



Supplementary Planning Guidance Note

No. 20 Sustainable Buildings -

Energy Conservation and Renewable Energy

Adopted by Flintshire
County Council on 17th
January 2017



Purpose

It is Flintshire County Council's intention to prepare and keep up to date a series of Supplementary Planning Guidance (SPG) Notes which will provide detailed guidance on a range of development issues and topics. The purposes of these Notes are:

- To assist the public and their agents in preparing planning proposals and to guide them in discussions with officers prior to the submission of planning applications,
- To guide officers in handling, and officers and councillors in deciding, planning applications, and
- To assist Inspectors in the determination of appeals

The overall aim is to improve the quality of new development and facilitate a consistent and transparent approach to decision making.

Planning policies: the Flintshire context

The Development Plan

Under planning legislation, the planning policies for each area should be set out formally in the Development Plan. Flintshire County Council, as the Local Planning Authority (LPA), has a legal duty to prepare and keep up to date a development plan for the County, and the Flintshire Unitary Development Plan was adopted in 2011. The UDP provides broad policies together with allocations of land for all the main uses such as housing, employment and retailing, and will help to shape the future of Flintshire in a physical and environmental sense as well as influencing it in economic and social terms. The Plan therefore seeks:

- To help the Council make rational and consistent decisions on planning applications by providing a policy framework consistent with national policy and
- To guide development to appropriate locations over the period up to 2015.

The need for Supplementary Planning Guidance

Despite the Plan containing policies with which the Council can make consistent and transparent decisions on development proposals, it cannot in itself give all the detailed advice needed by officers and prospective applicants to guide proposals at the local level, such as house extensions or conversions of agricultural buildings. The Council's intention is to prepare a range of Supplementary Planning Guidance notes (SPG) to support the UDP by providing more detailed guidance on a range of topics and issues to help the interpretation and implementation of the policies and proposals in the UDP. The review of the Local Planning Guidance Notes will be undertaken on a phased basis and details of the available SPG's can be found on the Council's website. Where there is a need to refer to another SPG this will be clearly referenced. These SPG Notes are freely available from Planning Services, Directorate of Environment, County Hall, Mold, Flintshire CH7 6NF (telephone 01352 703228), at the Planning Services reception at County Hall and can be downloaded from the Planning Web pages www.flintshire.gov.uk/planning

The status of Supplementary Planning Guidance

Supplementary planning guidance can be taken into account as a material consideration in the decision making process. The National Assembly will give substantial weight to SPG which derives out of and is consistent with the development plan. In accordance with National Assembly advice the Council's suite of SPG's has been the subject of public consultation and Council resolution. The draft of this SPG was approved for public consultation on 13.06.13 (Council Minute no.6). The SPG was the subject of a public consultation exercise between 18.12.15 and 12.02.16. The 13 comments submitted to the Council have been taken into account and where appropriate amendments have been incorporated into this final draft which was approved by the Council on 17.01.17 (Council Minute no.8) for use as a material consideration in determining planning applications and appeals. A summary of the representations and the Council's response is set out in Appendix 9.

This document should therefore be afforded considerable weight as a material planning consideration.

No. 20 Sustainable Buildings - Energy Conservation and Renewable Energy

1 - Introduction

1.1 - The impacts of climate change are increasingly being felt across the world. The need to reduce the emissions of carbon dioxide (CO₂) and other greenhouse gases drastically to try and combat this has now been recognised. Even if all emissions were to stop today, the impact of emissions to date would continue to be felt for many years to come.

1.2 - Planning Policy Wales (PPW) 2016 states 'Climate change is one of the most important challenges facing the world (paragraph 4.5.1)Climate change will have potentially profound environmental, economic and social justice implications and failure to address it will make planning for sustainability impossible' (paragraph 4.5.3). The potential impacts present risks to people, property, infrastructure and resources and PPW goes on to state that 'A complementary twin track approach to tackling climate change is needed recognising:-

a. The causes of climate change – by acting, and acting urgently, to cut emissions of greenhouse gas emissions that cause climate change in order to avoid the worst impacts of climate change; and

b. The consequences of climate change – the impact of the changes in the climate that are already locked into the climate system which will occur as a result of past emissions' (paragraph 4.5.5).

1.3 - Greenhouse gas emissions come from the burning of fossil fuels such as coal, oil and natural gas in homes, businesses and transport. Through reducing the amount of energy we use and using renewable energy sources, emissions can be reduced. Therefore it is important to reduce the need to travel and to improve the energy efficiency of buildings.

1.4 - The role planning can play in reducing emissions and promoting sustainable development has been recognised, in both the location of new development and the design and layout of new development as these can reduce energy needs, and can also allow the incorporation of renewable energy measures on site. These aspects of design need to be considered at an early stage in the design process to ensure the most efficient and appropriate approach is taken.

Policy Context

1.5 - The Kyoto Protocol 1997 resulted in a commitment from developed countries to reduce greenhouse gas emissions in order to address climate change. The Welsh Government has committed itself to contributing to the Kyoto target and to UK government goals of a 20% reduction in CO₂ emissions below 1990 targets by 2010 and a 60% reduction by 2050. The recent Paris agreement on climate change will also be important in setting the future direction for climate change targets.

1.6 - National policy is set out in Planning Policy Wales, along with the relevant Technical Advice Notes (TANs) and updates of these. The Environment Strategy for Wales 2006 and the related Action Plan set out the Welsh Government's commitment to reducing emissions, maintaining existing carbon stores and ensuring effective adaptation. The Welsh Government has an overall aspiration to secure zero carbon buildings while continuing to promote a range of low and zero carbon technologies.

Also relevant is the fact that in Wales, since July 2014, the Code for Sustainable Homes has been abolished and its standards have been incorporated into Building Regulations.

1.7 - PPW states that the design process should:

- promote the efficient use of resources, including land;
- seek to maximise energy efficiency and the efficient use of other resources; and
- minimise the use of non-renewable resources and minimise the generation of waste and pollution.

1.8 - It also goes on to say that 'Good design should ensure that development contributes to tackling the causes of climate change (by reducing greenhouse gas emissions) and to effective adaptation to the consequences of climate change. An integrated and flexible approach to design, including location, density, layout, built form, will be an appropriate way of contributing to climate responsive development'. Design and access statements should demonstrate how this is considered.

1.9 - TAN12 Design lists a number of design issues where the implications of the design choices made may be significant. It also says that the emphasis on each of these is on finding sustainable design solutions as sustainability must inform all aspects of design.

The Council's Approach

1.10 - The Council recognises the importance of both mitigating and adapting to climate change. The theme of sustainable development runs throughout the UDP, for example in Policy STR10 Resources, the wording of which can be found in Appendix 1. The policies in Chapter 5 Design relate to various aspects of design such as location and layout, and there are also policies relating to energy efficiency in new

Definition of Sustainable Development:

'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

(World Commission on Environment and Development – 1987)

development, and renewable energy in new development.

1.11 - This Supplementary Planning Guidance (SPG) builds on current policy and guidance and sets out the ways in which new development can reduce its impact on the environment and also looks at how to adapt to the predicted changes. This SPG should be read in conjunction with other relevant SPGs, guidance and development plan policies.

1.12 - Each scheme put forward will be considered on its merits against the location, design and sustainability objectives and developers will need to provide a design and access statement setting out how the proposed development will fit in with these objectives. This is particularly the case when considering proposals involving buildings and areas important in terms of heritage and visual amenity, such as listed buildings and conservation areas and the AONB.

1.13 - Applicants seeking planning permission will be expected to demonstrate how they intend to minimise the environmental impact of a proposal. A sustainable development checklist is attached as

Appendix 6 to assist applicants. Where appropriate, the Council will produce development briefs to assist developers in drawing up schemes and ensuring they meet the sustainability objectives.

The Energy Hierarchy

1.14 - This sets out the order in which a reduction in energy should be considered and the order of priorities should be as follows:

- reduce the need for energy
- use energy more efficiently
- use renewable energy
- ensure that fossil fuels used are used in a clean and efficient manner

Code for Sustainable Homes

1.15 - Current planning policy seeks to improve the environmental performance of dwellings and build more sustainable homes. The Welsh Government (WG) has adopted the Code for Sustainable Homes as its preferred tool for assessing the sustainability of new homes and set out levels to be achieved. All new dwellings in Wales are now required to attain code level 3 of the Code for Sustainable Homes and obtain 6 credits under issue ENE1 – Dwelling Emission Rate.

1.16 - The Council recognises the importance of ensuring all development moves towards being more sustainable and therefore in order to take the sustainability agenda forward, the Council will also expect all residential conversions to reach the equivalent level of the Code for Sustainable Homes. However, the Council recognises that in some instances of conversion and sub-division of houses, due to the construction of the original building, this may not be possible. In these cases, the development will be expected to achieve the highest standards possible, practically and financially and the applicant will be expected to provide evidence in relation to this. In addition to this, sites considered by the Council to be of strategic importance may be expected to reach the higher sustainable building standard of Level 5 and to incorporate renewable or low energy supply systems.

Building Research Establishment Environmental Assessment Method (BREEAM)

1.17 - For non-residential buildings the Welsh Government has adopted BREEAM to assess the sustainability of buildings. Since 1st September 2009 applications with a floorspace of 1,000 sq m or more or on a site of one hectare or more have to meet the BREEAM 'Very Good' standard and achieve the mandatory credits for 'Excellent' under issue Ene1 – Reduction of CO2 Emissions. As with residential schemes, sites considered to be of strategic importance will be expected to reach a higher sustainable building standard.

2 - New Development

Site Location and Layout

2.1 - TAN12 Design states 'Achieving more sustainable residential environments is dependent on linking development to public transport, providing access to local services and securing the most efficient use of land'.

2.2 - The location of sites, careful layout of development and the siting of buildings within the site can have a big impact on the need to travel, the method of transport, and energy consumption. Changes such as building orientation, location on slopes, and the location and type of planting can significantly reduce energy use within a dwelling. Where possible priority should be given to development on previously developed or brownfield land.

2.3 - Development should be located:

- close to existing or proposed public transport routes, and accessible for cyclists and pedestrians
- within easy access of essential facilities and services such as shops
- away from areas at risk of flooding

2.4 - Site layouts should make a positive contribution to the environment and should respect the character of the surrounding area, whilst at the same time taking into account issues such as passive solar gain, security, privacy etc. Any attractive natural features or views into and out of the site should be taken into account, and the layout should be sympathetic to the topography of the site.

Transport

2.5 - Development proposals should aim to reduce the need to travel, especially by car, and should be accessible by other more sustainable forms of transport such as walking, cycling or public transport.

Energy Efficiency

2.6 - The two first priorities in the energy hierarchy (see para 1.3) are to reduce the need for energy and then to use energy more efficiently. This means that it is important that all development proposals are energy efficient.

2.7 - TAN12 Design also refers to resource efficient buildings and says that '**many aspects of design such as built form and fenestration affect the environmental sustainability of buildings**'.

2.8 - The link between climate change and the need to reduce energy consumption is long established. Energy consumption can be reduced through the location, orientation and design of buildings, and the type and quality of construction materials used.

2.9 - Renewable energy can be used to provide a source of heating, hot water and electricity as considered below. However it is important that boilers which are highly efficient are used and that timers and radiators with thermostats are installed. These should be used alongside high levels of insulation and wherever possible sustainable natural insulation products should be used e.g. sheep's wool.

2.10 - Other ways of improving energy efficiency include:

- lagging hot water pipes and tanks
- insulate roof spaces
- fit highly efficient double or triple glazed windows, preferably with timber frames as these are from renewable sources
- use blinds, curtains and shutters to reduce heat loss in winter / prevent overheating in summer

- incorporate or add porches to reduce heat loss from the building

Daylight and Sunlight

2.11 - It is important that the habitable rooms of dwellings gain adequate daylight and sunlight, not just to improve the amenity of inhabitants, but also to ensure the maximum use is made of passive solar gain and natural light. This also applies to new development and development that may affect existing buildings and to non-residential buildings. The Building Research Establishment (BRE) published guidance (Site Layout Planning for Daylight and Sunlight – a guide to good practice) a number of years ago which looked at daylight and sunlight and developers are expected to take this aspect into consideration at an early stage of the design process.

2.12 - In terms of passive solar gain, in considering layout for example, houses should be orientated north/south and there should be minimal shading from obstructions to solar gain. In terms of house design, measures such as biasing glazing towards the south and facing most principal living rooms southwards should be incorporated. The Energy Saving Trust (EST) has produced guidance on layout which maximises the use of passive solar gain in its guide to 'Passive Solar Estate Layout' in order to reduce energy consumption through the use of basic design principles. Good passive solar design will provide warmth in winter and shade in summer so it should be possible to shade buildings.

2.13 - The following methods can be used:

- window awnings - these can reduce solar heat gain considerably in summer and can be retracted on winter or overcast days
- window shutters (internal and external) – these can reduce both heat gain and heat loss. Exterior shutters are probably best as they also offer security, weather protection and don't take up space inside the building but they must be integral to the design of the building.
- roof overhangs – these are most effective for south facing facades and can be of a solid or louvred construction, or a combination of both. Their design should take into account latitude, climate, solar radiation and window size.

2.14 - Increased daylight and sunlight in a development can be achieved by, for example:

- using a site on a south facing slope
- locating taller buildings to the north of the site, and lower buildings to the south
- having high density housing to the north of the site and lower density housing to the south
- incorporating courtyards which open to the south
- having low pitch roofs
- orientating the majority of housing to face within 30 degrees of south

2.15 - In designing new development developers should therefore ensure that the habitable rooms of dwellings (new and existing) receive adequate daylight and sunlight and that the use of passive solar gain is maximised to reduce energy use and costs. It is also important to consider the need to balance (in summer) the use of solar gain with the need to cool buildings and reduce the need for cooling and ventilation methods which use energy as this defeats the object of using solar gain to reduce energy usage.

2.16 - Passive solar developments should cost no more than conventional layouts and passive solar design is not dependent on technology so there are no on-going costs for occupants. Also, developments which are designed to maximise passive solar gain through e.g. reducing inappropriate shading and the orientation of principally occupied rooms to face south will make a saving of between 3% and 10% of the total energy costs for the building.

2.17 - Use of natural lighting reduces the need for artificial lighting and reduces energy use. The use of such measures as atria and sun tubes can maximise natural light within a building. Other measures such as using low energy lighting and light coloured finishes e.g. wall coverings should also be incorporated. These principles should also be applied to non-residential buildings.

Building Design

2.18 - Developers should also consider the following:

- providing thermal massing during the construction phase of a project as this will maximise the benefits of passive solar energy and help to buffer against high internal temperatures during the summer months
- arranging the internal layout so solar energy is distributed naturally using through rooms
- the use of porches and conservatories to enable natural ventilation and heat conservation. Conservatories can harness solar energy but need to be incorporated into the development at the design stage and be thermally separated from the house to ensure heat is distributed effectively.
- the use of sustainable materials such as sustainably produced timber, recycled products
- installation of a wood burning stove and flue
- natural ventilation methods should be used to prevent the need for mechanical systems. Any system used should be secure and capable of being opened and closed as necessary
- large floor to ceiling heights allow hot air to rise above the heads of people in the room
- designs should allow for high levels of insulation and high performance windows to be incorporated
- renewable energy measures should be designed into the development
- the use of natural ventilation systems and design, e.g. the passive stack effect, to reduce the need for mechanical systems
- building regulations provide minimum standards to be obtained, developers are encouraged to build to a higher standard
- the provision of space for the storage of recycled waste / compost

Sustainable Construction and Materials

2.19 - Where possible, materials which have least impact on the environment and resource use in their production, transport and over their lifetime should be used in construction although it is important to ensure that they are appropriate for their intended use. Also, materials which have least impact on occupants should be used and therefore non-toxic materials should be used as this will improve the quality of air inside the building and can reduce rates of allergy and asthma.

2.20 - The following should be used as guidelines in selecting sustainable materials:

- previously used / salvaged materials and those which have been recycled or have a recycled content
- materials from sustainable and managed sources, e.g. FSC (Forest Stewardship Council) timber
- products with the lowest embodied energy i.e. those manufactured using least energy in their production and transport
- locally produced and sourced products as this reduces the need to transport materials and therefore has less impact on the environment
- materials should be re-usable and recyclable
- materials should be designed to last, so there is less need to replace them
- use low / non-toxic materials and those with minimal VOC (volatile organic compounds) content
- low maintenance products
- materials which are appropriate to the building and its surroundings

2.21 - Developers should research the most appropriate materials and there are many sources of information available, such as the BRE's Green Guide to Specification or GreenSpec. Developers could also consider producing a green purchasing guide to assist in selecting materials that are produced in the most environmentally friendly way.

2.22 - Also, construction waste should be minimised and buildings and materials designed and used with their deconstruction in mind.

Landscaping

2.23 - Good landscaping schemes and the retention of existing features can provide habitats for wildlife and increase biodiversity as well as providing shelter from prevailing winds and summer sun.

3 - Renewable Energy

3.1 - Once energy consumption has been reduced to a minimum developers of schemes of all sizes should consider the integration of renewable energy technologies, bearing in mind that a combination of technologies may be more appropriate than a single one.

3.2 - UDP Policy EWP3 sets out the requirement for all major developments to incorporate renewable energy production, but ALL proposals should consider their integration. Depending on the type and size of scheme developers should therefore consider integrating the following:

- solar water heating
- photovoltaics
- wind power
- combined heat, power and cooling projects (CHP)
- communal heating

- biomass (e.g. log pellet boilers / log burners)
- renewable energy from waste
- hydro-electric

Solar

3.3 - There are two types of technology: solar thermal systems and photovoltaic (PV) systems.

3.4 - In a **solar thermal** (solar hot water) system, the solar energy heats the water which is then stored in a hot water cylinder until used. The system requires a solar collector (panel) which is usually located on the roof of the building, though it can be free standing or attached to the side of the building. The solar collector contains a fluid which is heated by the sun and which is then passed through a coil in a hot water storage cylinder. The water in the cylinder may then be supplied directly or raised to a higher temperature if required by a boiler or electric immersion heater.

3.5 - To maximise the efficiency of solar thermal systems, larger hot water storage cylinders are required than those used for traditional systems. The building design should therefore be able to accommodate this. Developers should also ensure that there is sufficient space on the roof to accommodate the solar collector (usually 2-5 m²) preferably orientated within 30 degrees of south on a pitched roof and that the collector is not shaded by any obstructions e.g. trees, buildings.

3.6 - Solar electricity (photovoltaic) systems convert energy from the sun into electricity through semiconductor cells. When light shines on the panel it is converted into electricity – the brighter the sunlight, the more power is produced. It is important to ensure that panels are unshaded for most of the day and face as close to south as possible. Photovoltaic (PV) systems can be relatively easily integrated into the fabric of buildings, for example as tiles. Panels should be at an elevation of 30-40 degrees and need to be adequately ventilated to prevent overheating and a subsequent drop in efficiency. They need to be regularly cleaned, though if they are tilted by at least 15 degrees the panel should be able to self-clean sufficiently well to maintain optimum efficiency.

3.7 - PV systems work well when used together with wind turbines, because wind turbines generally produce more electricity in winter when PV systems produce less, and this reverses in the summer. Developers will also need to allow space for equipment such as an AC/DC inverter, batteries if the electricity is to be stored, a control unit and the appropriate electrical connections.

Wind power

3.8 - Wind farms generally consist of a number of large turbines which feed electricity into the national grid and are not considered within this SPG. Micro-wind turbines are much smaller and are suitable for use in residential, industrial or retail developments and generally provide power to one individual user. However, there can be issues related to visual impact, noise, topple distance and shadow flicker as well as cumulative effects of turbines. They need to be located where there is an adequate supply of wind which is free from turbulence and obstructions. Wind turbines can be located either on a building or be mounted on a pole away from the building. Any noise resulting from the turbine gearbox or rotor blades can be minimised by design and newer models are much improved in this respect but acoustic information relating to the proposed turbine should be provided with a planning application.

3.9 - Planning permission is required in Wales for the installation of domestic wind turbines. Any application received will be assessed for adverse effects on:

- the landscape or cultural heritage
- flora, fauna and habitats
- hydrology
- neighbouring properties through noise, shadow flicker, loss of amenity and electromagnetic interference to transmitting or receiving systems

3.10 - It would also be assessed against the relevant development plan policies, such as UDP policy EWP4 Wind Turbine Development.

3.11 - The Council may require any permission for a wind turbine to contain a condition requiring its removal and the reinstatement of the site when it has reached the end of its design life, or following a long period of non-use. It may also require financial guarantees for this by way of a Section 106 Planning Obligation / Agreement as part of the approval.

3.12 - The Environmental Impact Assessment (EIA) Regulations 1999 require local planning authorities to screen applications for the need for an EIA where the proposal involves the installation of more than 2 turbines of where the hub height of any turbine or other structure exceeds 15 metres. SPG21 provides more detailed advice relating to EIAs.

Biomass

3.13 - Biomass comprises fuels, other than fossil fuels, where at least 98% of the energy content comes from plant or animal matter, or substances derived from them. This includes forestry, agriculture, wood wastes or residues, sewage and energy crops. For it to be sustainable, the use of the energy source should not exceed the rate of production, i.e. replanting must keep pace with use.

3.14 - Wood burning systems are generally most suitable for use in individual dwellings and although they produce CO₂, the amount released is only the same as the amount absorbed by the tree whilst it was growing. It is therefore essentially a carbon neutral approach, provided that the wood fuel is used close to where it was grown.

3.15 - Wood fuel is available as logs, wood pellets and woodchip and can be burnt using room heaters or stoves, and automatic wood pellet and woodchip boilers. Wood fuel can be provided through the use of willow and poplar which grows quickly and can be harvested under a short rotation coppice regime. Modern wood burning stoves and boilers can achieve efficiencies of 80-90% and they can be used for space heating or to heat water and provide central heating. Where wood burners and boilers are used for hot water and heating a hot water tank will need to be provided.

3.16 - Energy can also be extracted from agricultural waste by anaerobic digestion which may be viable for a large farm or groups of farms. Another source is through the use of methane but this is unlikely to be considered unless as part of a large proposal which is outside the scope of this LPGN.

3.17 - Other points that need to be considered are:

- biomass boilers and stoves will require the correct type of flue
- biomass boilers and stoves are likely to require more frequent cleaning and maintenance than oil or gas boilers, e.g. chimney sweeping
- a back up system may be required for when maintenance of appliances is being carried out
- whether there is a local supply of fuel
- where the fuel is going to be stored
- the occupants will need to 'manage' the system e.g. stacking logs or removing the ash, which may not be suitable for everyone

3.18 - Flues for biomass heating or for CHP systems (see para 3.6) are permitted development provided the flue does not project more than 1m above the highest part of the roof. Biomass and CHP systems within an existing building do not require planning permission.

Air and Ground Source Heat Pumps

3.19 - Heat pumps transfer heat from the ground or air into a building to provide all space heating and, in some cases, to pre-heat domestic hot water. Ground source heat pumps use pipes buried in the garden to extract heat from the ground. This is usually used to warm water for radiators or underfloor heating systems. It can also be used to pre-heat water before it goes into a more conventional boiler. Air source heat pumps absorb heat from the air outside to heat buildings. Water source heat pumps are also an option, where a suitable water source is available. Ground and water source heat pumps fall within permitted development anywhere within the boundary of a house or flat.

Combined Heat and Power (CHP)

3.20 - CHP is used to simultaneously generate usable heat and power (usually electricity) in a single process. CHP systems convert between a quarter and a third of their fuel input into electricity and at the same time produce heat that can be used on site or distributed through a community heating network. The main potential use for CHP is in conjunction with community heating schemes rather than for individual homes or businesses.

Planning considerations

3.21 - Planning permission is not always required for the installation of some renewable energy technologies.

3.22 - In the case of solar PV and solar thermal panels, permitted development rights are conditional on minimising the effect on the amenity of the area and external appearance, and the equipment being removed if no longer needed.

3.23 - The following will be considered in evaluating proposals for the installation of all renewable energy technologies where planning permission is required and developers and householders should also take these into consideration:

- noise
- visual impact

- overshadowing
- historic / conservation interest
- environmental impact
- Topography
- Topple distance
- Shadow flicker
- Glint and glare
- Separation distances from telecommunication masts and cables
- Cumulative impact
- Airport safeguarding zones

3.24 - Developers should ensure that sustainable development issues and renewable energy proposals are contained within design and access statements.

3.25 - The most up to date advice in relation to planning regulations for renewable energy technologies for householders, communities and businesses seeking to install a small or community scale renewable energy technology can be found in the Welsh Government Leaflet 3 Generating Your Own Energy – The Current Regulations July 2010. Developers are advised to consult this document and the other related information leaflets. These are listed in Appendix 4.

Listed Buildings, World Heritage Sites, Conservation Areas and AONB

3.26 - Although some renewable energy technologies can now be installed under permitted development rights, there are exceptions to this. Exceptions include listed buildings and buildings in Conservation Areas as well as World Heritage Sites and houses subject to an Article 4 Direction or a condition on a planning permission which removed permitted development rights. In these cases, special provisions apply and further advice should be sought from the local planning authority. It is also advisable to contact the local planning authority for advice for houses within the Area of Outstanding Natural Beauty (AONB) or buildings which are locally listed.

4 - Other

Water Conservation and Drainage

4.1 - New developments should incorporate measures to promote water efficiency / conservation and sustainable drainage systems (SUDS) in order to reduce water use and flooding. Local Planning Guidance Note 19 Sustainable Drainage Systems contains further detailed information on this.

Flood Proofing New Development

4.2 - In areas at risk of flooding, along with appropriate mitigation measures, there are a number of ways to reduce the impact on properties should flooding occur. These include the use of solid floors, having electrical sockets and switches at a higher level and use of different plaster. Further information is contained within 'Improving the flood performance of new buildings' by the Department of Communities and Local Government, May 2007.

5 - Conversion and Subdivision of Existing Buildings

5.1 - When existing buildings are converted to residential use, the Council expects developers to achieve the highest level of sustainability possible. The Council recognises that in some instances of conversion and sub-division of houses, due to the construction of the original building, it will not be possible to achieve levels as high as in new housing. In these cases, the development will be expected to achieve the highest standards possible, practically and financially.

5.2 - Double glazing increases energy efficiency but standard windows are often unsuitable for older, rural or listed buildings, as are plastic frames. There are other measures possible e.g. thin sealed vacuum units which can be applied to traditional timber frames or the use of secondary glazing. Timber window frames are often more suitable for older buildings and are made from a sustainable material.

5.3 - Care should be taken in trying to increase the energy efficiency of traditional buildings as many techniques suitable for more modern buildings are not suitable for older buildings. For example, non breathable wall insulation should not be used on stone buildings as it prevents the building from working in the way it was intended. There is information available from many sources on this and some are listed in the appendix.

6 - House Extensions

6.1 - In considering extensions/alterations to houses, regard will need to be had to issues such as the use of design, building materials and construction methods that minimise any potential detrimental environmental impacts (e.g. the use of recycled materials and insulation).

Extensions/alterations should seek to minimise energy consumption as much as possible, and the use of renewable energy wherever feasible is one way of achieving this. Designing and constructing an extension provides an opportunity to increase the energy efficiency of the property and factors such as orientation, layout etc as well as energy efficiency measures being carried out for the original property can contribute to this.

6.2 - Extensions, and the resulting loss of garden space, can cause a range of negative impacts on the environment, for example in damaging valuable wildlife habitats or increasing flood risk. However these impacts can be reduced to some degree through the incorporation of sustainability measures, such as those suggested below. In addition to this, extensions offer a significant opportunity for the improvement of existing buildings. If every extension approved across the County incorporated basic energy efficiency and sustainability improvements to the existing home or building, the County-wide impact would be substantial.

6.3 - In order to ensure that applicants have given full consideration to these matters, they will be required to fill in the checklist in Appendix 8 This checklist can be used to identify measures which are appropriate to the building. Use the checklist as set out below:

- take into consideration what measures can be physically undertaken on the property
- if a measure isn't possible please state why .e.g. no cavity walls, loft already insulated
- if quotes have been provided work out the payback using this method -

- cost of the measure ÷ projected annual fuel saving = number of years payback period. If these aren't available, the table includes estimated costs based on a three bedroomed semi-detached house (see Energy Saving Trust website for more details).
- submit the completed check-list with the planning application for the house extension

6.4 - Important sustainable design issues to consider when formulating a design for a new extension will therefore include:

- making energy efficiency improvements to the existing building at the same time as completing new works, such as loft insulation, wall insulation or a new boiler as this can mitigate the additional energy requirements that will result from the house being extended
- incorporation of green roofs and other measures to support and enhance biodiversity.
- where extensions include bathrooms, kitchens or utility rooms, use of water efficient fixtures and fittings should be encouraged.
- wherever possible, use rainwater butts to collect rainwater from roofs for use in the garden.
- use of recycled, low impact and sustainably sourced materials such as Forest Stewardship Council (FSC) accredited timber
- incorporation of renewable energy technologies

7 - Strategic Sites

7.1 - In addition to this, sites considered by the Council to be of strategic importance will be expected to reach a higher sustainable building standard and to incorporate renewable or low energy supply systems.

Appendix 1

Main Relevant National Policies and Guidance

- Planning Policy Wales 2016
- Technical Advice Note 5 Nature Conservation and Planning 2009
- Technical Advice Note 8 Planning for Renewable Energy 2005
- Technical Advice Note 11 Noise 1997
- Technical Advice Note 12 Design 2009
- Technical Advice Note 15 Development and Flood Risk 2004
- Technical Advice Note 16 Sport, Recreation and Open Space 2009
- Technical Advice Note 18 Transport 2007
- Technical Advice Note 22 Planning for Sustainable Buildings 2010
- Environment Strategy for Wales 2006
- One Wales: One Planet, a New Sustainable Development Scheme for Wales 2009

Appendix 2

Main Relevant UDP Policies

Paragraph	Topic	UDP Policy
	Site location and layout	<ul style="list-style-type: none">» D1 Design Quality, Location and Layout» L1 Landscape Character» HSG8 Density of Housing» EWP14 Derelict and Contaminated Land» EWP15 Development of Unstable Land» EWP17 Flood Risk
	Transport	<ul style="list-style-type: none">» STR2 Transport and Communications» AC2 Pedestrian Provision and Public Rights of Way» AC3 Cycling Provision» AC4 Travel Plans for Major Traffic Generating Development» AC14 Traffic Calming» AC15 Traffic Management
	Energy efficiency	<ul style="list-style-type: none">» D1 Design Quality, Location and Layout» EWP2 Energy Efficiency in New Development

Paragraph	Topic	UDP Policy
	Daylight and sunlight	» EWP2 Energy Efficiency in New Development
	Building design	» D1 Design Quality, Location and Layout
	Sustainable construction and materials	» D1 Design Quality, Location and Layout » EWP10 Reusing Development Waste
	Landscaping	» D1 Design Quality, Location and Layout » D3 Landscaping » TWH1 Development Affecting Trees and Woodlands » TWH2 Protection of Hedgerows » L1 Landscape Character
	Nature conservation and biodiversity	» STR7 Natural Environment » TWH1 Development Affecting Trees and Woodlands » TWH2 Protection of Hedgerows » WB1 Species Protection
	Renewable energy	» HE1 Development Affecting Conservation Areas » HE2 Development Affecting Listed Buildings and their Settings » HE4 Buildings of Local Interest » EWP1 Sustainable Energy Generation » EWP3 Renewable Energy in New Development » EWP4 Wind Turbine Development » EWP5 Other Forms of Renewable Energy Generation
	Water conservation and management	» EWP16 Water Resources » EWP17 Flood Risk
	Conversions / subdivisions	» D1 Design Quality, Location and Layout » HSG7 Change of Use to Residential in the Open Countryside » HSG12 House Extensions and Alterations
	Extensions	» D1 Design Quality, Location and Layout

N.B. Policies STR1 New Development, STR10 Resources and GEN1 General Requirements for Development apply to all proposals

Appendix 3

Glossary

- Biodiversity - the variety of all living things (plants, animals, fish, insects etc) which exist in a particular area and the habitats which support them.
- Biomass – organic matter recently grown such as crops and woodlands, e.g. wood pellets, and recycled and waste recycled organic matter (excludes fossil fuels).
- BREEAM (Building Research Establishment Environmental Assessment Method) - an independent appraisal method which certifies the environmental performance of a building.
- Brownfield land – previously developed land.
- Embodied energy – the total amount of energy used in the sourcing, production, transportation and disposal of materials and products.
- Greenhouse gases –The earth is surrounded by a layer of gases which act like the glass walls of a greenhouse. These gases let the sun's rays enter, but stop much of the heat from escaping. This is a natural process, and it's these 'greenhouse gases' (mainly carbon dioxide and water vapour) that keep the planet warm enough to sustain life. However, as humans cause more greenhouse gases such as carbon dioxide and methane to be released into the atmosphere, the greenhouse effect becomes stronger. More heat is trapped and the earth's climate begins to change unnaturally.
- Grey water – water that has been used in the home from sinks, dish washing, showers and laundry (not toilets). 50-80% of residential waste water can be re-used for other purposes.
- Micro-climate – where a certain area has distinct environmental conditions.
- Micro-renewables and microgeneration – domestic level renewable energy techniques which provide heat and / or electricity to a small scale user, such as a house or an office. When more electricity is used than is produced, it can be sold to the national grid.
- Mixed use development – development which incorporates a variety of uses. This can lead to a reduction in the need to travel with the opportunity for people to live, work and shop in one location.
- Passive solar design – designing buildings to maximise the use of solar energy for heating, cooling and lighting.
- Photo-voltaic cell – converts solar energy to electricity.
- Rainwater harvesting – the facility to collect rainwater and reuse it. The simplest form is a basic water butt. More advanced systems allow water to be used for domestic uses such as washing, laundry and toilet flushing.
- Renewable energy – energy obtained from natural sources that cannot be exhausted including solar, wind, water and geothermal sources and biomass.
- Solar gain – ability of a building to benefit from the heat generated by the sun.
- Surface water run-off – discharge of water caused by rainfall falling on a hard surface e.g. roofs and roads
- Sustainable development – development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

- Thermal mass - allows the building to absorb heat by day and release it by night. It involves the use of high density materials such as concrete, bricks and tiles and its location within the building is important. It should be located inside the insulated building 'envelope' and exposed. It should be located as follows:
 - » for heating – locate where it gets direct sunlight or radiant heat from heaters
 - » for heating and cooling – locate on the ground floor as this is not only the most economical place to locate heavy materials but the earth can provide thermal stabilisation
 - » for cooling – protect from the summer sun

Additional thermal mass should be located near the centre of the building and could comprise brick walls, slabs etc. Thermal mass should be used in conjunction with good passive design.

Appendix 4

Welsh Government Leaflets on Renewable Energy Technologies

1	Generating Your Own Energy – A Planning Guide for Homes, Communities and Businesses
2A	Wind
2B	Solar Electricity
2C	Solar Water
2D	Hydropower
2E	Biomass
2F	Biomass (Anaerobic Digestion)
2G	Micro-CHP
2H	Heat Pumps
3	Generating Your Own Energy – The Current Planning Regulations

These documents can be found on the Welsh Government website at: www.wales.gov.uk/planning

Appendix 5

Housing Extension Checklist

Measure	Suitable for	Estimated cost	Estimated annual saving	Estimated payback	If not undertaking the measures please say why not	Notes
Cavity wall insulation	Dwellings that have empty cavity walls subject to a check for suitability and Building Control approval	£250	£110	2 years		
Double / triple glazed windows	Most dwellings but not always for historic / older buildings	Variable	Single to double glazing - £135 Secondary glazing - £85	Variable		Careful consideration needs to be given to the style and materials used. UPVC windows are not always the most appropriate type and can detrimentally affect the character of an older house. Some older houses are listed or locally listed and should not be altered without the correct consents.

Measure	Suitable for	Estimated cost	Estimated annual saving	Estimated payback	If not undertaking the measures please say why not	Notes
Loft insulation	Dwellings with accessible loft spaces	Increase in insulation from 0 to 270mm - £250	£145	2 years		Can be done by competent DIY persons
		Increase in insulation from 50 to 270mm - £250	£40	6 years		
Floor insulation	Dwellings with uninsulated timber floors which are accessible from underneath	£100	£50	2 years		Based on DIY costs. Can be done by competent DIY persons
Filling gaps between floors and skirting boards	Suitable for ground floors where there are draughts e.g. from a basement	£20	£20	1 Year		Based on DIY costs. Can be done by competent DIY persons
Replacement condensing boiler	Dwellings with a non condensing gas or oil boiler more than 15 years old	Variable	£225	Variable		

Measure	Suitable for	Estimated cost	Estimated annual saving	Estimated payback	If not undertaking the measures please say why not	Notes
Heating controls upgrade	Dwellings with central heating systems without a programmable timer, room thermostat or thermostatic radiator valves	As an example – room thermostat - £55		1 Year		Costs will vary depending on the number and type of valves or timer needed.
Insulation of hot water tank / primary pipes	Dwellings with uninsulated hot water tanks and pipes or those with insulation in need of replacement	Tank insulation - £15-35	£35	0.4 - 1 year		Based on DIY costs. Can be done by competent DIY persons
		Pipe insulation - £10	£10	£1 year		
Draught proofing	Dwellings where there are excessive draughts	Professional installation - £200	£25	4 – 8 years		Some ventilation is essential in all houses, and is particularly important in older and historic ones
		DIY installation - £100		2 years		

NB Not all these measures are suitable for older and historic houses as these are designed to 'breathe' and inappropriate energy efficiency measures can cause problems such as condensation. Inappropriate measures may also affect the character of older properties or require consent in the case of listed buildings and buildings of local interest. If in any doubt please contact the Conservation section for further information.

This list is not exhaustive and other measures may be appropriate depending on the work proposed.

Appendix 6

Further Reading

- A Model Design Guide for Wales: Residential Development, Planning Officers Society for Wales March 2005
- A Low Carbon Revolution: Wales' Energy Policy Statement 2010, Welsh Government
- Best Practice in New Housing (CE95), Energy Saving Trust
- Building Regulations BR 2000 SI 2000/2531 (as amended)
- Building Your Own Energy Efficient House (CE123), Energy Saving Trust
- Climate Change Strategy for Wales 2010, Welsh Government
- Code for Sustainable Homes Technical Guide, Department of Communities and Local Government October 2010
- Creating Sustainable Places, Welsh Development Agency 2005 (currently under review)
- Design and Access Statements in Wales - Why, What and How, Design Commission for Wales October 2008
- Energy Efficiency and Historic Buildings, English Heritage November 2010
- Energy Heritage, Changeworks 2008
- Equality Act 2010
- Guidance for Sustainable Design in the National Parks of Wales
- Improving the Flood Performance of New Buildings, Department of Communities and Local Government, 2007
- Manual for Streets, Welsh Government/ Department of Communities and Local Government/Department of Transport, 2007
- Manual for Streets 2 – companion guide to Manual for Streets, Chartered Institute of Highways and Transportation 2010
- Parking Standards, Flintshire County Council
- Passive Solar Estate Layout, Energy Saving Trust 1997
- Passive Solar Estate Layout, BRE 1997
- Renewable Energy Sources in Rural Environments (CE70), Energy Saving Trust
- Site Layout Planning for Daylight and Sunlight – a guide to good practice, Building Research Establishment 1991 (reprinted 2005)
- Sustainability and Historic Buildings, Peak District National Park Authority
- Welsh Government National Energy Efficiency and Savings Plan Consultation Document 2009

Appendix 7

Contacts

Association for Environment Conscious Building

PO Box 32, Llandysul, SA44 5ZA
0845 456 9773
www.aecb.net

Carbon Trust

Albion House, Oxford Street, Nantgarw, Cardiff
CF15 7TR
0800 085 2005
www.carbontrust.co.uk

Department for Communities and Local Government

Communities and Local Government, Eland House,
Bressenden Place, London, SW1E 5DU
0303 444 0000
www.communities.gov.uk

Sustainable Construction

www.sustainableconstruction.co.uk

The Green Guide to Specification

www.thegreenguide.org.uk

Building Research Establishment

Bucknalls Lane, Watford, WD25 9XX
01923 664 000
www.bre.co.uk

Centre for Alternative Technology
Machynlleth, Powys, SY20 9AZ
01654 705 950
www.cat.org.uk

Design Commission for Wales
4th Floor, Building Two, Caspian Point, Caspian Way, Cardiff Bay, CF10 4DQ
029 2045 1964
www.dcfw.org

Energy Saving Trust
1 Caspian Point, Caspian Way, Cardiff Bay, CF10 4DQ
029 2046 8340
www.energysavingtrust.org.uk

GreenSpec
www.greenspec.co.uk

Sustrans
2 Cathedral Square, College Green, Bristol, BS1 5DD
0845 113 0065
www.sustrans.org.uk

Welsh Government
Cathays Park, Cardiff, CF10 3NQ
0845 010 3300 (English)
0845 010 4400 (Welsh)
www.wales.gov.uk

Natural Resources Wales
Ty Cambria
29 Newport Road
Cardiff
CF23 0TP
0300 065 3000
enquiries@naturalresourceswales.gov.uk

Planning Portal Wales
www.planningportal.gov.uk

Appendix 8

General Checklist

Have you considered?

	Yes	No
Location and Transport		
Does the development involve the use of brownfield land or the re-use of buildings?		
Is the site in a town or village centre or at the edge of a settlement?		
Is the site away from areas at risk of flooding and not dependent on transport or energy links at risk of flooding?		
Is the site close to, or does it incorporate dwellings, places of work community facilities and services?		
In selecting the site have the following been considered: microclimate / exposure / gradients / landscape features?		
Is the site close to public transport facilities (existing & proposed)?		
Does the development include improvements to pedestrian / cyclist / public transport facilities		
Site Layout and Building Design		
Does the proposed layout incorporate measures to maximise the use of passive solar gain? e.g. main glazed elevations within 30 degrees of south, taller buildings to the north of the site		
Is the landscaping and landform used to provide shelter and / or shade?		
Have buildings been designed to maximise the use of passive solar energy?		
Have measures been incorporated to prevent excess solar gain in summer?		
Is there an appropriate density of dwellings on the site / is maximum use made of the site?		
Are windows designed to maximise natural light?		
Is there a mix of house types?		
Does the proposal include employment, retail or community uses?		
Is passive ventilation and heat recovery incorporated?		
Are the principles of 'Secured by Design' incorporated into the layout and building designs?		
Are the materials used recycled, or from renewable sources?		
Are there facilities for recycling / the storage of recycling?		

	Yes	No
Are community and or / leisure facilities included in the scheme?		
Are you planning works to a traditional building which requires a different methods and materials?		
Energy		
Have appropriate measures to generate renewable energy been incorporated – either for the whole site or on individual buildings? e.g. photovoltaics		
Is the specified boiler efficient?		
Are levels of insulation higher than those required by current buildings regulations?		
Sustainable Drainage Systems (SUDS)		
Has a SUDS been incorporated either at an individual building level or for the whole site?		
Has a SUDS that will contribute to amenity or biodiversity been incorporated?		
Water Conservation and Recycling		
Are water conserving fittings proposed? e.g. spray taps		
Can rainwater be collected for use outside?		
Has either a rainwater harvesting system or a grey water system been incorporated?		
Are hard surfaces kept to a minimum?		
Nature Conservation and Biodiversity		
Does the scheme involve measures to improve biodiversity e.g. the use of native plant species, bird and bat boxes?		
Is there potential for the inclusion of wildlife corridors?		

APPENDIX 9

Supplementary Planning Guidance Note (SPGN) Public Consultation, (Dec 18th 2015 and Feb 12th 2016) comments and responses to SPGN No20 Sustainable Buildings - Energy Conservation and Renewable Energy.

Commenting Body / Individual	Comment	Response	Recommendation
No.20 Sustainable Buildings - Energy Conservation and Renewable Energy			
Clwydian Range and Dee Valley AONB JAC	<p>The broad thrust of the advice and guidance set out in the SPG is supported, but the committee would ask that the need for a more sensitive approach in and around the AONB is made clear in the document. For example, para 1.12 which is part of the Council's overall approach to such development should be amended to '...such as Listed Buildings, Conservation Areas and the nationally recognised landscape of the Clwydian Range and Dee Valley AONB.'</p> <p>In addition, whilst the references to the AONB are welcomed in para 3.26, the title should be amended to 'Listed Buildings, Conservation Areas and the Clwydian Range and Dee Valley AONB' to properly reflect this. The committee would also suggest that UDP AONB Policy L2 should be cross-referenced in the policy checklist set out in Appendix 2.</p> <p>The section on wind power (paras 3.8 – 3.12) is limited in scope and very broad brush and, given the potential for such development to adversely impact on the AONB or its setting,</p>	<p>It is considered reasonable for the reference to be made in para 1.12 regarding the AONB.</p> <p>Given that reference is made in the para to the AONB then it is reasonable for this to be referenced in the heading.</p> <p>It is accepted that this SPG can only give brief coverage of each type of renewable energy and it is not intended that this SPG provide full guidance on wind power.</p>	<p>Amend the end of the last sentence in para 1.12 to read 'such as listed Buildings, conservation areas and the AONB'.</p> <p>Amend heading to para 3.26 to read 'Listed Buildings, World Heritage Sites, Conservation Areas and AONB'</p> <p>No change</p>

	<p>the committee would suggest that this section requires more detail or should be the subject of a separate SPG.</p>	<p>It is noted that since the SPG was drafted the Code for Sustainable Homes has been deleted as this has been incorporated into Building Regulations. The SPG will be amended to reflect this.</p>	<p>Update paras 1.5-1.6 to reflect the replacement of Code for Sustainable Homes with Building Regs.</p>
Bourne Leisure	<p>The Revised Draft Sustainable Buildings: Energy Conservation and Renewable Energy SPGN notes, at paragraph 3.23, that the following issues will be considered by the Council in evaluating proposals for renewable energy technologies:</p> <ol style="list-style-type: none"> 1. Noise; 2. Visual impact; 3. Overshadowing; 4. Historic / conservation interest; and, 5. Environmental impact. <p>Whilst Bourne Leisure welcomes the recognition of these potential adverse impacts of renewable energy schemes, the company is concerned that the revised draft SPGN does not contain guidance on the types of land use that should be considered as particularly sensitive to these impacts. Bourne Leisure considers that holiday accommodation, and caravans in particular, should be recognised as particularly sensitive to any noise and vibration impacts of renewable energy</p>	<p>The SPG is concerned with sustainable buildings and seeks to provide guidance on energy conservation and renewable energy measures. The SPG is not concerned with large scale renewable energy generation schemes.</p> <p>Noise is recognized as a potential issue in considering such technologies, but it is unclear what potential impacts such small scale technologies would have on holiday accommodation in particular caravans. The likelihood of having such development outside of a holiday park yet close enough to static caravan holiday accommodation to be a potential source of nuisance seems unlikely. It is more likely that potential sources of nuisance would arise from within a holiday park and control over this would rest with the park operator. Given that the Council's public protection would be consulted on all such applications, it is not considered necessary for the SPG to go into</p>	<p>No change</p>

	<p>schemes, given the lower level of noise insulation that these structures provide. Given the importance of tourism to the local and regional economies, Bourne Leisure considers that the SPGN should reinforce protection for tourist accommodation from potential adverse impacts of renewable energy development. Otherwise, there is a risk that tourists may be deterred by these issues from visiting or returning to the area, thereby impacting on the local and wider economy.</p>	<p>such a level of detail as sought by the objector.</p>	
CPRW	<p>Consideration should be given in para 1.5 to the recent Paris Agreement in 2015 relating to a legally binding global climate change deal. This would emphasise to developers the problem of climate change.</p>	<p>A reference to the Paris Agreement is considered reasonable</p>	<p>Add at the end of para 1.5 'The recent Paris Agreement on climate change will also be important in setting the future direction for climate change targets'</p>
CPRW	<p>In para 1.12 the first line should be amended to read '... will be considered on its merits against the 'location', design and sustainability...' to emphasise that the location of all development is an important material consideration.</p>	<p>It is accepted that location will be an important consideration in designing sustainable buildings.</p>	<p>Amend the first sentence of para 1.12 by adding 'locational,' before design.</p>
CPRW	<p>In para 1.12 the text 'designated landscapes and wildlife sites' should be added at the end of the final sentence as these are considerations that developers should take account of.</p>	<p>Whilst it is considered reasonable for AONB's to be referenced it is not appropriate for 'wildlife sites' to be included as these are designated on account of their ecological not visual amenity value.</p>	<p>Amend as per AONB JAC rep above</p>
CPRW	<p>At the end of para 3.6 a reference should be made to the Planning Inspectorate Planning Portal (Welsh site) regarding useful information as to the installation of photovoltaic systems.</p>	<p>The guidance on the Planning Portal is noted but rather than making reference to it as suggested it should be included in appendix 1.</p>	<p>Include in Appendix 1 'Planning Portal website'</p>

CPRW	Seeks the amendment of the third sentence of para 3.8 (However, there can be issues related to visual impact and noise) to read 'However, there can be issues related to visual impact, noise, topple distance (height of blade tip +10%) of those that are pole mounted, cumulative impact of other nearby turbines and shadow flicker'.	It is considered reasonable to expand the range of potential issues relating to domestic scale wind power.	Amend third sentence of para 3.8 to read 'However, there can be issues related to visual impact, noise, topple distance, and shadow flicker as well as cumulative effects of turbines'.
CPRW	At the end of the last sentence in para 3.8 add the words 'but acoustic information relating to a turbine will be required with any application submitted' to ensure noise levels will not cause a nuisance to nearby properties.	It is considered reasonable to request acoustic information relating to the proposed turbine.	Add at the end of last sentence of para 3.8 , but acoustic information relating to the proposed turbine should be provided with a planning application'.
CPRW	Para 3.11 which reads 'The Council may require any permission for a wind turbine to contain a condition requiring its removal and the reinstatement of the site when it has reached the end of its design life, or following a long period of non-use. It may also require financial guarantees for this by way of a Section 106 Planning Obligation / Agreement as part of the approval' should be rewritten as follows 'With any permission for a wind turbine the Council will include a condition requiring its removal and reinstatement of the site when it has reached the end of its design life, or following non-user over a period of [specify period]. It will also require financial guarantees	The guidance as written is considered to be perfectly clear in setting out the controls which can be attached to a planning permission for a wind turbine. The most appropriate means of control will depend on the specific circumstances of each case whereas the proposed objectors wording is considered to be overly prescriptive.	No change

	for this by way of a section 106 planning obligation / agreement as part of the removal'		
CPRW	At the end of the final sentence of para 3.14 add the following '... and there is a management plan in force to replace trees cut down for commercial purposes by a programme of replanting' to maintain the sustainability of the resource.	The requirement for a management plan in respect of replacement tree planting is not considered reasonable in considering a proposal for an individual wood burning system. This goes beyond the remit of the planning system.	No change
CPRW	In para 3.2.3 add the following bullet points which are all material planning consideration yet not mentioned in the SPG: <ul style="list-style-type: none"> • Topography • Topple distance • Shadow flicker • Glint and glare • Separation distance from telecommunication masts / overhead cables • Cumulative impact • Designated landscapes • Airport safeguarding zones 	It is considered reasonable for some of the above factors to be include as bullet points in para 3.23	Amend para 3.23 by adding bullet points for the following: topography, topple distance, shadow flicker, glint and glare, separation distances from telecommunications masts and cables, cumulative impact and airport safeguarding zones'.