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22nd August 2007

Alan Loxley
Orchard house
NP4 0TE
on behalf of 1st Usk Scouts
Our Reference: EHS 070822a

Dear Sir

You have recently raised a number of questions relating to our Panasonic Energy Saver. This letter provides our responses to those questions (our responses are in red font).

In my view, heating options are either the heat pump, or a gas combi boiler / radiators. From a capital cost perspective, the heat pump is very attractive, but we've had some discussion within the committee and there are a number of concerns. Maybe you could comment on these?

1) We are concerned that one unit is not enough for the size of the building. This concern is based on the sizing done by the firm quoting for the gas boiler. If we have to provide high levels of additional heat from conventional electric (fan type?) heaters, this may negate any efficiency savings? Remember the building is likely to be used 3-4 evenings a week, for about 2 hours per occasion. It will need to be heated from cold each time. Can we do a more scientific sizing exercise?

Your building is 18.6m * 9.7m with a floor area of 190 m². Thus, 25 w/m² * 190 m² = 4.8 kW. This dimensioning is based on a ceiling height of 2.2 m. The capacity of the unit I have offered you is 0.8-6.5 kW with an average capacity of 4.8 kW, and this type of unit is in fact used in buildings up to 200 m² in Sweden - where it is considerably colder in winter. However, your building is quite tall, and you may find that in worst conditions, some supplementary heat is required. In your case, to ensure all heating loads are satisfied by the heat pump (for the SBEC certificate) it may be best to go for 2 units. This would obviously double the capital cost, but would provide a very high safety margin, ensuring no need for supplementary heat. The choice is yours!

2) There is a similar concern about the heat distribution, can we be sure that one unit will provide adequate distribution?

Yes, we are confident about this particularly if 2 units are used.

3) Do you have any similar buildings as a reference?

Yes, we have a village hall / youth centre in Sandwich, Kent. Their biggest room is 8 * 10 metres, but with tall ceilings of 4.5 metres, taking the total volume to be heated to 360 m³, i.e. about half of your installation.

You are most welcome to contact the Chair of the Phoenix Centre, his name is Phil Scott, on 01304 611106 or 07727 165307 or email philscott@thephoenixcentre.org.

4) There is a slight concern over the specialist nature of the equipment, and therefore potential servicing costs. If the equipment fails, who would we call? If specialists, what kind of response times could we expect?

In fact and in the unlikely event of the unit needing service an air conditioning engineer is fully capable of servicing the unit. We have established contact with a firm that is fully capable of providing services for you, they are Totalairsystems Ltd of 6 Avon Vale Road, Trowbridge, Wiltshire BA14 8QS, contact person John Francis 07860 448471 johnfrancis@totalairsystems.co.uk. They are about 55 miles from Usk, and should be able to reach the site in a reasonable time. I am awaiting their costs in writing which I will pass on to you when I have received them.

5) The building is surrounded by public space, is the external unit prone to vandalism?

Not directly as it is totally encased, but it does have electricity permanently connected to it as well as refrigerant, which is also permanently connected. There is always the option to "cage" it in, this will carry a reasonably small additional cost (included in my quotation).

I trust you'll have encountered many of these questions before, but this is a big decision for us, and we need to be confident before proceeding.

We appreciate this. We would like to point out that our "stored"¹ solar air source heat pumps are one of the most efficient space heaters on the market, with a rated efficiency of 433 percent (the best gas boiler has 85-90%). Further it uses forced air, which is much more efficient than traditional radiant heat. Running costs are extremely low - they only consume some hundreds of watt electricity when the space is heated. Government sponsored testing in Sweden has verified a kW saving of 63%, which can be directly translated to a 63% reduction in the buildings carbon footprint. ¹

¹ The heat pump collects the thermal energy from outside air, this air gets in turn its thermal energy primarily from the sun - hence "stored" solar.