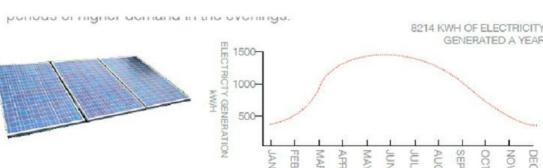


#### SOLAR THERMAL EVACUATED TUBES

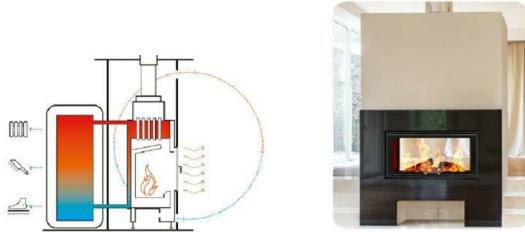
The panels rely on solar radiation to heat the fluid in the panels, so they are able to help raise the water temperature even on cloudy days. Fixed horizontally to the flat roof they perform better than flat plate collectors as they are able to collect light from a wider range of angles. The evacuated tubes are also subject to lower heat loss during the colder winter to give useful input on more days of the year.

The fluid within the solar thermal system dumps heat into the solar pre heat store. The lower temperature of the pre-heat store increases the period of the year when the solar thermal system can contribute to the hot water and heating demand.



#### PV PANELS

We have designed a renewable energy system comprising an array of Photovoltaic panels which are used in collaboration with an array of 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.



#### HIGH EFFICIENCY LOG BOILER STOVE

The log burner is an important focal point of the living space however its heat output to the room should be carefully controlled so not to overheat the well-insulated space. Most heat is extracted using the top boiler which will transfer heat to the PCM thermal store to be used later for hot water or heating the house through the MVHR system.



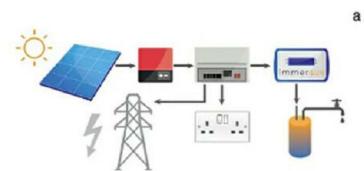
#### LIFE PO4 BATTERY BANK

multiple modular arrays of lithium iron phosphate (LIFE PO4) batteries provide an optimised long-life electrical energy storage solution. LIFE PO4 are suited to the partial charge scenarios required by domestic batteries. To ensure their long term health a battery an 'active-balancing' management system will be employed.



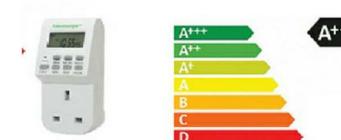
#### ELECTRIC VEHICLE

With the client working from home, 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.



#### IMMERSUN

The immerSun unit monitors the excess electricity generated by the PV array, about to be exported to the grid and diverts it to an immersion heater located in the PCM store. This efficiently converts the electricity into heat for on-site storage and use. Electricity generated on site is stored in batteries and the heat store optimising on site energy dependence. 'Generate on site, use on site' is our vision for self-sustaining dwellings.



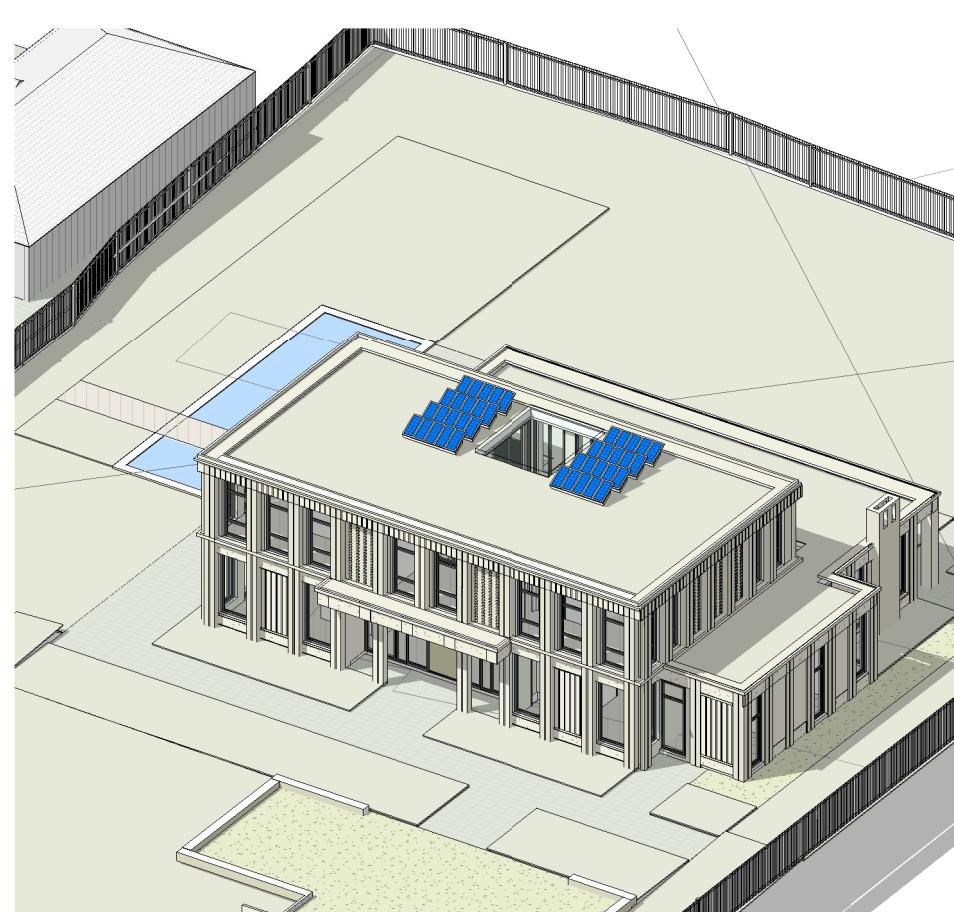
#### A+++ APPLIANCES

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



#### VICTRON QUATRRO INVERTER & CHARGER

This powerful true sine wave inverter is a sophisticated battery charger unit that manages the input from the grid and manages its storage in batteries. The unit then converts this stored energy into power to power domestic power loads from electric consumables. 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 10 milliseconds) that computers and other electronic equipment will continue to operate without disruption.



DRAWN BY ARCHITECT	ACCEPT / A REJECT / R	Rev	Date	Note
CHECK BY CLIENT SIGN / DATE		P1	16-10-23	PLANNING ISSUE
CHECK BY CONTRACTOR SIGN / DATE				
CHECK BY APPROVED INSPECTOR SIGN / DATE				
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR AND FABRICATOR OBTAINED BUILDING CONTROL + PLANNING APPROVAL PRIOR SITE WORK COMMENCE				
PROJECT 212 Sakeleys Road, Ickenham UB10 8AY				PLANNING APP 01
DRAWING TITLE SUSTAINABLE STRATEGY 1				J79 STUDIO
SCALE 1:200@A3	DATE AUG 2023	PROJECT NO. 1942		
REVISION P1	DRAWING NO.	A93		