

Meeting of Freeland Village Hall

Sustainability Sub-Group Tuesday 26th January 2010

Present: Martin Shann, Neil Edwards, Martin Merritt, Colin Smith

1. Design Criteria

The VH Working Party will need to specify what design criteria the Architect should be working to in terms of energy efficiency and sustainability. After discussion the sub-group proposed the following:

- As a minimum the building should comply with the 2010 building regulations due to come into force in October. Full details are currently not available however it is anticipated that these will require a further reduction in carbon emission from the current standards in the region of 25%. The sub-group assumes that the current cost estimates from the QS have been made on the basis of the current 2006 regulations as these are the current minimum standards. The current standard require for this type of building, a reduced building carbon emission of around 19% when compared with a similar building constructed to 2002 regulations.
- The group will investigate the implications of achieving a carbon neutral building (Note: the building regulations are expected to require all new buildings to be carbon neutral by 2020). This aspiration will be difficult to achieve requiring for example very high levels of thermal insulation, ultra low energy lighting and the inclusion of renewable technologies.
- As an aspiration we should aim for a BREEAM rating of Excellent. BREEAM (BRE Environmental Assessment Method) is the most widely used environmental assessment method for buildings. It is the de facto measure used to describe a building's environmental performance. Buildings are independently assessed against a number of criteria: Management, Health and Wellbeing, Energy, Transport, Water, Materials, Waste, Land use and Ecology, Pollution, Innovation.. There is no "standard" calculation package for village halls and so to get an official rating would be expensive (in excess of 6000 pounds) requiring a bespoke assessment to be produced. However the sub-group propose that the design takes into account the BREEAM factors and an un-official rating made. This might be done by members of the sub-group.

Martin M outlined the likely ways that the energy efficiency design criteria can be met. The current 2006 regulations can normally be met by improved insulation values and the use of high efficiency plant and systems (e.g. condensing gas boilers, heat recovery ventilation systems). The reduced carbon emissions required by the proposed 2010 will almost certainly require the inclusion of renewable technologies such as ground source pumps, photovoltaic and solar hot water panels, wind or biomass. Of these it is likely that an electrically driven ground source pump will offer operational and possible cost benefits as this will complement the proposed under floor heating. However the Government is encouraging the installation of renewable energy sources and renewable buy-back schemes come in to operation next year that make PV and solar hot water very attractive if the cost of installation can be funded.

Martin M noted that underfloor heating can be made more responsive by the use of a suspended

wooden floor.

The issue of ventilation was discussed. With a tight well insulated building the build-up of CO₂, condensation and heat when the hall is fully occupied becomes an issue. There are various solutions to this ranging from opening doors and windows, appropriate in the Summer (provided noise is not a problem), through passive ventilation, to full automatic air circulation and heat recovery system

2. Actions

- Martin M will do a preliminary energy modeling and produce initial sketch schemes sufficient to allow us to get quotes for a ground source installation and any other technologies that are deemed to be feasible. This is necessary for grant submissions.
- Martin M will provide a energy evaluation which will inform the Architect and group on the required insulation levels, glazing types, air tightness criteria, servicing strategies and renewable technologies required to achieve the following levels of carbon emissions:
 - A building a compliant with the current 2006 regulations
 - A building compliant with the anticipated levels required in the 2010 revisions
 - A building that goes beyond these levels to approach carbon neutral

It is acknowledged that exceeding the current building regulations will result in a more expensive building thus the aim of this report is to allow the committee to investigate the benefits and costs of each level.

- Martin S will down load grant application forms and start work with Colin to complete these, identifying what information will be required.
- Neil will sound out the contact he has who may be able to help with drawing up an lighting and power scheme.
- Colin will contact Ray Tollady with a view to meeting with him when he returns from vacation.

3. Next Meeting

To be arranged with Ray towards end of February