

## **Chipping & District Memorial Hall**

### **Roof Mounted Solar PV Array – Design Statement**

This application is for full permission to install a roof mounted Solar PV array at Chipping & District Memorial Hall, Garstang Road, Chipping. PR3 2QH. The building is non-residential and borders a Conservation Area.

The design of the array has been optimised to give maximum electricity generation and hence CO2 saving, utilising both predominantly south and east facing roofs. The design considers the shape of the roofs and the impact of shading from the roof structure and adjacent trees. The resulting design uses 44 solar panels, each one having dimensions 1722mm x 1134mm x 30mm generating 450W, giving a peak output of 19.8kWp. The array is estimated to generate over 15,000kWh of electricity per year. The design has been, and the installation will be, carried out to Microgeneration Certification Scheme (MCS) standards by a reputable installer with a proven track record.

Permitted Development (Part 14 Class J of the General Permitted Development Order) allows solar panels to be installed on non-residential properties up to 1000mm from the roof edge. Residential properties, however, are allowed to install panels up to 400mm from the roof edge. To maximise electricity generation and CO2 saving for the roof size and shape this design places panels up to 400mm from the roof edge, hence the application for planning permission. The south and east facing roofs of the village hall are screened from the adjacent Garstang Road and close neighbouring properties by trees. The all-black design of panel has been selected to be the most unobtrusive when situated on the existing roof.

The installation also includes a 30kW battery storage facility which will be located within the main hall. It is estimated that up to 85% (13,300kWh/yr) of the electricity generated by the solar panels will be used by the village hall, either directly or from the battery storage. This equates to around 50% of the village hall's historical consumption which will bring a very significant cost and CO2 saving. Around 15% (2,300kWh/yr) of the electricity generated by the solar panels is expected to be exported to the grid, this will bring a small amount of income from the export tariff. In addition, it is planned to use differential day/night tariffs to import electricity from the grid during winter months to charge the batteries which will also reduce the overall electricity cost for the village hall.

The installation will be very beneficial for the sustainable operation of the village hall which has seen a dramatic increase in costs from utilities over the last 2 – 3 years. The installation will also generate electricity from a renewable source hence reducing the carbon footprint of the village hall and contributing to net zero targets.