

Sustainable Energy; Protocol For Planning Applications



**Mendip District Council; 25th October 2006
(updated 8th December 2010)**

Version notes: Annex 1 to the Protocol updated to reflect the local plan policies saved by the Secretary of State in October 2007.

Why do we need to use energy more sustainably?

Our use of fossil fuels is changing the world's climate. If CO2 emissions are left unchecked, global average temperatures could be as much as 5 – 8 degrees Celsius higher by the end of this century, with devastating impacts on the economy and the natural world (UK Climate Impacts Programme, DEFRA, 2006).

Energy used in homes accounts for 19% of U.K. carbon dioxide emissions. Businesses (excluding transport) are responsible for 40% of the U.K.'s carbon emissions (DTI Energy Review 2006).

What do we mean by sustainable energy?

In this document “sustainable energy” means energy which is used to provide the services which we all need, such as heating, lighting and cooling, without contributing to global climate change or otherwise damaging the environment. It will of course not be possible to completely eliminate all the consequences of using energy, but this protocol aims to guide applicants towards creating buildings which use less energy and where energy is used more effectively to provide a comfortable and convenient building environment.

A sequential approach can be taken to reducing the impacts of energy use in buildings.

1. reduce the need for energy

This can be done through simple design measures which reduce the need to use energy to create a comfortable and convenient living or working environment. People do not need energy as an end in itself, but rather need the services, such as heating, lighting or cooling that energy is used to provide. These “energy services” can be delivered using less or even no energy by measures such as passive solar design, passive cooling, sheltering and shading of buildings, building in accessible locations reducing the need to travel and use of building forms such as terraces and flats, which reduce the need for energy.

2. use energy more efficiently

This would include increasing levels of insulation, specification of efficient appliances and embedded generation of power (generation close to the point of use) which reduces losses in transmission.

3. use renewable energy

Renewable energy generating capacity can now be integrated into new and existing buildings. Available technologies include solar panels (both water heating and photovoltaic, which produce electricity), micro wind turbines, biomass fuelled boilers and ground source heat pumps. Small scale generation can also be achieved using small wind turbines (typically 2.5 – 15 KiloWatt), hydro turbines and small scale biomass burning plant (including timber and energy crops). Large scale commercial generation has so far been restricted to large wind turbines (typically around 1 MegaWatt)

Local Plan Policy

Policy ER1 of the adopted Mendip District Local Plan reads

“development will only be permitted where all practicable measures for the conservation of energy have been included in the design, layout and siting of the proposal”.

Applicants for planning permission for

- 1 or more new build dwellings
- new build development in use classes B1 – B8 over 500square metres
- new build development in use classes A1-A5
- new build development in use classes C1-C3 and D1-D2
- new build development which is sui generis.

Will be asked to demonstrate how they have complied with policy ER1.

Energy Assessments

Applicants are required to provide a statement setting out how they have complied with policy ER1. They will need to demonstrate that all the no and low cost measures which are appropriate to the development have been included in the design.

Developers will be asked to first employ measures to reduce the need for energy. If this is demonstrated to be impractical or energy use is outweighed by other considerations, measures to use energy more efficiently and/or to use on site renewable energy generation may be substituted.

A list of questions is provided in part 2 of this document, which will be used to assess whether a proposal complies with policy ER1.

You are asked to answer the questions, setting out any areas where the sequential approach has been used i.e. where measures to reduce the need for energy are not possible and measures to improve energy efficiency or include on site renewables have been used instead.

This energy assessment will **not be required** where accreditation at “very good” or “excellent” grade has been achieved through the BREEAM (Building Research Establishment Environmental Assessment Method). The scheme covers both non residential development and homes, through the “ecohomes” standard. Developers will be required to provide evidence of accreditation.

Where applicants fail to show that sustainable energy has been sufficiently taken into account in the design and construction of their proposal, planning permission will be refused.

Renewable Energy

Policies ER2 – 5 of the adopted local plan set out the Council’s approach to applications for renewable energy infrastructure. The policies are set out in annex 1 to this protocol.

In considering applications for small and micro-scale renewable energy the Council will;

- take into account the wider benefits of renewable energy in terms of its contribution to tackling climate change and supporting the local economy,
- recognise that renewable energy developments can only be located where natural resources exist, and this may sometimes mean that developments need to be sited outside development limits,
- recognise that renewable energy developments can be accommodated in urban as well as rural areas,
- base judgements about detriment to the landscape and amenity on an assessment of the direct impact on affected buildings and viewpoints. In some circumstances developments may be visible in the landscape/townscape without causing harm.

The Town and Country Planning Association’s “Sustainable Energy By Design” provides further guidance on design measures to introduce sustainable energy at neighbourhood, street and individual building scales. It can be viewed at www.tcpa.org.uk/downloads/TCPA_SustEnergy.pdf

Annex 1; Adopted Local Plan Policies (Mendip District Local Plan, adopted 2002), Saved by the Secretary of State in October 2007.

Policy ER1 - Energy Conservation

Development will only be permitted where all practicable measures for the conservation of energy have been included in the design, layout and siting of the proposal.

Policy ER2 - Wind Energy

Wind turbines, whether in groups or singly, will be permitted where they:

- 1) are sited and designed so as to minimise their impact on the landscape, and will not significantly affect the landscape value of an Area of Outstanding Natural Beauty;
- 2) will not have an adverse impact on the character or setting of a settlement;
- 3) will not lead to nuisance by reason of noise, safety, shadow flicker, electro-magnetic interference or reflected light. Particular attention will be given to the impact on dwellings and other regularly occupied premises, unless it is part of a development served by that turbine;
- 4) will not detrimentally affect the character or setting of a Listed Building, Conservation Area or a scheduled ancient monument;
- 5) will not result in damage to a site designated for its ecological or archaeological value either during or after construction; and
- 6) provision is made for the removal of redundant turbines and associated structures.

Policy ER6 - Conservation of Water Resources

Development will only be permitted where all practicable measures for the conservation of water have been included in the design, layout, siting and drainage of the proposal.

Policy ER7 - Re-use of Materials.

As far as practicable, all suitable inert waste material generated by a development shall be re-used on site as aggregate, hardcore or for landscaping purposes.

Planning Reference: (for office use only)	
Project Address:	Barn at Montrose, Wells Road, Henton, Wells BA5 1PD
Applicant/Agent:	Bruce Yoell, D. Arch, RIBA, Chartered Architect
Contact Telephone No:	01749 880033

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Reducing the need for energy

1. Detail how the layout and design of buildings encourages conservation of heat, by minimising the external wall and roof area through which heat can escape?
(NB *Flats and terraces are inherently more efficient than semis and detached houses*).

The proposals are for the conversion of an existing Barn with a modest extension to the north elevation. The plan form is relatively compact so reduces the need for heat input. It is proposed to use under floor heating at ground floor level, supplemented by a wood burning appliance in the living room. This will reduce heat demand within the central heating system the water temperature will be approximately 35°C throughout the ground floor compared with 65°C for conventional radiators.

2. Describe how the development has been laid out to provide orientation for optimal solar benefit (either loss or gain, depending on use of building)?
(*Consider layout of habitable rooms/workspace and window design and positioning*)

The barn is an existing building on a north-south axis. The living area faces south, the dining area east. In all rooms, windows and doors are strategically placed to maximise light to reduce reliance on artificial lighting.

3. Detail how passive measures for shading and cooling of the buildings will be incorporated?

The thermal mass of the building (traditional masonry construction) will mean that the building is less affected by sudden changes in temperature causing sudden demands for heating and cooling – and consequent energy consumption.

All windows and glazed doors have opening lights to provide natural ventilation. The opening windows, allow for rapid ventilation.

4. Detail how the use of planting and landscaping will take account of opportunities to shelter buildings from the prevailing wind and from colder winds from the north and east.

The Barn is set against an existing higher building to the west which together with north boundary wall offers considerable protection from north westerly winds.

Buildings on the eastern boundary of the site provide some protection from east winds.

5. Detail how will the use of planting and landscaping take account of opportunities to provide shade to buildings in the summer, without loss of natural light in winter?

The main house provides some shading to east elevation of the Barn. The window to the south elevation allows some control of light and solar gain.

6. How does the design allow for the use of natural light throughout the building?
(Consider use of roof-lights, light wells, light tubes or atriums where appropriate)

The main rooms have good natural daylight. The circulation area has a half glazed door.

7. How will efficient natural ventilation be provided?

(through trickle ventilation, air bricks, passive stacks or an alternative method)?

All windows are opening (see 3 above). As the building has a high thermal mass i.e. less dramatic temperature changes, it is felt an energy using heat recovery system could be inappropriate. This can be compensated by good air tightness (three air changes per hour).

Using energy more efficiently

8. If a new heating system is to be installed, will it be one that conserves energy?

(Specify details of system and energy efficiency rating) A condensing type boiler is proposed to provide under floor heating at ground floor level and radiators with TRV's on the upper floor level. This will give controllable energy consumption by use of controls, zoned areas etc.

9. Will insulation be provided over and above building regulation requirements?

If yes please specify details.

Levels of insulation will be Code 4 standard for walls, roof and floor i.e. above current requirements. Windows will be double glazed, argon-filled, 20mm glazing with Low E coating.

10. Will high performance glazing **above** minimum building regulations be specified?

If yes please specify details. See 9 above.

11. Will an air conditioning system be installed? *If yes please specify details.*

(commercial developments only) NO

12. Will energy efficient lighting (external and internal) be fitted throughout the development? Please specify details.

Lighting will be low energy, internally and externally.

13. Explain how the energy embodied in materials will be minimised during construction? It is intended to minimise energy embodied in construction

materials The stonework will be reclaimed stone to match existing (originally from local quarries). Construction is of traditional method, achieving A to A+ ratings within the BRE Green Guide. Timber will be ethically sourced and the supply chain checked. Roof tiles will be traditional clay plain tiles. They have a long life and can always be recycled in the future. It is intended to use local contractors and labour to reduce travel mileage.

Through the use of recycled materials, reuse of demolition materials on site and low embodied energy products (such as timber; unfired clay bricks or tiles; cork; wool; cellulose or flax insulation).

Using renewable energy

14. Will on-site renewable energy be included? If yes please specify details.
(This could include building integrated wind, solar or biomass power or free standing wind, hydro, solar or biomass installations adjacent to the site). It would be advantageous to install a solar thermal system, but this has to be balanced against its aesthetic impact and Planning Regulations..Accordingly this is not a feasible option.
The fireplace provides the opportunity for installing high efficiency wood burning stove.

Bruce Yoell June 2016