Final Sustainable Design SPD (Part 1), including the Sustainability Checklist (Part 1)

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Contents

Introduction

1.0 Purpose and Scope of the Sustainable Design SPD

1.1 The built environment plays a key role in both sustainability and place making. Development has a significant and direct impact on the environment, through the use of finite natural resources such as water and minerals, in addition to the generation of carbon emissions and waste. It also directly impacts on how communities develop and whether they are sustainable.

1.2 How we plan development in the future will have a significant impact, not only on Shropshire but also on the impact that Shropshire makes on the wider environment.

1.3 Shropshire has a high quality natural and built environment, which is a key asset. It is not only an attractive place in which to live and work but has a wealth of biodiversity and landscape designations, in addition to a rich historic environment, which makes it an important tourist destination. Managing development so that it is appropriately designed and sustainably constructed can therefore provide environmental, social and economic benefits.

1.4 This SPD supports Core Strategy Policy CS6, in providing guidance on how new development in Shropshire should be designed and constructed. Through the use of a Sustainability Checklist, the SPD requires all development proposals to meet a minimum standard in relation to a range of sustainable design principles, in accordance with current national sustainable building standards. It will ensure that future developments are of a high quality, which respect and enhance local distinctiveness, and incorporate measures to optimise the effectiveness to combat climate change and manage or mitigate its effects.

1.5 In ensuring that future developments are designed to a high quality and incorporate sustainable design and construction principles, it is clear that the Sustainable Design SPD and accompanying Sustainability Checklist will need to cover a breadth of issues. Given the scope of the SPD, and the recognition that there is a need to adopt key sustainability standards alongside the Core Strategy, to prevent there being a policy gap, it is intended the Sustainable Design SPD and Checklist will be prepared in two parts.

1.6 This document is the adopted version of Part 1 of the SPD and Checklist and focuses entirely on sustainability elements, outlining standards for water, energy and waste management. Part 2 will focus on place making, outlining standards for elements such as design, transport, ecology and recreation and open space and will be prepared during 2012.

1.7 The objectives of this Part 1 SPD and accompanying Part 1 Checklist are to:

- Ensure new development incorporates sustainable water management measures to protect Shropshire's water resources, reduce flood risk and avoid an adverse impact on water quality.
- Ensure new development is energy efficient and that opportunities for renewable energy generation are pursued, where possible.
- Ensure new developments achieve greater resource efficiency through sustainable waste management, both through the period of construction and their subsequent operation.

2.0 Policy Background

2.1 This Part 1 SPD and accompanying Part 1 Sustainability Checklist supports Core Strategy CS6, which states:

> ***All development proposals, including changes to existing buildings, will be required to achieve applicable national standards, or for water use evidence base local standards, as reflected in the minimum criteria set out in the sustainability checklist. This will ensure that sustainable design and construction principles are incorporated within new development, and that resource and energy efficiency and renewable energy generation are adequately addressed and improved where possible. This checklist will be developed as part of a Sustainable Design SPD.***

2.2 Sustainability is a fast changing area of work, with national guidance constantly being reviewed and updated in light of new evidence and technological advances. This fast changing context is reflected in the recent planning policy statement consultation on Planning for a Low Carbon Future, in which the Government lists a wide range of new legislation and recent policy which has been put in place within the last couple of years and recognises the future changes that are likely to be made to building regulations. Given the work being undertaken at a national level, the consultation statement recognises that, over time, planning may move away from setting individual local targets.

2.3 This Part 1 SPD reflects the current and emerging most influential national guidance on water, energy and waste management issues, as listed below. Further information and links to this guidance are provided in Appendix 2.

- Planning Policy Statement 1: Delivering Sustainable Development;
- Planning Policy Statement: Planning and Climate Change- Supplement to Planning Policy Statement 1;
- Consultation on a Planning Policy Statement: Planning for a Low Carbon Future in a Changing Climate;
- Planning Policy Statement 10: Planning for Sustainable Waste Management;

- Planning Policy Statement 22: Renewable Energy;
- Planning Policy Statement 25: Development and Flood Risk;
- The Flood and Water Management Act (2010);
- Sustainable New Homes- The Road to Zero Carbon;
- AECB Water Standards;
- Building Regulations;
- DETR Circular 03/99- Planning requirement in respect of the Use of Non-Mains Sewerage incorporating Septic Tanks in New Development;
- Waste Strategy for England 2007.

2.4 In addition, it reflects key documents and evidence at a local level, including:

- Shropshire Core Strategy- particularly policies CS6, CS8, CS18, CS19;
- Waste Technical Background Paper;
- Shropshire Water Cycle Study;
- Shropshire Council Climate Change Strategy;
- Shropshire's Community Strategy 2010-2020;
- Shropshire Council's validation requirements.

2.5 The Council's commitment to sustainability is reflected in the Council's Sustainable Construction Policy. This ensures that the Council's own building stock mitigates and can adapt to future climate change through ensuring that it is in accordance with the BREEAM standards. This SPD supports this policy, by ensuring that all new development incorporates sustainable design principles.

2.6 The SPD also supports the new localism agenda, by providing the opportunity for local communities to influence the sustainable design standards that they feel new developments should meet in their area, responding to the local priorities for sustainable development, outlined within the Shropshire Place Plans and any future Neighbourhood Plans.

3.0 Benefits of Incorporating Sustainability Principles

3.1 Through the application of the standards within the Sustainability Checklist and supporting guidance within this SPD, it is possible to minimise the detrimental impact from new development and ensure that social, economic and environmental benefits are provided for Shropshire.

3.2 Potential benefits include:

- Sustainable use and protection of Shropshire's assets and resources and cross border assets and resources;
- Lower maintenance and running costs for new occupiers;
- Enhanced property values resulting from the demand for sustainably constructed buildings;

- Opportunity for local communities to shape the development of the communities in which they live.

3.3 In addition, the use of a Sustainability Checklist provides the following benefits:

- Provision of a straightforward tool for assessing the sustainability performance of development proposals;
- Provision of mechanism for specifying levels of performance, thereby improving the profile and marketability of new developments;
- Provision of a monitoring mechanism for assessing the levels of performance within Shropshire on sustainability issues;
- Provision of a flexible approach, whereby future standards can be reviewed and updated in line with emerging national policy and additional local evidence.

4.0 Impact on Development Viability

4.1 The minimum standards within the Checklist reflect current nationally described sustainability standards. As such, these standards will continue to be a requirement within new development. It is however, recognised, that applying these nationally prescribed standards alongside local requirements, such as affordable housing and infrastructure provision can have an impact on development viability.

4.2 The Council has completed a Viability Assessment, as part of the LDF Evidence Base, to inform how the local requirements for affordable housing and infrastructure provision may need to be varied in light of national sustainability standards. This Viability Assessment takes account of the costs of construction, which has been used to assess levels of viability across different parts of Shropshire.

4.3 In light of the Viability Assessment, Policy CS11 (Type and Affordability of Housing) states that the approach to affordable housing provision will have regard to economic viability, whereby the calculation for affordable housing provision will be set through the Shropshire Dynamic Viability Index. This will allow the affordable housing target rate to alter over time, to reflect changes, including changes in the cost of construction.

4.4 In addition, Policy CS9 (Infrastructure Contributions) identifies that the level of contributions sought for community infrastructure provision will vary, to reflect economic viability. As set out in Policy CS11, a Dynamic Viability Index will be used to ensure that viability is reassessed regularly, to reflect changes, including changes to the cost of construction.

5.0 How to use the Part 1 Sustainability Checklist

5.1 As outlined in Policy CS6, all development proposals must complete the Sustainability Checklist as a validation requirement and be in

accordance with at least the minimum standards set out within it.

Who should use the Part 1 Checklist?

5.2 The Part 1 Sustainability Checklist in Appendix 1 should be used by all applicants to demonstrate that their development proposal accords with Shropshire's sustainability requirements for water, energy and waste.

What does the Part 1 Checklist include?

5.3 In order to achieve the objectives set out in paragraph 1.7, the Part 1 Checklist sets out a range of questions in relation to water, energy and waste management, which are pertinent to Shropshire.

5.4 However, not all of the questions are relevant to every development proposal. The Checklist distinguishes between different scales of development, categorising proposals according to whether they are householder, conversions, minor or major development. In addition, the Checklist also distinguishes between commercial and residential developments.

5.5 Householder developments are those that involve works or extension to an existing dwelling. This covers developments such as:

- Extensions;
- Conservatories;
- Garages.

5.6 Conversions are those developments which involve a change of a buildings use.

5.7 Minor development is defined as development where the number of dwellings to be constructed is between 1 and 9 inclusive. Where the number of dwellings to be constructed is not given in the application, a site area of less than 0.5 hectares should be used. For non residential uses, a minor development is one where the floor space to be built is less than 1,000 square metres or where the site area is less than 1 hectare.

5.8 Major development is defined as development where the number of dwellings to be constructed is 10 and above or the site area is above 0.5 hectares. For non residential uses, major development is one where the floor space is 1,000 square metres and above.

5.9 Applicants should therefore identify and answer the questions applicable to them, based on the scale and type of development proposed.

What are the Part 1 Checklist requirements?

5.10 The Checklist identifies 'minimum', 'good' and 'best' standards for each question. As outlined in Core Strategy Policy CS6, it is a requirement

for all development proposals to meet the minimum standards set out within the Checklist, for the particular type and scale of development.

5.11 Whilst the minimum requirements reflect current nationally described sustainability standards, one of the main purposes of the Checklist is to encourage applicants to consider sustainable design early in the design process. Early consideration of sustainable design principles and incorporation within business plans and designs, not only ensures that proposals are more sustainable than they would otherwise have been; it also makes good business sense, by reducing waste and improving resource efficiency, thereby having a positive impact on development viability. The ultimate aim is to help promote sustainable design through a process of two way negotiation, in a proactive and positive manner.

5.12 Applicants should therefore consider the 'good' and 'best' standards as an integral part of the design process and apply these, wherever possible, as good practice.

5.13 Proposals which only meet the minimum requirements across all questions are likely to trigger the need for further discussion with Development Management Officers, to confirm whether this is acceptable for the development and site in question and to assess whether higher standards of performance can and should be achieved.

5.14 The Sustainability Checklist provides a statement of intent at the planning application stage, detailing how the development is intended to be designed. However, to ensure that the final built development complies with the submitted Checklist, it is envisaged that a standard planning condition will be introduced, requiring developments to be in accordance with the Checklist provided at the planning application stage.

How does the Checklist link to the existing validation requirements?

5.15 In order to enable the proper validation and determination of planning applications, the Council has established a set of validation requirements. The validation requirements seek to ensure that planning applications are supported by all the necessary information to enable the Council to provide a quicker, more predictable and efficient planning service.

5.16 It is intended that the validation requirements will be included as part of the Sustainability Checklist, so that all the information required to determine a planning application is outlined in a single document. This will ensure absolute clarity on what is required for the different types of development.

6.0 Reviewing and Updating the Checklist Requirements

6.1 The Sustainability Checklist is a 'living' document which will be reviewed and updated in accordance with changing national guidance and local evidence.

6.2 Once the Part 2 Checklist has been prepared, it is hoped that the complete Checklist will be made available as an online tool.

6.3 Delivery against the checklist standards will be measured as part of the Annual Monitoring Report (AMR) to provide an indication of how the policy objectives within Policy CS6 are being met. On an annual basis, the AMR will provide an indication of the proportions of development within Shropshire meeting the minimum, good and best standards for each of the defined sustainability criteria.

6.4 Work is also ongoing to explore the potential for introducing an award scheme as an integral part of the Checklist approach. Developments may be scored, based on their ability to meet the minimum, good and best standards within the Checklist and provided with an overall rating as part of a Shropshire-wide Sustainable Design award scheme. Initial feedback from a targeted consultation workshop with developers has suggested that this approach would provide a particular incentive to achieve more than the minimum standard within the Checklist. In particular it would provide an important marketing opportunity for developers and the Council to raise the profile of developments achieving a high level of performance in sustainable design.

Water Management

7.0 Local Context- Water Management issues in Shropshire

7.1 The effective management of water is a key issue for Shropshire, which is reflected in Core Strategy Policy CS18: Sustainable Water Management. The guidance and requirements within this Part 1 SPD and Checklist, directly support Policy CS18, but will in time be supplemented by further guidance as part of a Water Management SPD. This SPD therefore merely covers the key sustainability requirements for water management within new development and should be read in conjunction with the Water Management SPD, when prepared.

Water Resources

7.2 Shropshire is classified by the Environment Agency as being an area of moderate water stress. This takes account of the balance between water availability and the demand for public water supply. It is therefore the overall water resource balance for Shropshire.

7.3 The Environment Agency manages water resources at a local level through Catchment Abstraction Management Plans (CAMS) which are prepared on a 6 yearly cycle. An assessment of the Shropshire CAMS as part of the Shropshire Water Cycle Study has identified that indigenous water resources have limited abstraction potential. The availability of groundwater varies throughout Shropshire and a number of groundwater resources are closed to further abstraction licensing. Whilst, surface water is more widely available, abstraction is limited due to the knock on impact this would have on the River Severn Corridor.

7.4 Despite the above constraints, the ability for water companies to import and export water between water resource zones, means that water supply within Shropshire is not wholly dependant upon abstractions. The current Water Resource Management Plan for Shropshire therefore suggests that water supply and demand can be balanced through greater demand management (metering) and leakage control measures.

7.5 However, it is clear that new development will place an increased demand on Shropshire's water resources. In addition, the effects of climate change are likely to further reduce water supply and increase water demand. Analysis undertaken as part of the Shropshire Water Cycle Study suggests that adopting a business as usual model to new development could result in an increase in demand in Shropshire of 17.5% by 2026. It is therefore critical that all new development incorporates measures to use water more efficiently.

Water Quality

7.6 The wealth of environmental designations and diverse range of ecology is a reflection of the good water quality within Shropshire.

7.7 The Water Framework Directive, which was transposed into UK law in December 2003, provides a legislative background for protecting and improving water bodies, throughout Europe. Under this Directive, all water bodies must not deteriorate in terms of quality and must seek to achieve 'good' ecological status by 2015. To ensure delivery of these objectives, the Environment Agency, as the lead authority for the delivery of the Water Framework Directive, has introduced River Basin Management Plans which outline the current status for each water body, the main pressures impacting each water body and a plan outlining the management actions that are required.

7.8 Shropshire predominantly lies within the Severn River Basin District, although a small area to the north lies within the Dee and North West River Basin Districts. Although Shropshire is a rural county, the presence of larger towns such as Shrewsbury and the Market Towns, means that the water bodies in Shropshire are impacted by both urban and rural pressures, including point sources such as sewage treatment works and diffuse sources such as agriculture and forestry. Further information on the Water Framework Directive and the River Basin Management Plans covering Shropshire can be found in the Shropshire Water Cycle Study, or on the Environment Agency's website at:
http://www.environment-agency.gov.uk/research/planning/33106.aspx

7.9 In terms of the development process it is important to ensure that development does not adversely affect water quality and does not hinder the ability of a water body to meet the requirements of the Water Framework Directive. In particular, in a rural county such as Shropshire it is not always possible to connect new development to the foul drainage network. Whilst public sewers are the responsibility of the utility company and managed and upgraded in light of new development as part of their Asset Management Plan (AMPs) cycles, non mains drainage is the responsibility of individual property owners. Inadequate non mains drainage can potentially result in environmental, amenity and public health problems. It is therefore important that suitable non mains drainage systems are incorporated within new development so that they function and can be managed correctly.

Flood Risk

7.10 Flood risk management is an important consideration in Shropshire as there is a history of flooding within the county, from both fluvial (watercourses) and pluvial (surface water) sources. The River Severn and its tributaries are known to affect towns such as Shrewsbury, Bridgnorth and Ludlow whilst other settlements such as Much Wenlock, Church Stretton and Albrighton are also recognised as being at high risk from surface water flooding.

7.11 The Strategic Flood Risk Assessments and Shropshire Water Cycle Study provide an assessment of flood risk throughout Shropshire, in which the vulnerability of settlements to the various sources of flooding has been mapped.

7.12 Whilst it is recognised that we can not always prevent flooding from occurring, we can manage the risks of it happening and reduce the consequences if it does happen. It is therefore important that flood risk management is a consideration within any new development.

7.13 Any new development must be in accordance with the national policy requirements set out in Planning Policy Statement 25 (PPS25); Development and Flood Risk. This requires all new development to be located within areas at lowest risk of flooding and not increase the risk of flooding elsewhere. In addition, development should be designed to be safe in times of flood, through the provision of features such as safe pedestrian access routes.

7.14 In terms of surface water drainage, the effect of development is generally to reduce the permeability of a site, which in turn increases the volume of water and peak flow rate from the developed site during and after a rainfall event. All development should therefore incorporate sustainable surface water drainage measures to reduce the risk of surface water flooding either on site or downstream of the development.

8.0 Standards and Guidance

8.1 Development is not simply about constructing new buildings. To operate effectively, developments are dependent on a range of services and supporting infrastructure. Water is a critical element, not only in terms of the provision of clean water for drinking and washing but also the safe disposal of wastewater and protection of development from flooding.

Water Conservation and Efficiency

8.2 There is a finite capacity within Shropshire's water environment. It can not simply provide more and more water to serve new development. In addition, climate change is predicted to lead to hotter, drier summers which are likely to reduce the water available for public water supply. As part of the design of new development, consideration needs to be given to water conservation and efficiency.

Minimum water efficiency standards for residential development

8.3 The Shropshire Water Cycle Study provides recommendations for water resource management. It identifies that it is critical that all new residential developments are built to a minimum of Level 3 Code for Sustainable Homes standard, which requires the water efficiency of new dwellings to be 105l/h/d.

8.4 In light of this detailed local evidence, Core Strategy Policy CS18 makes it a requirement for new development, including changes to existing buildings, to incorporate measures to meet the water efficiency objectives within the Shropshire Water Cycle Study. The sustainability checklist therefore reflects this policy requirement.

8.5 Whilst this policy requirement exceeds current building regulations, it should be noted that it is based on robust local evidence rather than wider national requirements. Whilst this local requirement will mean that additional consideration may need to be given to water efficiency measures as part of the design of a development, it is evident that, at a national level, many developments are already meeting the Code Level 3 standard for water efficiency. The Government already requires social housing developments to be built to Code Level 3 and standards for the reduction of water use are expected to be made mandatory through amendments to existing Building Regulations.

Minimum water efficiency standards for non-residential development

8.6 As the Code for Sustainable Homes does not apply to non-residential development, such proposals should be in accordance with the Good Practice requirements of the AECB water standard. This identifies the performance requirements for individual water using devices within the development, rather than using a whole building calculation.

8.7 Although extra effort will be required at the design and specification stage, to ensure new developments meet the Good Practice requirements, compared to a standard building, guidance on the AECB water standards does indicate that there will be minimal additional expense over 'standard' fittings. Guidance on the Good Practice requirements within the AECB water standard can be found at: http://www.aecb.net/standards_and_guidance.php

Application of the minimum water efficiency standards

8.8 Whilst the above standards will have a positive impact on reducing water demand, the Shropshire Water Cycle Study does identify that the greatest reduction in water demand can be achieved by reducing demands in the existing population. This is because the existing population account for a larger proportion of the total population than that from new development.

8.9 The water efficiency standards, above, therefore apply to conversions, minor and major development proposals.

8.10 As part of the development of this SPD, the Council is exploring the opportunity to use CLGs 'Water Efficiency Calculator within new dwellings', as a tool for applicants to use, in providing evidence at the planning application stage that the minimum standard for water efficiency will be met.

Good and Best water efficiency standards

8.11 Whilst the above minimum standards are a requirement for all new development, applicants are encouraged to meet the good or best standards set out within the Sustainability Checklist to reduce the demands placed on Shropshire's water environment. These standards are in accordance with the progressive targets set out within the Code for Sustainable Homes.

8.12 In terms of the good standards, residential developments are encouraged to have a water efficiency of 90l/h/d. A water efficiency of 80l/h/d will be required for developments to be considered to meet the best standard.

8.13 For non residential developments, there is no distinction between good and best standards, since the best practice option is considered to be the Best Practice requirements within the AECB water standard. Guidance on the Best Practice requirements within the AECB water standard can be found at:
http://www.aecb.net/standards_and_guidance.php

Further information

8.14 Further guidance and best practice examples on water efficient appliances, technologies and fittings will be provided in the Water Management SPD.

Foul Drainage

8.15 Shropshire's high quality water environment must be protected and steps need to be taken to meet the requirements of the Water Framework Directive. Whilst a range of management processes are identified within the River Basin Management Plans which cover Shropshire, it is clear that the effective management of new development is a key part of protecting and improving the water environment. Although the identification of sustainable locations for development is an important part, consideration must be given to the design of new development, particularly in relation to the use of suitable drainage systems to prevent pollution.

8.16 In accordance with DETR Circular 03/99 'Planning Requirements in Respect of the Use of Non-Mains Sewerage Incorporating Septic Tanks in New Development' and Part H of the Building Regulations (2000), there is a preference for all new developments to be connected to a public sewer. However, there is recognition that Shropshire is a rural county and connection to a mains drainage system may not always be possible.

Minimum standards for foul drainage within all developments

8.17 In accordance with the hierarchy of drainage options, set out in Circular 03/99, the minimum requirement will be for development to be served by a cesspool, but only where it is evident that other more sustainable drainage options have been considered first but found to not be appropriate.

8.18 The provision of a Drainage Assessment already forms part of Shropshire Council's validation requirements, which is reflected in the standards set out in this SPD and supporting Checklist.

8.19 A Foul Drainage Assessment must be provided as part of the planning application where it is not possible to connect to a public sewer. This Assessment should provide evidence that a connection to the public sewer is not feasible. The existence of capacity or operating problems within the public sewer is not considered to be a valid reason for non-connection, where a connection to the public sewer network would be possible in all other respects. In addition, where a cesspool is used, written justification must also be provided as part of the Foul Drainage Assessment as to why other more sustainable methods of foul drainage disposal have not been used (i.e. a package sewage treatment plant or septic tank).

8.20 The Foul Drainage Assessment should include information on the design of the cesspool, the details of which must be signed off by the applicant.

Good and Best standards for foul drainage within all developments

8.21 As outlined in Circular 03/99, cesspools are considered the option of last resort and are hence the minimum requirement within the Sustainability Checklist. More sustainable methods of drainage are preferred options within the drainage hierarchy, and applicants are encouraged to incorporate these within new developments, to meet the good or best standards within the Sustainability Checklist.

8.22 For developments to meet the good standard for foul drainage, the requirement is for the new development to be served by a package treatment plant, unless the development warrants a septic tank, for example where the development is for holiday lets and therefore gives rise to intermittent flows. As per the minimum requirement, a Foul Drainage Assessment must be provided as part of the planning application and provide evidence that a connection to the public sewer is not feasible.

8.23 For developments to meet the best standard for foul drainage, the development must be served by a public sewer. However, in accordance with Core Strategy Policy CS18 it is important that consideration is given to the capacity of the existing wastewater infrastructure to accommodate additional foul drainage. The

Major developments

8.24 In accordance with Core Strategy Policy CS18, all major development proposals connecting to a public sewer must provide confirmation from the relevant utility provider that there is adequate wastewater infrastructure in place to serve the development or that the timing of additional infrastructure is in accordance with the completion of the development.

Further information

8.25 Further guidance and best practice examples on water efficient appliances, technologies and fittings will be provided in the Water Management SPD.

Flood Risk Management

8.26 Flooding not only poses a risk to people's lives, but can also cause significant damage to businesses and people's livelihoods. New development should therefore be located, designed, built and operated in ways that reduce the risks from flooding as much as possible.

Building in flood risk areas

8.27 The Strategic Flood Risk Assessments which cover Shropshire identify the level of flood risk in different parts of the county. In accordance with the guidance in PPS25, it classifies areas according to whether they are in zone 1 (low probability of flooding), zone 2 (medium probability of flooding) or zone 3 (high probability of flooding).

8.28 The Flood Risk Assessments for Shropshire are available to view and download online, using the following link.
http://www.shropshire.gov.uk/environmentmaintenance.nsf/open/842F6234CCD03DD98025772E0051FC88

8.29 They contain information that will help identify:

- the flood zone the development is located in
- past incidents of flooding which may need to be considered eg sewer flooding
- the flood risk vulnerability of different land uses and their compatibility with different flood zones

- the tests that need to be met within each zone, in accordance with the Sustainability Checklist requirements
- guidance on site specific Flood Risk Assessments

Minimum standards for flood risk management with all developments

8.30 In line with PPS25, development should be located in areas at lowest risk of flooding. However, it is recognised that this may not always be possible. The minimum standard within the Sustainability Checklist is therefore for those developments located within zone 3 (high probability) to be in accordance with the requirements in PPS25, including the Sequential and Exception Tests. The full requirements are outlined in the Sustainability Checklist.

8.31 For application of the Sequential Test, applicants should:

- identify key evidence such as the Strategic Housing Land Availability Assessment
- identify an appropriate area of search
- identify potential sites within the area of search
- explain why the potential sites should be discounted.

Good and Best standards for flood risk management within all developments

8.32 For development to meet the good standard within the Checklist, the site should be located within SFRA zone 2 and the Sequential Test should identify that there are no reasonably available alternative sites in Zone 1.

8.33 For development to meet the best standard within the Checklist, the site should be located in zone 1. If the site is greater than 1ha in size, a site specific Flood Risk Assessment should be completed.

8.34 All development should be designed to take account of the guidance within the Strategic Flood Risk Assessments.

Further information

8.35 Information on how to minimise flood risk is available from the Environment Agency

Further information, including design and specification advice will be provided in the Water Management SPD.

Surface Water Drainage

8.36 The Shropshire Water Cycle Study has identified that surface water flooding is an issue in parts of Shropshire. Surface water flooding typically occurs during extreme rainfall events when the capacity of conventional, piped drainage, systems is exceeded. To reduce the risk of surface water flooding, the design of new development should incorporate the careful management of surface water.

Minimum standards for surface water drainage within all developments

8.37 In accordance with responsibilities under the Flood and Water Management Act 2010, and in light of the known problems with surface water flooding in Shropshire, the Council has prepared some interim guidance on Surface Water Management. The interim guidance will in time form part of the Water Management SPD, but in the meantime should be used as the Council's guidance on surface water drainage within new development.

8.38 Every development will be required to incorporate sustainable drainage techniques in accordance with Core Strategy Policy CS18. However, as outlined in Policy CS18, a targeted approach will be taken to surface water management, based on the level of risk identified and scale of development being proposed. The minimum standards within the Sustainability Checklist therefore vary as reflected in the Interim Guidance on Surface Water Management.

Further information

8.39 Further information on the use of sustainable drainage systems is available on the CIRIA website http://www.ciria.org/service/Home/AM/ContentManagerNet/HomePages/CIRIA_1502_20080929T115140HomePage.aspx?Section=Home

Energy Efficiency and Generation

9.0 Local Context - Energy Management Issues in Shropshire

9.1 Promoting a low carbon Shropshire is a key part of Shropshire's Core Strategy. The need for development to incorporate energy efficiency measures and to identify opportunities for renewable energy generation is reflected in Policy CS6: Sustainable Design and Development Principles, which seeks to ensure that all new developments use sustainable design principles to mitigate and adapt to climate change. In addition, decentralised, low carbon and renewable energy is seen as a key part of infrastructure provision as part of Policy CS8: Facilities, Services and Infrastructure Provision.

9.2 Shropshire is served by two electricity network providers; Scottish Power in the north and Western Power Distribution in the central and southern parts of the county. Consultation with these infrastructure providers as part of developing an Implementation Plan for the Local Development Framework has identified a number of capacity constraints in electricity provision. Some of these capacity constraints are already causing problems in some areas, such as Whitchurch. Maintaining energy supplies is therefore a key consideration for new development within Shropshire.

9.3 Whilst upgrading electricity supplies to meet demand is important, there is a clear national driver towards the use of more sustainable energy sources. Greater energy efficiency and generation of energy from renewable sources will allow Shropshire to become more self sufficient in energy generation. This will assist in reducing the existing capacity constraints and demand for additional electricity supply. It can also provide great benefits to Shropshire, through encouraging more inward investment, ensuring the protection of our environment and providing employment, training and educational opportunities for our communities.

9.4 There is currently limited local information on the opportunities available within Shropshire for more sustainable sources of energy or the constraints that would limit their implementation within new development. The Council is, however, seeking to address this issue through building an evidence base of information on the potential for energy generation using a various types of technology in different parts of the county. This will include local information on wind speeds and river flows. Once it is combined with information on known constraints, such as accessibility and landscape character, the information will be used to map the potential for renewable technologies.

10.0 Standards and Guidance

10.1 Around 27% of the UK's total carbon emissions come from the domestic housing sector through energy use in the home for heating, hot water, lighting and appliances. New development can therefore

make a significant contribution to carbon emissions and it is important that new development proposals therefore consider opportunities for sustainable energy use.

10.2 The energy hierarchy sets out the principles for reducing the carbon emissions from energy use.

The Energy Hierarchy
A. Minimise energy demand and consumption
B. Maximise energy efficiency
C. Supply energy efficiently.
D. Use renewable energy

10.3 The Sustainability Checklist follows the hierarchy by considering how to minimise demand and maximise efficiency before looking at renewable and low-carbon energy supply measures.

Minimising energy demand and maximising energy efficiency

Minimum standard within all developments

10.4 The lack of local evidence or national standards for minimising energy demand and maximising energy efficiency means that it is difficult for the Sustainability Checklist to prescribe a minimum target or method to be used within new development.

10.5 However, the Council is keen to encourage applicants to consider minimising energy demand and maximising energy efficiency as an integral part of the design process. As such, the minimum requirement within the Checklist is for all developments to complete an Energy Demand and Efficiency Statement showing how consideration has been given to these issues.

10.6 A reasoned justification should be provided within the Statement (and continued on separate sheet if necessary) for each measure not proposed. In line with the national drive towards reducing carbon emissions, development viability may not be considered a reasonable justification, particularly as the Dynamic Viability Index allows the Council to amend contributions for affordable housing and infrastructure to take account of increasing costs of construction.

10.7 The Energy Demand and Efficiency Statement in the Sustainability Checklist reflects the following topics:

Orientation and solar gain.

10.8 The siting, design, layout and orientation of buildings can have a significant impact on sustainability and improve the comfort of a building's occupants. One of the simplest methods of reducing energy demand is to provide light and heat through natural sunlight and solar heat gain. Solar heat gain occurs when heat from the sun passes through glass and heats up a room. Using the design of a building to

maximise solar gain not only reduces energy consumption and fuel bills, but can also offer occupants a pleasant living and working environment. However, care must be taken to ensure that solar gain does not lead to over-heating which would then require energy for cooling.

10.9 To maximise access to the sun, buildings should have their main elevations within 30^{o} of due south (either to the east to maximise morning sunlight or to the west to maximise evening sunlight). In principle, the main living or working spaces should be located on these elevations. Rooms with a lower level of occupancy, such as toilets and storage space should be located on the northern side of the building.

Thermal mass and Insulation

10.10 Thermal mass is the capacity of a building to store and regulate heat. Buildings with high thermal mass often take a long time to heat up but also a long time to cool down. It is effective in reducing energy demand and improving building comfort. Generally, heavy materials such as stone, concrete and brick have a higher specific heat capacity and are thus better in thermal mass terms than materials such as wood, although wood has better thermal insulation properties than these materaisl (see below).

10.11 Insulation is one of the most effective ways to prevent energy wastage within a building. It ensures that heat loss is minimised and therefore helps to maximise energy efficiency. Important areas to insulate include the roof, walls and floors, in addition to internal fittings such as pipes and water storage tanks. Loss from windows can also be reduced through double or triple glazing. When designing larger scale developments, consideration may be given to joining development units together to minimise the number of external walls and increase thermal massing. However, when incorporating insulation, it is important to provide adequate ventilation, without draughts, to avoid condensation problems.

Efficient Equipment and Controls.

10.12 Appliances to provide lighting, heating and other essential services are major consumers of energy. Choosing energy efficient appliances can significantly reduce energy demand as well as fuel costs.

Home appliances

10.13 Home appliances account for a significant proportion of carbon dioxide emissions. The EU energy label rates products from A, (the most efficient) to G (the least efficient). It is recommended that only the most efficient products, which also carry the Energy Saving Recommended logo, should be used.

Heating

10.14 Boilers account for around 60% of the carbon dioxide emissions in a gas heated home. By replacing old boilers with a high efficiency condensing boiler and improving heating controls can significantly cut carbon emissions and save money. Condensing boilers are considered to be highly efficient as they work on the principle of recovering as much as possible of the waste heat which is normally wasted from the flue of a conventional boiler.

Lighting

10.15 Even simple measures such as the use of energy efficient light bulbs can have a significant impact. Energy saving light bulbs use up to 80% less electricity than a standard bulb but produce the same amount of light. New development should therefore incorporate the appropriate fittings for Compact Fluorescent Light (energy saving) bulbs as good practice.

Further information on efficient equipment and controls is available from the Energy Saving Trust http://www.energysavingtrust.org.uk/Home-improvements-and-products

Good and Best Standards for residential developments

10.16 The Good and Best standards for all new residential developments are based on part L1A of the Building Regulations (October 2010). They ask for an improvement of 25% and 100% respectively on the Target Emission Rate (TER) in carbon dioxide emissions (CO2) from the completed dwelling. A 25% improvement in CO2 emissions is equivalent to Level 4 of the Code for Sustainable Homes, whilst a 100% improvement equates to Code level 5 (Code for Sustainable Homes Nov 2010).

10.17 For residential developments the TER is calculated as part of the government's Standard Assessment Procedure (SAP) for the Energy Rating of Dwellings. SAP works by assessing how much energy a dwelling will consume and how much carbon dioxide (CO2) will be emitted in delivering a defined level of comfort and service provision, based on standardised occupancy conditions. This enables a like for like comparison of dwelling performance. The current SAP edition is SAP 2009

Good and Best Standards for non- residential developments

10.18 The Good and Best Standards for non-residential developments are essentially the same as those for residential except that the TER for non-residential development is calculated using the Simplified Building Energy Model (SBEM).

Providing electricity from renewable, low carbon or energy efficient sources.

10.19 Following measures to address demand management, developments will be left with a residual energy demand. This is the amount of energy needed once all appropriate energy efficiency measures have been implemented. The energy demand (wattage) per square metre forms part of the Predicted Energy Assessment process so it should be possible to calculate the residual energy demand for any new dwelling. For non residential development the residual energy demand can be calculated through the SBEM process.

10.20 The energy hierarchy indicates that this residual energy demand should be supplied in the most efficient way. The EU Renewable Energy Directive sets a national target for 15% of energy to be provided from renewable sources by 2020. In addition, the UK Renewable Energy Strategy 2009 suggests that renewables could provide more than 30% of our electricity (compared to around 5.5% today).

10.21 The decision on which energy source to use to supply the residual energy demand will depend on many factors including availability of fuel/energy source, proximity to existing generating facilities or energy infrastructure, cost and technical feasibility. A brief summary of those technologies considered most suitable for development in Shropshire follows below. This is intended to be a guide only and should not preclude the use of other low-carbon or renewable technologies as and when they become cost effective. Care must be taken whichever technology is proposed to ensure that this does not pose unacceptable pollution or health risks.

The Minimum Standard for all Developments

10.22 The lack of local evidence or national standards for the amount of electricity that developments should provide from renewable, low carbon sources or energy efficient sources means that it is difficult for the Sustainability Checklist to prescribe a minimum target.

10.23 However, the Council is keen to encourage applicants to consider how the energy demands from a development may be met from renewable, low carbon or energy efficient sources. As such, the minimum requirement within the Checklist is for all developments to provide a written statement outlining how the various renewable energy sources have been considered. Consideration should be given to efficient energy sources early in the design stage of a development, to minimise the impact on development viability.

10.24 Given the range of options available, it is expected that developments should be able to incorporate at least one type of renewable or low carbon technology and therefore reach the ‘good’ standard (set out below) in the Checklist. However, it is recognised that certain

developments may be constrained in their ability to incorporate renewable or low carbon technologies because of other considerations such as landscape sensitivity. It is hoped that consideration of renewable or low carbon technologies early in the design process will assist in minimising these constraints. However, in instances where no measures are proposed, and the development is therefore not considered to meet the good standard, reasoned justification must be provided within the statement as to why the options are not feasible.

10.25 Given the national drive towards zero carbon, development viability may not always be considered reasonable justification, particularly since the Dynamic Viability Index will allow the Council to amend contributions for affordable housing and infrastructure, to take account of increasing costs of construction.

The Good Standard for all Developments

10.26 The Council considers that all forms of renewable, low carbon or energy efficient technologies should be encouraged for all new development. The Good Standard requires that any one of the following be used to supply the residual electricity demand for the development; oil or gas-Combined Heat and Power (CHP); wind; solar photovoltaic; hydro or biomass-CHP. The guidance below sets out the advantages of the various forms considered suitable for Shropshire. The Council particularly welcomes biomass CHP as this represents both a renewable and an efficient method of providing electricity.

Combined Heat and Power.

10.27 Combined Heat and Power (CHP) is the simultaneous production of electricity and usable heat from a single generating plant. Conventional electricity generation is extremely inefficient as only a small part of the input energy is converted into electricity (typically 25-35%). The remaining 65-75% comprises heat as a waste product. A CHP system uses this waste heat for heating (or cooling via a heat exchange). The heat is distributed to customers through a highly insulated pipe, often known as a heat main. CHP plants improve the overall efficiency of energy conversion to around 85%.

10.28 A conventional CHP system uses gas to drive the internal combustion engine. Consequently, it is regarded as a low-carbon, rather than renewable energy source. Nevertheless, due to its greater efficiency, a CHP system can make significant savings in CO2 emissions compared to conventionally generated electricity. CHP schemes can also burn renewable fuels, such as biomass or waste. The former are virtually carbon neutral because the amount of CO2 released upon conversion to energy is equivalent to the amount that is absorbed by the growing plant or tree in its lifetime.

10.29 CHP is applicable on a variety of scales from district to individual buildings (micro-CHP) but is most viable when there is a relatively even

and constant demand for energy. For this reason area-wide schemes that cover a range of uses and include a base-load demand (such as a swimming pool or refrigeration facility) to offset seasonal fluctuations, are most suitable.

Wind

10.30 Wind turbines convert the kinetic energy from the wind into mechanical energy which is then used to drive a generator that converts this energy into electricity. Small scale wind turbines are particularly suited to off grid, mobile and combined wind and PV applications. A combination of PV/wind power is effective because wind power availability is highest in winter when available solar power is at its lowest and vice versa.

Solar Photovoltaic

10.31 Solar photovoltaic (PV) panels are semi-conductor panels that convert light directly into electricity. This is DC power which is normally passed through an inverter and converted into AC power which can be used to power the normal range of domestic appliances or be exported to the local electricity network. The amount of power that a PV panel will deliver is proportional to the amount of sunlight that falls upon it.

Hydro

10.32 Power can be extracted by the conversion of water pressure into mechanical shaft power which, in turn, drives a turbine to generate electricity. Power can also be extracted by allowing water to escape, for example, from a storage reservoir or dam through a pipe containing a turbine. The power available is in all cases proportional to the product of flow rate, head and the mechanical power produced by the turbine. The resource available depends upon the available head, i.e. the height through which the water falls (in metres) and flow rates, i.e. the volume of water passing per second (in m^3/sec).

Biomass.

10.33 Biomass is a general term used to describe organic matter and can be derived from a range of sources including forestry operations or coppice, agricultural residue, high yield crops, food waste and some forms of industrial waste. It excludes fossil fuels as although they are from an organic origin, they have been transformed by geological processes into substances such as coal or oil.

10.34 Biomass can be burnt directly to generate heat for hot water production and space heating. Biomass heating is theoretically applicable to any building requiring heat. However, the fuel is bulky and requires a comparatively large storage space so biomass heating is most suited to district heating, lower density or rural developments. Allied to this is the need to avoid transporting the fuel large distances so it is essential that there is an adequate and local supply of appropriate biomass.

10.35 Where plant materials are used for biomass heating, the process can be carbon neutral since the CO2 released is balanced by the amount absorbed by the growing plant through its lifetime.

The Best Standard for all Developments

10.36 To meet the best standard, developments should either include a decentralised energy scheme or connect to an existing decentralised energy scheme. A decentralised energy system produces heat as well as electricity at or near the point of consumption. Decentralised energy schemes cover a range of technologies including high efficiency co-generation or combined heat and power (CHP), on site renewable energy systems and energy recycling systems scale. The systems can serve an individual building, development or wider community.

10.37 The best decentralised schemes use a renewable or low carbon energy source to power a CHP plant which then supplies both electricity and heat to a local community or local employment site. Applicants are encouraged to provide decentralised electricity for a development using wind, solar photovoltaic, hydro or biomass CHP as the energy source. Alternatively, connection to an existing decentralised energy scheme is supported. However the Checklist does recognise that this might not be from a renewable source and therefore includes oil or gas CHP plants.

Further Advice and Guidance

10.38 Further advice and guidance on low carbon energy sources are available from The Renewable Energy Centre: www.therenewableenergycentre.co.uk

Further advice on ways to save energy if you own or manage an **older property** is available from English Heritage: http://www.climatechangeandyourhome.org.uk/live/

Providing Heat from Renewable, Low Carbon or Energy Efficient Sources

The Minimum standard for all developments

10.39 Similar to electricity provision (above) there are no current national requirements for the amount of heat that should be provided to a development from renewable, low carbon sources or energy efficient sources. Consequently, the Sustainability Checklist does not set a minimum target.

10.40 However, the Council is keen to encourage applicants to consider how the residual heat needs of a development might be met from renewable, low carbon or energy efficient sources. As such, the minimum requirement within the Checklist is for all developments to

provide a written statement outlining how various sources of heat provision have been considered. As with electricity provision, consideration should be given to these heat sources early in the design stage of a development, to minimise the impact on development viability.

10.41 Given the range of options, developments should be able to incorporate at least one type of renewable or low carbon technology and therefore reach 'good' standard (set out below) in the Checklist. If no measures are proposed, and the development is therefore not considered to meet the good standard, reasoned justification should be provided within the statement as to why the different heat sources are not feasible.

10.42 Given the national drive towards zero carbon, development viability may not always be considered reasonable justification, particularly since the Dynamic Viability Index will allow the Council to amend contributions for affordable housing and infrastructure, to take account of increasing costs of construction.

The Good Standard for all Developments

10.43 The Council considers that all renewable, low carbon or energy efficient heat sources should be encouraged for all new development. To meet the Good standard within the Checklist, developments should incorporate 1 or more (as many complement each other) of the following renewable, low carbon or energy efficient technologies: oil or gas condensing boilers; ground or air source heat pumps; district heating; CHP; biomass; solar hot water heating and geothermal.

Oil or gas condensing boilers

10.44 Gas and oil condensing boilers work on the principle of recovering as much as possible of the waste heat which is normally wasted from the flue of a conventional (non-condensing) boiler, turning water vapour from the gas/oil back into liquid water or condensate. See also paragraph 10.14.

Ground Source Heat Pumps.

10.45 Ground source heat pumps make use of the natural heat capacity in the soil to provide heating and cooling to buildings. The temperature just 2 metres down into the earth in Britain is roughly constant all year round at 12^0C. This will be warmer than the surface air temperature in winter and cooler in summer. A ground source heat pump harnesses this heat to provide heating or cooling for buildings.

10.46 A typical ground source heat pump system consists of three elements: a ground to water heat exchanger (often called the ground loop or ground coil), a heat pump and a distribution system.

10.47 There are two different types of ground to water heat exchanger. The first comprises of a borehole, where long pipes are driven deep into the ground. The second is a shallower trench system, in which the loop or coil is laid out horizontally. The pipes are filled with a mixture of water and antifreeze which when pumped around the system absorbs the heat from the ground. The captured heat is transferred to a heat pump, which uses a compressor to raise it to a usable higher temperature when heating rather than cooling is required. The compressor is powered by electricity so unless this is sourced renewably, ground source heat pumps should be regarded as a low-carbon energy source. However, they are extremely efficient and so offer good carbon savings; for each unit of electricity consumed, 3-4 units of heat are generated. They work best with under-floor heating systems since these require lower water temperatures than traditional central heating systems.

Air Source Heat Pumps

10.48 An air source heat pump system works by converting the temperature of the outside air into heat for the hot water system in buildings. Air source heat pumps consist of three elements: an external air handling unit, an internal heat pump and a pressurised water tank. The only outside space required is an outside wall. This makes air source heat pump systems ideal for apartments or homes with limited outdoor space. Installation costs are relatively low as no ground works are required.

10.49 Air source heat pump systems are designed to work in combination with other heating systems rather than acting as the sole energy source and buildings must be sufficiently well insulated to maximise results.

District heating

10.50 District heating is the use of a centralised boiler installation to provide heat for a number of buildings. This can use a heat only boiler, or the heat from a combined heat and power (CHP) plant.

Combined Heat & Power (CHP)

10.51 Please refer to paragraphs 10.27 – 10.29

Biomass

10.52 Please refer to paragraphs 10.33 – 10.35

Solar Hot Water Heating

10.53 Solar water heating systems use energy from the sun to supplement conventional water heating systems. They are generally not used for space heating. Domestic solar hot water systems consist of solar panels or collectors which contain fluid, a heat transfer system and a hot water cylinder. The collectors are usually sited on roofs and can be installed as part of the roof finish for new buildings. The optimum

orientation is facing slightly west of due south and at tilt of 30 - 40^0 although a collector set anywhere between east and west and at a tilt of between 10^0 and 60^0 will deliver around 90% of the optimum performance. A heat transfer system uses the collected heat to warm up water during the day. If not used immediately it is then stored it in a well insulated hot water cylinder for later use.

10.54 Most solar systems can furnish between 20-85% of the annual demand for hot water. Conventional heating sources are used to meet the remainder and/or to raise the temperature of the water further.

10.55 Although solar water heating systems tend to require little maintenance, a range of factors need to be considered when fitting to existing buildings. For example, the area of south facing roof, the existing water heating system and whether there is sufficient space for an additional water cylinder if required.

Geothermal

10.56 Geothermal power is energy extracted from the heat stored in the earth. Heat found near to the earth's surface can be used directly to heat buildings and a number of commercial and industrial uses.

The Best Standard for all Developments

10.57 The most efficient way of supplying heat to a development is via a district heating scheme. When a renewable energy source is used to provide heat then the energy supply is not only efficient, but also offers significant carbon emission savings. Since the energy supplied in such a way is used for space heating, solar energy can then be used to supply hot water. The Best Standard recognises the value of these measures by asking applicants to use a biomass CHP plant to provide heat energy to the development via a district heating system in combination with solar hot water.

10.58 Further information:
http://www.dekb.co.uk/home/index.php?option=com_content&view=category&id=82&Itemid=93&lang=en

Waste Management and Resource Efficiency

11.0 Local Context- Waste Management issues in Shropshire

11.1 The effective management of waste is a key issue for Shropshire, which is reflected in Core Strategy Policy CS19: Waste Management Infrastructure. The guidance and requirements within this Part 1 SPD and Checklist directly support Policy CS19.

11.2 Shropshire Council area recycled or composted 50 per cent of household waste in the year April 2009 to March 2010. This is up from 47.6 per cent in 2008/09, and well above the 2009/10 national average for England of 39.3 per cent. It is the first time that the recycling rate for the Shropshire Council area has reached 50 per cent. The figure has now risen every year since 1998/99, when it was just 7.8 per cent.

11.3 In total 77, 359 tonnes of waste produced in the Shropshire Council area in 2009/10 was sent for recycling or composting, an increase of 4,182 tonnes on the previous year. At the same time the amount of household waste being sent to landfill fell by 4 per cent - or 3,211 tonnes – to 77,251 tonnes. The figures also show that only five other counties in the UK now have a higher recycling rate than Shropshire, and that Shropshire is currently the best performing council in the West Midlands.

11.4 Whilst recycling levels for household waste have increased rapidly, much of Shropshire's waste is still being landfilled particularly commercial waste. Out of approximately 1.25 million tonnes of waste generated in Shropshire in 2007/08, approximately 47% is from construction and demolition and a further 40% is generated by commercial and industrial businesses.

11.5 There is now only one small landfill site operating in Shropshire and most waste is sent for disposal in adjacent local authorities, particularly Telford and Wrekin. Legislative and fiscal changes over the next few years will force waste producers, local authorities and the waste industry to divert more waste away from landfill, which will require a different and more industrial network of waste management sites. Shropshire must take responsibility for its waste locally and increasing the level of recycling will help achieve this.

12.0 Standards and Guidance

12.1 The sustainable management of waste is vital for the UK as a major part of our commitment to resource consumption and as part of our battle against climate change. According to figures by DEFRA recycling in the UK already saves the equivalent in greenhouse gas emissions of taking 3.5 million cars off our roads. It is essential that Shropshire manages its waste sustainably by the efficient use of materials and the recycling of waste.

12.2 As part of the Sustainable Design SPD and in line with Core Strategy Policy CS19 (Waste Management Infrastructure), Shropshire Council will require applications for all types of development to include information about the management of waste during construction and for the life of the development as part of the completion of a Sustainability Checklist, consistent with national policy as detailed in PPS10 paragraphs 35-36.

National Policy Guidance

12.3 Defra's 2007 Waste Strategy for England outlines the Governments guidance on the sustainable management of waste in the UK. Defra states that 'disposal of biodegradable waste to landfill results in emissions of methane, a powerful greenhouse gas which adds to global warming (currently about 3% of UK emissions). On the other hand, recycling waste and recovery of energy from it can preserve virgin materials and reduce the use of fossil fuels (so reducing greenhouse gas emissions).' To illustrate the best practice for waste management the Government has adopted a waste hierarchy which sets out a framework for the sustainable management of waste as outlined below:

- **Waste Prevention** - the most effective environmental solution is to prevent the generation of waste in the first case;
- **Preparing for Re-use** - products and materials can be managed in a way which allows them to be used again, for the same or a different purpose;
- **Recycling and Composting** – material resources can often be recovered from waste through recycling and composting;
- **Other recovery** - value can also be recovered from waste using it as a fuel to generate heat and power;
- **Disposal** - only if none of the above offer an appropriate solution should waste be disposed of.

12.4 The National Infrastructure Plan 2010 states that the right waste infrastructure can help deal with waste in accordance with the waste hierarchy, through waste prevention, preparing for reuse, recycling, other recovery, and disposing to landfill only as a last resort. Shropshire council will expect all developments to follow this framework. Consideration of these issues should be incorporated right from the start of the initial design phases of any development, to ensure a holistic approach to waste management.

12.5 National planning guidance on sustainable waste management in the form of Planning Policy Statement 10 (PPS10) 'Planning for Sustainable Waste Management' states that 'Good design and layout in new development can help to secure opportunities for sustainable waste management.'

12.6 PPS1 Supplement 'Planning and Climate Change' states that 'planning authorities should expect new development to provide for sustainable waste management.' National policy encourages applicants to take an integrated approach to waste management in new developments, designing in from the start of the project to ensure adequate provision that is in keeping with the surrounding character of the area.

Material Resource Efficiency

12.7 Construction and demolition waste has traditionally been disposed of at landfill sites. Changes in the waste management licensing regulations and the introduction of the Landfill and Aggregates Taxes have had a significant impact on this waste stream. The Government and construction industry have now set a target for a 50% reduction in construction waste from 2008 levels by 2012 as detailed in the Strategy for Sustainable Construction 2008. The use of reclaimed or recycled construction materials could contribute considerably in diverting waste from landfill.

12.8 Construction and demolition waste in Shropshire is thought to be the largest single waste stream that the county produces, approximately 0.5 million tonnes per annum in 2006, however these are only estimates as there is a limited amount of data available.

12.9 Following the process laid out in the Waste Hierarchy developers should first look to reduce the generation of construction waste. It is important for developers to accurately assess the materials required for the development in order to avoid an excess of materials. As part of the design of new developments the council will require all new developments to be designed to sustainably manage, the quantity and nature of waste generated during construction and during the life of the proposed land use, consistent with national waste management policy and guidance.

Minimum Resource Efficiency Standards for Householder Developments

12.10 The 'Duty of Care' for householders to ensure that any waste removed from their property is managed by a licensed contractor and the promotion of sustainable resource management practices will be highlighted through the inclusion of an informative on decision notices and as part of web-based Council guidance on the need for planning permission.

Minimum Resource Efficiency Standards for Minor Development and Conversions

12.11 Minor developments and conversions must complete and submit a waste assessment checklist (template provided at page 39) at validation stage, to include estimates of the amounts of waste anticipated throughout the development and provide a commitment to the appropriate management of this waste. The amount of waste

should be minimised as far as practicable and sustainable disposal methods should be used for unavoidable waste.

Minimum Resource Efficiency Standards for Major Developments

12.12 Major developments must complete and submit a waste audit statement (template provided at page 37) at validation stage, to include more detailed information about the waste to be produced and measures to be taken to minimise this and reuse or recycle materials. If applicable a Site Waste Management Plan would be required as described below.

12.13 Site waste management plans (SWMP) are a mandatory requirement for construction projects over £300,000 in value and contribute towards meeting BREEAM standards. According to Defra the purpose of SWMP's is:

1. improving materials resource efficiency, by promoting the economic use of construction materials and methods so that waste is minimised and any waste that is produced can be re-used, recycled or recovered in other ways before disposal options are explored; and,

2. reducing fly-tipping, by restricting the opportunities available for the illegal disposal of waste by ensuring compliance with existing legal controls and providing a full audit trail of any waste that is removed from the construction site. Defra also outlines guidance on how to produce SWMP's which can be found in their Non-statutory guidance for site waste management plans, April 2008.

Application of the Minimum Resource Efficiency Standards

12.14 Applicants are advised wherever possible to use appropriate reclaimed or recycled materials during construction in order to aid the diversion of waste from landfill. An accurate site audit should be undertaken prior to commencement to ascertain what if any materials on site could be reclaimed and reused. Often suitable reclaimed materials can come from demolition and if possible waste building materials created during a development should be reused and recycled for future developments. This could be either crushed and used as infill or used as architectural salvage within the new development, which also encourages the integration of the new development with its surroundings by using materials that are in keeping with the area. The Waste Resources Action Programme (WRAP) has produced guidance and tools to assist developers seeking to incorporate materials with recycled content into construction projects. Further details can be found at www.wrap.org.uk.

Good and Best Resource Efficiency Standards for Major Developments

12.15 Whilst the minimum standards are required for all new developments applicants are encouraged to meet good and best standards wherever possible. Proposals to apply the relevant elements of sustainable construction frameworks such as the 'Code for Sustainable Homes'

and BREEAM could be used to corroborate higher performance. The good standard for major development would require the application of the BRE SMARTWaste tool (http://www.smartwaste.co.uk/) and provision of targets for the reduction of three construction waste streams.

12.16 Best standards for major developments would require the above standards to be met, plus putting procedures in place to divert at least three construction waste streams away from landfill.

Further Information

12.17 The Construction Industry Research Information (CIRIA) has published a number of best practice and guidance documents on minimising construction waste. A list of these can be viewed on the CIRIA website: www.ciria.org/cwr/projects_ciria.htm. Other sources of information include 'Planning for Resource Sustainable Communities: Waste Management and Infrastructure – Code of Practice', published by the Institute of Civil Engineers Sustainable Construction Strategy 2008 by BERR and 'Demolition Protocol' published by the ICE.

Waste Management in New Developments

12.18 The Government have put forward a target to reduce the amount of household waste not re-used, recycled or composted from over 22.2 million tonnes in 2000 by 45% to 12.2 million, equivalent to a reduction of 50% per person (from 450 kg per person in 2000 to 225 kg in 2020). Defra's Waste Strategy 2007 put forward expectations to achieve a reduction in commercial and industrial waste being sent to landfill by 20% by 2010 compared to 2004 levels.

12.19 Residents of Shropshire recycled or composted 50 per cent of household waste in the year April 2009 to March 2010, rising from 47.6 per cent in 2008/09. These figures are above the 2009/10 national average for England of 39.3 per cent. Whilst Shropshire is currently achieving national targets it is important that we endeavour to reduce our waste going to landfill further. A major contributor towards this can be through encouraging the recycling of waste in new developments. Although these figures reflect positively on Shropshire there is still a long way to go in tackling waste management in the county, particularly through non municipal waste streams.

Minimum Waste Management Standards for Residential Development

12.20 As part of completion of the waste assessment checklist (see page 39) or detailed waste audit statement (see page 37) required above, developers should commit to the provision of adequate space to safely and securely store waste collection and recycling receptacles in all new developments, consistent with local guidance as available in Shropshire Council's Draft Guidance for Architects and Developers.

Minimum Waste Management Standards for Non-Residential Development

12.21 In order to divert the flow of waste from landfill, the Council will expect all new non domestic developments to incorporate adequate waste recycling facilities on site. As part of completion of the waste assessment checklist or detailed waste audit statement required above, developers of non domestic development should commit to the provision of enough space to facilitate adequate separation of at least one stream of recyclable materials and residual waste, consistent with national policy as detailed in PPS10 paragraphs 35-36.

Application of the Minimum Waste Management Standards

12.22 Developers must consider how to tackle the issue of waste as an early part of the design process. Safe and convenient access routes for waste collection services must be provided as well as safe access for householders, including disabled people, to present waste and recyclable materials for collection.

Good and Best Waste Management Standards

12.23 Whilst the above standards are a requirement for all new developments, to meet good standards, the relevant waste assessment checklist or detailed waste audit statement for residential development must include a commitment to provide secure bin stores. These should be enclosed where possible and constructed using suitable materials with adequate screening, in order to prevent the spread of waste, odour and noise.

12.24 In order to meet best standards the relevant waste assessment checklist or detailed waste audit statement for residential development must include a commitment to meet all of the above standards and also contribute to the provision of local community composting. Large housing developments achieving a high level of sustainability should include provision of adequate space for composting facilities and include secure bin storage areas providing adequate storage space for recyclables and residual waste as identified by Council's Waste Management staff provided in a location accessible to waste collection services.

12.25 To meet good standards non residential developments the relevant waste assessment checklist or detailed waste audit statement will be required to include a commitment to the integration of sufficient space to allow the separation of at least two streams of recyclable materials and residual waste.

12.26 Best standards for non residential development will require the relevant waste assessment checklist or detailed waste audit statement to include a commitment to the integration of sufficient storage space to support source separation of multiple streams of recyclable materials and residual waste. Non residential development could include space

to incorporate a compactor to facilitate the efficient use of space for waste management.

Further Information

12.27 Further information on the above standards and guidance can be found in The Code for Sustainable Homes/BREEAM Standards, Defra's Waste Strategy for England 2007, current Building Regulations and the National Infrastructure Plan 2010.

Figure 1 – Waste Audit Statement Template

Construction and Demolition Phase	
1. Has the development been designed to minimise waste production?	
2. What are the amounts of each type of demolition waste? (tonnes) (where relevant)	
3. What is the amount of construction waste? (including volume of packaging)[1] (tonnes)	
4. What provision has been made for on-site re-use of materials wherever possible, including the re-use of demolition waste, where possible in foundations, access roads and paths?	
5. Have any necessary consents required from the Environment Agency or Local Authority been sought for the management of wastes on site?	
6. Has suitable provision been made for dealing with hazardous waste[2] arising on site (where relevant)?	
7. What provision has been made for separating waste materials on site to assist their re-use or recycling?	
8. What provision has been made to minimise the amount of new materials being used?	
9. What measures have been put in place to reduce over ordering and hence keep waste to a minimum?	
10. Have products or materials with recycled content been specified and used?	
11. Explain why, how and where waste which must be taken off site is to be dealt with.	
12. Explain how site staff will be made aware of good waste management practice.	
13. What measures have been put in place to ensure that materials will not be transported further than necessary?	

[1] A standard figure of 11.25 tonnes of construction waste generated per dwelling is quoted in *Environmental Effects of Increasing Housing Supply in the UK Appendix H* Entec UK Ltd, Hodgkinson and Eftec for Department of Environment, Food and Rural Affairs (DEFRA) April 2004

[2] Hazardous Waste - Certain wastes are classified as **hazardous** - a very broad term for a wide range of substances that present different levels of risk. Some present a serious and immediate threat to the population and the environment, for example those which are toxic, could cause cancer or infectious disease. Others, such as fluorescent tubes or cathode ray tubes in televisions, pose little immediate threat but may cause long term damage over a period of time. The list of hazardous wastes is defined in the European Waste Catalogue. For further information contact the Environment Agency.

The DTI Voluntary Code of Practice – Site Waste Management Plans can be downloaded here
http://www.dti.gov.uk/construction/sustain/site_waste_management.pdf

The Site Waste Management Plan Checklist can be downloaded here
http://www.dti.gov.uk/construction/sustain/SWMPchecklist.doc

The Site Waste Management Plan Data sheet can be downloaded here
http://www.dti.gov.uk/construction/sustain/SWMPdatasheet.doc

Operation of New Development	
What advice has been sought / received from the Council's Waste Management staff on local collection arrangements and requirements?	
What space has been provided for recycling boxes within the building?	
What storage space been provided for bins outside the building?	
What segregated garden space been provided for composting?	
What space has been set aside for communal waste storage facilities (where appropriate)?	
What recycling boxes / composting bins have been provided as part of the development?	
How has the development been designed to allow for convenient and safe access for collection vehicles?	
How does the development provide for or contribute towards centralised facilities such as "bring sites" (where appropriate)?	
What provision has been made to raise awareness of waste minimisation amongst potential occupiers/residents? (Use communication methods appropriate to the ethnic diversity of the potential residents/occupiers).	
What consideration has been given to the needs of residents who have reduced mobility?	

Monitoring the Waste Audit	
Set out a method for auditing the waste to be managed	
Set out, where appropriate, proposals for reporting on the waste audit at appropriate intervals	

Figure 2 – Waste Checklist

Demolition / Groundworks Phase	☒☑
1. Does the developer, main contractor or the relevant sub-contractor have an accredited or corporate Environmental Management System (such as ISO 14001) or a site waste management policy?	☐
2. Please estimate (tonnes) the quantities of inert, non-hazardous and hazardous wastes which are expected to be generated: • Inert waste; ---------- • Non-Hazardous waste; ---------- • Hazardous waste. ----------	
3. What proportion of these wastes (as a percentage) is expected to be reused on site?	---------
4. Waste producers have a legal 'Duty of Care' for any waste generated at the site. Are you satisfied that any contaminated material will be managed by sub-contractors who are appropriately licensed to transport this material?	☐
5. Will the geographical destination and fate of this waste be recorded? If so, please provide this information in due course.	☐
Construction Phase	
6. Does the main contractor and any sub-contractors have site waste management policies which will help to maximise the on site separation of materials to assist recycling and to minimise landfill costs?	☐
7. Will records be kept of the geographical destination and fate of construction waste? If so, would they be prepared to provide this information to you in due course?	☐
Operational Phase	
8. Does the design of the proposed development provide enough space for the storage of sufficient waste collection containers to support the separation of recyclable materials? (see guidance on potential requirements in Appendix B).	☐
9. Does the layout of the development support access for refuse collection vehicles and kerbside access to collection bins for waste collection staff?	☐
10. In the case of housing and retail developments, have potential opportunities to supplement local bring bank facilities as a contribution to supporting local recycling been explored with the Council's Waste Management staff?	☐

Appendix 1;
Part 1 Sustainability Checklist

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
SECTION 1: WATER MANAGEMENT						
Water Conservation and Efficiency						
	✓	✓	✓	**1.1 Residential development** What will be the average water consumption for the development (per person per day)?	**Best** 80 l/h/d	
					Good 90 l/p/d	
					Minimum 105 l/p/d *(Code for Sustainable Homes Levels 3 and 4)*	
	✓	✓	✓	**Non Residential Development** What will be the performance standards of the water devices within the development?	**Best** Best Practice AECB Water Standard	
					Minimum Good Practice AECB Water Standards *(AECB Water Standards)*	
Foul Drainage						
✓ (where foul drainage is required for the development)	✓	✓	✓	**1.2 Residential and non residential development** Has a Foul Drainage Assessment been submitted and does it demonstrate that foul drainage from the	**Best** The development will be connected to the public sewer network. For major development proposals or development in areas of infrastructure capacity constraint, as identified in Policy CS18, evidence is provided from the relevant water company	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				development will be managed in a sustainable way?	that there is adequate wastewater infrastructure in place, or, where additional infrastructure is planned, the timing of that provision means that improvements will be in place prior to the completion of the development.	
					Good The Foul Drainage Assessment indicates that it is not feasible to serve the new development through a connection to the public sewer. The new development will therefore be served by a package treatment plant (with secondary or tertiary treatment) discharging to a watercourse or soakaway, depending on the nature of the development; unless the development warrants a septic tank (which has an appropriate form of secondary treatment) or a package treatment plant e.g. where the development type gives rise to intermittent flows such as holiday lets. Additionally isolated single dwellings may be served by a septic tank and soakaway. The design and management arrangements for the above options are included within the drainage assessment and have been signed off by the applicant.	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
					Minimum The Foul Drainage Assessment indicates that it is not feasible to serve the new development through a connection to the public sewer. Justification is provided to demonstrate that the other more sustainable options have been exhausted and the new development will therefore be served by a cesspool, the design and management of which is included within the drainage assessment and signed of by the applicant. *(Part H of Building Regulations, DETR Circular 03/99 and Shropshire Council validation requirement)*	
Flood Risk Management						
✓ (where the proposed footprint is greater than 250m2 – this applies to residential and non residential extensions in line with PPS25 footnote 7)	✓ (where the proposal involves the creation of additional dwelling units subject to a full application, in line with PPS25 footnote 7 – ie not a change of use)	✓	✓	**1.3 Residential and non residential development** Is the development sited in accordance with the sequential test in PPS25? **A-** Site is within Zone 1. For sites over 1 ha a Flood Risk Assessments has been produced as pert PPS25, vulnerability to flooding from all sources considered in particular the impact of hard surfaces and surface runoff **B-** Site is within Zone 2.	**Best** As per A	
					Good As per B	
					Minimum As per C or D *(Planning Policy Statement 25)*	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				There are no suitable, reasonably available sites in Zone 1. No 'highly vulnerable' uses are proposed. A Flood Risk Assessment has been produced as per PPS25, vulnerability to flooding from all sources considered. **C-** Site is within zone 3a. There are no suitable, reasonably available sites in Zone 1 or 2. Where appropriate the Exception Test is passed. A Flood Risk Assessment has been produced as per PPS25, vulnerability to flooding from all sources considered. **D-** Site is within zone 2 and the development proposal includes 'highly vulnerable' uses. There are no suitable, reasonably available, zone 1 sites. The proposed development passes the Exception Test in PPS25.		
			✓	Is the development designed designed to be 'safe' in accordance with PPS25, the	**Best**	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				Shropshire Council SFRAs and emerging Water Management SPD? **A-** The application demonstrates that a safe flood free route for people and vehicles is available at or above the 1% plus climate change flood level **B-** A safe flood free route for people, at or above the 1% plus climate change flood level, including confirmation that the Council's Emergency Planners are satisfied that the residual risk for vehicles can be satisfactorily managed	As per A	
					Minimum As per B	
	✓	✓		Is the development 'safe' in accordance with PPS25, the Shropshire SFRAs and the emerging Water Management SPD? **A-** the application demonstrates that a safe, flood free route for people and vehicles is available at or above the 1% plus climate change flood level. **B-** A safe flood free route for	**Best** As per A	
					Good As per B	
					Minimum As per C	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				people, at or above the 1% plus climate change flood level, including confirmation that the Council's Emergency Planners are satisfied that the residual risk for vehicles can be satisfactorily managed **C-** A route for people is identified where the flood hazard (in terms of depth and velocity of flooding) is low and does not cause a risk to people and that any residual risk for vehicles can be satisfactorily managed, based on confirmation from the Council's Emergency Planners.		
Surface Water Drainage						
	✓	✓		**1.4 Residential and non residential development** What measures are there to control and manage surface water runoff from the site, in accordance with the Council's Interim Guidance on Surface Water Management?	**Minimum** The development is located within a surface water risk area and a Surface Water Management Plan has been completed in accordance with Appendix C of the Interim Guidance on Surface Water Drainage. For development not located within a surface water risk area, a Surface Water Management Statement has been completed, in accordance with Appendix D	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
					of the Interim Guidance on Surface Water Management. *(Planning Policy Statement 25 and Flood and Water Management Act 2010)*	
			✓	**Residential and non residential development** What measures are there to control and manage surface water runoff from the site, in accordance with the Council's Interim Guidance on Surface Water Management?	**Minimum** A Surface Water Management Plan has been completed as per Appendix C of the Interim Guidance on Surface Water Drainage *(Planning Policy Statement 25 and Flood and Water Management Act 2010)*	
✓				**Residential and non residential development** What measures are there to control and manage surface water runoff from the site, in accordance with the Council's Interim Guidance on Surface Water Management?	**Minimum** Development incorporates source control sustainable drainage techniques, as outlined in Table 7.1 of the Interim Guidance on Surface Water Drainage *(Planning Policy Statement 25 and Flood and Water Management Act 2010)*	
SECTION 2: ENERGY EFFICIENCY AND GENERATION						
Minimising energy demand and maximising energy efficiency						
✓	✓	✓	✓	**1.5 Residential** What steps will the developer take to minimise the energy demand and maximise the energy efficiency of	**Best:** The annual CO2 emission rate of the completed dwelling will be 100% better than the Target Emission Rate (TER) as calculated by the governments Standard Assessment Procedure (SAP) 2009.	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				the development.	**Good** The annual CO2 emission rate of the completed dwelling will be 25% better than the Target Emission Rate (TER) as calculated by the governments Standard Assessment Procedure (SAP) 2009	
					Minimum The applicant has completed the following energy demand and efficiency statement showing how the energy demand for the development will be minimised and energy efficiency maximised	
	✓	✓	✓	**Non residential development** What steps will the developer take to minimise the energy demand and maximise energy efficiency	**Best** The annual CO2 emission rate of the completed building will be 100% better than the Target Emission Rate (TER) as calculated by the Simplified Building Energy Model (SBEM)	
					Good The annual CO2 emission rate of the completed building will be 25% better than the Target Emission Rate (TER) as calculated by the Simplified Building Energy Model (SBEM)	
					Minimum The applicant has completed the following energy demand and efficiency statement showing how the energy demand for the development will be minimised and energy efficiency maximised	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
Energy Demand and Efficiency Statement						
				Yes/No	**If yes please give details. If no, please provide justification**	
Using orientation and solar gain to minimise energy demand						
Will the main elevation of the building(s) be orientated within 30 ^{o} of due south?						
Will the principal living or working spaces be located on the main elevation(s)?						
Will rooms with the lowest occupancy (toilets, storage space etc) be located on the northern side of the building(s)?						
Maximising thermal mass to minimise energy demand						
Will the development be constructed from materials with a high thermal mass (eg brick, stone or concrete)?						
Have the number of external walls been minimised to increase thermal massing?						
Using insulation to minimise energy demand						
Will the walls, roofs and floors be insulated above building regulation requirements?						
Will any internal pipes and water storage tanks be insulated above building regulation requirements?						
Will double or triple window glazing be used? If yes, please state which.						
Maximising efficiency (heating is considered in the Heat Statement)						
Will compact fluorescent light bulbs be fitted internally and externally throughout the development?						
Will “A” rated (A++ for refrigeration) appliances and controls be fitted in the development						

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
Providing electricity from renewable, low carbon and energy efficient sources						
✓	✓	✓	✓	**1.6 Residential and non residential development** To what extent will the development take into account the following types of renewable or low carbon energy sources for electricity: **A:** Oil or gas CHP **B:** Wind **C:** Solar photovoltaic **D:** Hydro **E:** Biomass CHP	**Best** Either provision of a district energy scheme (using any of B-E) or connection to an existing district energy scheme (using any of A –E) to offer wider benefits	
					Good Any one of A – E to serve the development	
					Minimum The applicant has completed the following Electricity Statement showing how the potential for using a renewable, low carbon or energy efficient source for electricity generation has been addressed.	

Electricity Statement (please use additional paper if necessary)

Note: The energy source can be either on- or off-site	**Yes/No**	**If yes, please provide details. If no, please provide justification** NB: Given the national drive towards zero carbon, development viability may not always be considered reasonable justification, for further information please see paragraph 10.43
Will oil or gas CHP be used in the development?		
Will wind power be used to provide electricity for the development?		
Will solar photo-voltaic panels be fitted to each unit in the development?		
Will hydro-power be used to provide electricity for the development?		
Will biomass CHP be used to provide electricity for the development?		

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
Providing heat from renewable, low carbon and energy efficient sources						
✓	✓	✓	✓	**1.7** To what extent will the development take into account the following types of renewable, low carbon or energy efficient energy sources for heating: **A:** Oil or gas condensing boilers **B:** Ground or air source heat pumps **C:** District heating **D:** CHP **E:** Biomass **F:** Solar hot water heating **G:** Geothermal	**Best** C, D, E and F in combination (a biomass CHP district heating system with solar hot water)	
					Good Any 1, or more in combination, of A - G	
					Minimum The applicant has completed the following Heat Statement showing how the potential for using a renewable, low carbon or energy efficient source for heating has been addressed.	

Heat Statement (please use additional paper if necessary)

Note: Where applicable, the energy source can be either on- or off-site	**Yes/No**	**If yes, please provide details. If no, please provide justification** NB: Given the national drive towards zero carbon, development viability may not always be considered reasonable justification, for further information please see paragraph 10.43
Will an oil or gas condensing boiler be fitted in each unit in the development?		
Will ground or air source heat pumps be used to provide heat for the development? If yes please state which.		
Will the development either provide a district heating system or connect to an existing district heating system? If yes, please state which.		
Will heat be provided to the development from a CHP plant?		
Will biomass energy be used to provide heat to the development?		

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
Will geothermal energy be used to provide heat to the development?						
SECTION 3: WASTE MANAGEMENT AND RESOURCE EFFICIENCY						
Material Resource Efficiency						
✓				**1.8**: **Residential and non residential development** Has the development been designed to sustainably manage, the quantity and nature of waste generated during construction and during the life of the proposed land use? *(Core Strategy Policy CS19 and Site Waste Management Plan requirements and PPS10 paras 35-36)*	**Best** Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage.	
					Good Completion and submission of a waste assessment checklist pro-forma with planning application at validation stage.	
					Minimum Highlight legal 'Duty of Care' and promote sustainable waste management for all waste producers, including householders through the inclusion of an informative on decision notices and as part of web-based Council guidance on the need for planning permission.	
	✓	✓		**Residential and non residential development** Has the development been designed to sustainably manage, the quantity and nature of waste generated during construction and during the life of the	**Best** Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage, including commitments to apply the BRE SMARTWaste tool and to set targets for the reduction of three construction waste streams.	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
				proposed land use? *(Core Strategy Policy CS19 and Site Waste Management Plan requirements and PPS10 paras 35-36)*	**Good** Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage.	
					Minimum Completion and submission of a waste assessment checklist with planning application at validation stage. (Completion of a more detailed waste audit statement may be required where the checklist indicates that significant quantities of waste will be generated)	
			✓	**Residential and non residential development** Has the development been designed to sustainably manage, the quantity and nature of waste generated during construction and during the life of the proposed land use? (*Core Strategy Policy CS19 and Site Waste Management Plan requirements and PPS10 paras 35-36)*	**Best** Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage, including commitments to apply the BRE SMARTWaste tool and to set and follow procedures to sort and divert at least three construction waste streams away from landfill.	
					Good Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage including commitments to apply the BRE SMARTWaste tool and set targets for the reduction of three construction waste streams.	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
					Minimum Completion and submission of a detailed waste audit statement (template provided) with planning application at validation stage.	
Waste Management						
	✓	✓	✓	**1.9 Residential Development:** Does the development integrate new waste facilities or space in its design? *(Core Strategy Policy CS19 and PPS10 paras 35-36)*	**Best** As part of completion of the waste assessment checklist or detailed waste audit statement required by 1.8 above, include a commitment to the provision of a local community composting and secure bin store providing adequate storage space for recyclables and residual waste as identified by the Council's Waste Management staff in a location accessible to waste collection services.	
					Good As part of completion of the waste assessment checklist or detailed waste audit statement required by 1.8 above, include a commitment to the provision of a secure bin store providing adequate storage space for recyclables and residual waste as identified by the Council's Waste Management staff in a location accessible to waste collection services.	
					Minimum As part of completion of the waste assessment checklist or detailed waste	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
					audit statement required by 1.8 above, include a commitment to the provision of adequate storage space for recyclables and residual waste as identified by the Council's Waste Management staff.	
	✓	✓	✓	**Non Residential Development:** Does the development integrate new waste facilities or space in its design? *(Core Strategy Policy CS19 and PPS10 paras 35-36)*	**Best** As part of completion of the waste assessment checklist or detailed waste audit statement required by 1.8 above, include a commitment to the integration of sustainable resource management principles from an early stage in the design process, together with the integration of sufficient storage space to support source separation of multiple streams of recyclable materials and residual waste in a location accessible to waste collection services.	
					Good As part of completion of the waste assessment checklist or detailed waste audit statement required by 1.8 above, include a commitment to the provision of sufficient storage space to support source separation of at least two streams of recyclable materials and residual waste provided in a location accessible to waste collection services.	
					Minimum As part of completion of the waste assessment checklist or detailed waste audit statement required by 1.8 above, include a commitment to the provision of	

House-holder development	Conversions	Minor development	Major development	Question	Requirement	Requirement met? (tick 1 only)
					sufficient storage space to support source separation of at least one stream of recyclable materials and residual waste provided in a location accessible to waste collection services.	

Appendix 2
Policy Context

National Guidance

Planning Policy Statement 1: Delivering Sustainable Development
This document sets out key principles which should be applied to ensure that development plans and decisions taken on planning applications contribute to the delivery of sustainable development.
http://www.communities.gov.uk/documents/planningandbuilding/pdf/planningpolicystatement1.pdf

Planning Policy Statement: Planning and Climate Change- Supplement to Planning Policy Statement 1
This document supplements PPS1 by setting out how planning should contribute to reducing emissions and establishing climate change and take into account the unavoidable consequences.
http://www.communities.gov.uk/documents/planningandbuilding/pdf/ppsclimatechange.pdf

Consultation on a Planning Policy Statement: Planning for a Low Carbon Future in a Changing Climate
This consultation document seeks to combine and update existing planning policy on climate change and renewable energy.
http://www.communities.gov.uk/publications/planningandbuilding/ppsclimateconsultation

Planning Policy Statement 10: Planning for Sustainable Waste Management
This document sets out key principles for ensuring development contributes to sustainable waste management.
http://www.communities.gov.uk/documents/planningandbuilding/pdf/147411.pdf

Planning Policy Statement 22: Renewable Energy
This document sets out key principles for encouraging and facilitating renewable energy developments.
http://www.communities.gov.uk/documents/planningandbuilding/pdf/147444.pdf

Planning Policy Statement 25: Development and Flood Risk
This documents sets out key principles for flood risk management to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding and to direct development away from areas at highest risk.

http://www.communities.gov.uk/documents/planningandbuilding/pdf/planningpolicystatement25.pdf

The Flood and Water Management Act (2010)
Aims to improve the way flood risk is managed.
http://www.legislation.gov.uk/ukpga/2010/29

AECB Water Standards
Developed by the Sustainable Building Association, the water standards aim to prioritise reductions in the kind of water use that are most environmentally damaging.
http://www.aecb.net/standards_and_guidance.php

DETR Circular 03/99- Planning requirement in respect of the Use of Non-Mains Sewerage incorporating Septic Tanks in New Development
The circular provides advice on the exercise of planning controls on non-mains sewerage and associated sewerage disposal aspects of future development.
http://www.communities.gov.uk/publications/planningandbuilding/circularplanningrequirement

Sustainable New Homes- The Road to Zero Carbon
This document provides guidance on aligning the Code for Sustainable Homes with the Governments Zero Carbon Policy
http://www.communities.gov.uk/documents/planningandbuilding/pdf/1415525.pdf

Waste Strategy for England 2007
This documents sets out the vision for sustainable waste management.
http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf

Building Regulations
Building Regulations are a set of design and construction standards which apply to most new buildings and many alterations to existing buildings.
http://www.communities.gov.uk/planningandbuilding/buildingregulations/

Local Evidence

Shropshire Core Strategy
The Core Strategy forms part of the Local Development Framework for Shropshire. It sets out the strategic planning policy for the area, including a spatial vision and objectives.
http://www.shropshire.gov.uk/planning.nsf/open/5ADFD31357B9398D80257545004C0888

Waste Technical Background Paper
The paper provides background information on planning for waste in Shropshire.
http://static.shropshire.gov.uk/publications/PlanningLDF/Shrops-EV110-waste-technical-background-paper-2010.pdf

Shropshire Water Cycle Study
Assesses the impact of development on water resources, water quality and flood risk, to ensure that future development will not have a detrimental impact on the environment and that the necessary water infrastructure can be provided in a timely manner to support growth.
http://static.shropshire.gov.uk/publications/PlanningLDF/Shrops-EV96b-shropshire-outline-water-cycle-study-report-2010.pdf

Strategic Flood Risk Assessments (Level 1 and 2)
The Strategic Flood Risk Assessments identify those parts of Shropshire that are most at risk of flooding.
http://www.shropshire.gov.uk/environmentmaintenance.nsf/open/842F6234CCD03DD98025772E0051FC88

Shropshire Councils Climate Change Strategy
The strategy identifies actions that need to be taken by the Council and the community in Shropshire to achieve emission levels within acceptable limits in an appropriate timescale. The strategy is currently under review and will be updated shortly.
http://www.shropshire.gov.uk/sustainability.nsf/open/BFD6EDBDAB7263F48025750E0046E6E9

Shropshire's Community Strategy 2010-2020
The Strategy sets out the collective vision for Shropshire and the action that needs to be taken to achieve that vision**.**
http://www.2shrop.net/live/images/cme_resources/Users/Shropshire%20Partnership/Shropshire%20Partnership/Community%20Strategy/Shropshire-s-Community-Strategy-2010-2020.pdf

Shropshire Councils Validation Requirements
The validation requirements set out what information needs to be submitted with a planning application, so that it can be dealt with properly and efficiently.
http://www.shropshire.gov.uk/planning.nsf/viewAttachments/SDRY-8A8ED4/%24file/application-submission-requirements.pdf