds) that computers and other electronic equipment will continue to operate without disruption.

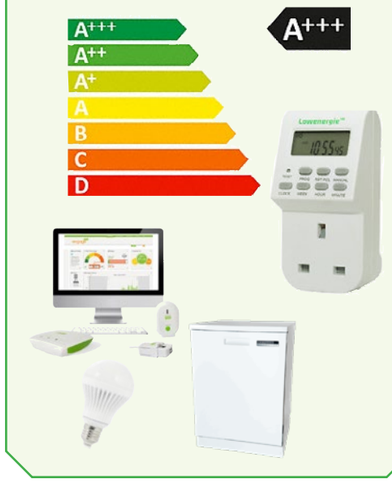
Electricity generated on site is stored in batteries and the heat store optimising on site energy dependance. “Generate on site. Use on site” is our vision for self sustaining dwellings.

EDDI

EDDI is an energy management system for use with the PV system. Excess energy from the micro-generation system is used to heat water or rooms rather than exporting to grid, once the base load is covered and batteries are fully charged.

APPLIANCES

A^{+++} rated appliances and socket controllers which turn off appliances in stand-by. These will reduce the base energy load of the house.



ZAPPI (MYENERGI)

The ZAPPI device enables excess energy from the micro-generation system to charge an electric vehicle once base load has been met and the domestic batteries have been charged.

VOLTAGE OPTIMISATION

The AC power supplied to the house appliances is at a higher voltage than is required. The voltage optimisation system lowers the voltage from the grid and batteries.

This reduces electricity consumption and lessens the wear on house hold appliances.

ELECTRIC VEHICLE

Energy produced by the PV array during the day can be diverted to charge an electric vehicle. Vehicle to home power supply enables the vehicle to provide additional storage capacity at times of peak production. This can then be drawn out at times of peak consumption.

HAWKES architecture