Layout of PV panels

The metal roof on this suite of buildings is complex, presenting challenges to mount the system discretely as well as placing a maximum sized system for this building's electricity consumption. Large trees to the west also limit the placement of the PV panels.

The northern building has a roof that falls to the south with an 110 pitch. Normally, this roof would be avoided, but it has to be used to maximise the PV system capacity. The difficulty with this roof is that any panels placed behind the first group will be in their shadow for a larger part of the day. The solution is that only one array can be placed on this roof, with the panels placed in a portrait configuration on mounting frames with the panels at a minimum 100 elevation to the horizontal, or a total 210 angle to the metal roof facing north. The panels can be placed away from the roof edge so that they hopefully blend in with the roof.

The main building roof is curved in an arc shape with the highest part of the arc at the midpoint of the roof. An array of panels will follow the north facing profile, mounted in landscape mode to follow the roof profile – this orientation can be adjusted during construction if the fixing points are not suitable. A further roof to the north of the plant room is ideal for PV with an 110 pitch facing north. For some areas, the roof anchor system will need modification.

The following image shows the proposed layout of PV panels at the Centre.

