



CASE STUDY

PV40

AUMA Actuators, Kenn Road, Clevedon, North Somerset

Total Environmental Kooling Ltd (TEK) were appointed design and install mechanical and electrical sub-contractors by the developers and builders, Campbell South West Ltd., in summer 2009.

The scheme was for four industrial units of varying size, and before designs were complete the largest unit was sold to AUMA Actuators, who appointed the construction team as their design and install fit-out contractors.

The office accommodation has comfort conditioning provided by a heat recovery variable refrigerant volume (VRV) system, and the workshops and test areas have specialist electrical supplies at 400, 230 and 110 volts, all of which prompted AUMA to consider photovoltaic (PV) electrical generation on the south west facing roof of the unit.

TEK designed a system incorporating 178 Romag UK sourced PV panels to generate 40 kWp, with three inverters producing 400 volt, three phase electricity connecting into the electrical infrastructure of the building via a smart meter which allowed surplus power to be exported to the National Grid.



Section of roof showing PV panels

As Microgeneration Certification Scheme (MCS) accredited installers, TEK were able to provide AUMA with the necessary certification to apply for the new feed-in tariffs which realised an income of £0.28 for every Kwh generated, plus a further £0.03 for every kWh exported. The government has stated that the feed-in tariffs will be in place for at least twenty five years, so in addition to reducing their carbon footprint significantly, AUMA can look forward not only to a payback period on the system reckoned to be around ten to twelve years, but also an income from the system for the remainder of its service.

The panels are of robust construction and the glass technology assures that the panels are self cleaning, so maintenance is minimal and subsequently there is no requirement for fixed access.

Double benefit is gained by the use of of a VRV system for the office heating and cooling.

With plant seasonal efficiencies exceeding 3.5*, AUMA benefit from 3.5 kilowatts of heating / cooling energy for each kilowatt of electricity consumed.

As their highest demand is during the working day, maximum benefit is derived from the PV generated electricity. Indeed, it is likely that electricity bills will be a thing of the past for the next twenty five years at least.

With both photovoltaic and heat pump technology efficiencies increasing as technology improves, PV systems allied to heat pumps makes sense both financially and environmentally.



Three Fronius inverters

* *Dependant on external ambient conditions*

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Post-contract maintenance

