



# **Sustainable Design Guide**

Supplementary Planning Guidance  
October 2010



## Planning in the Cairngorms National Park

Planning in the Cairngorms National Park is unique. It involves the Cairngorms National Park Authority (CNPA) working alongside the five local authorities which operate in the Park – Aberdeenshire, Angus, Highland, Moray and Perth & Kinross.

Due to the expansion of the National Park in October 2010, to take in part of Perth & Kinross, different planning policies apply there.

The following paragraphs set out what planning policies apply in the National Park, and how planning applications will be dealt with.

### Planning Policies

The Cairngorms National Park Local Plan, and this Supplementary Planning Guidance (SPG), covers the Aberdeenshire, Angus, Highland and Moray parts of the National Park only. This SPG sets out detailed advice to help you meet the requirements of the policies in the Cairngorms National Park Local Plan. It is recommended that it is read in conjunction with the policies in the Local Plan and other relevant SPG.

The Cairngorms National Park Local Plan and this SPG does not cover the Perth & Kinross area of the Park. The Perth & Kinross Highland Area Local Plan, or the Perth & Kinross Eastern Area Local Plan, and any associated SPG, apply. Please see [www.pkc.gov.uk](http://www.pkc.gov.uk) for further information.

### Planning applications

All planning applications submitted within the Cairngorms National Park must comply with the relevant Local Plan and SPG (see paragraphs above on planning policies for details).

Planning applications should be submitted to the relevant local authority in the normal manner. The local authority ensures all the necessary information is supplied and registers receipt of the application. The CNPA is informed by the local authority and has 21 days to decide whether to call-in the application. Only applications which are of general significance to the aims of the Park are called-in. The CNPA determines called-in applications. In instances where planning applications are not called-in, the local authority will determine the application.

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## Introduction

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## I.1

### **Sustainable design – a special quality of the Cairngorms National Park**

The Cairngorms National Park is a unique place in which to live, work and visit. Over the centuries, the special character of the Park has been, and continues to be, shaped by the interactions between nature and man.

We all want to see this distinctive character and the innate special qualities of the Park conserved and enhanced, which is why this guidance is so important.

So how can we all help to maintain what is so special about this place and make it even better in the future?

This guidance will help you to consider all the issues you need to look at when planning any development within the Cairngorms National Park. It will help to ensure that all future development in the National Park will be well designed, sustainable and wedded to its location in this special place. A sustainable approach to building design is not new. This guidance has at its core the traditional approach to design which aims to deliver buildings which provide a resource-efficient, comfortable and flexible living environment in what can, at times, be a very hostile and changeable climate. This approach

has historically resulted in the locally distinctive buildings found across the Park, which are all inextricably linked to their own landscape setting.

Added to this – which can also be seen as a traditional approach to the design of development – are the ever increasing range of more modern and sustainable construction techniques and materials, which also have a place in the National Park.

Whilst we want to see the special qualities of the National Park conserved and enhanced, this does not mean we want to see only traditional designs for new buildings. Innovation in both design and use of materials, in a way which is in keeping with its setting in the National Park, is encouraged. The importance of this approach has been highlighted with the adoption by the Scottish Government of the Climate Change (Scotland) Act 2009 and its delivery plan. This sets targets for reducing carbon emissions in Scotland. As buildings have an impact on overall carbon emissions, it is imperative that a sustainable design approach to new development – one which seeks to reduce emissions from all buildings – is adopted and implemented now.

Indicates image

## 1.2

### Planning policy

This guidance has been produced to accompany the policies relating to the design of all new developments as set out in the Cairngorms National Park Local Plan.

Policy 16 sets out the main requirements of this approach. However, this policy should be read in conjunction with all the other policies in the Local Plan.

### Policy 16 Design Standards for Development

Design of all development will seek, where appropriate to:

- (a) minimise the effect of the development on climate change;
- (b) reflect and reinforce the traditional pattern and character of the surrounding area, and reinforce the local vernacular and local distinctiveness, whilst encouraging innovation in design and use of materials;
- (c) use materials and landscaping that will complement the setting of the development;
- (d) demonstrate sustainable use of resources (including the minimisation of energy, waste and water usage) throughout construction, within the future maintenance arrangements, and for any decommissioning which may be necessary;
- (e) enable the storage, segregation and collection of recyclable materials and make provision for composting;
- (f) reduce the need to travel;
- (g) protect the amenity enjoyed by neighbouring properties, and all proposals will be designed to help create environments that can be enjoyed by everyone;
- (h) accord with the design standards and palette of materials set out in the Sustainable Design Guide and any other supplementary planning guidance produced relating to design for new developments.

All proposals must be accompanied by a Sustainable Design Statement which sets out how the policy requirements have been met.



### 1.3

#### **What is good design in the Cairngorms National Park?**

The answer to this question is important if we are to see good design in the Cairngorms National Park.

Good design should be fit for purpose. It should result in buildings which are well related to their location and are functional, well constructed, accessible, have a long life span and are affordable and sustainable.

We are clear that, in the Cairngorms National Park, good design is sustainable design. You cannot have one without the other. There is no point incorporating all the most up to date sustainable features if the building itself does not fit within its setting. Equally, there is no point designing a beautiful building that relates well to its surroundings, but that is badly insulated and expensive to run. This is not sustainable in the long run and so is not good design.

Good, sustainable design makes sense for the National Park: environmentally, for its landscape and biodiversity; socially, for its communities; and economically, both for local businesses and for the people who will live in the buildings.

### 1.4

#### **Advantages of a sustainable design approach**

This guidance encourages everyone involved in development in the Cairngorms National Park to adopt a more sustainable approach to design, and this should help to deliver individual buildings and larger scale developments which:

- are sensitively located, reflect existing development pattern and setting, and respect the natural and cultural landscape of the Park;
- reflect traditional materials and workmanship and take on board innovation, contemporary design and the emergence of modern methods of construction;
- maximise efficient use of natural resources;
- minimise negative environmental impacts; and
- provide the foundation stone for sustainable communities.

## 1.5

### Structure of this guidance

High quality and sustainable design is essential to help minimise long-term damage to the natural environment and to support the social and economic fabric of the Park. Sustainable design can also make sound business sense for developers and can have financial benefits to occupiers and users of buildings. For example, sensible siting and passive design measures, to make the most of natural daylight, add little or nothing to the capital cost of a scheme, but will help to reduce the cost of heating and lighting the building.

Infrastructure for generating renewable energy will add to the capital cost of a scheme. However future costs and availability of fossil fuels are an increasing concern and may make the local generation of energy an increasingly attractive option.

Sustainable design also supports the economic aims of the Cairngorms National Park by supporting local businesses involved in the supply of sustainable construction materials. This includes materials, such as timber, which not only support the forestry and sawmill industries, but also help to ensure the retention of local skills in the use of such materials.

This guidance is based on the four key sustainable design principles of:

1. Conserving and enhancing the character of the Cairngorms National Park;
2. Using resources efficiently;
3. Minimising the environmental impact of development; and
4. Enhancing the viability of the Cairngorms National Park communities.

These principles are a way of relating issues, that must be considered when undertaking any new development in the National Park, to the aims that underpin the National Park itself, as set out in the National Parks (Scotland) Act 2000.

1. To conserve and enhance the natural and cultural heritage of the area;
2. To promote sustainable use of the natural resources of the area;
3. To promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public;
4. To promote sustainable economic and social development of the area's communities.

These four aims must be delivered collectively, and this guidance seeks to set out, in simple terms, what needs to be done to achieve this.

The sustainable design principles are explored in further detail in the following pages. An overview of each sustainable design principle is provided, with a summary of the key design issues which should be considered. This is followed by more detailed guidance on good practice, and sources of further information.

The key design issues are summarised in the Sustainable Design Statement checklist in section 3 of this guidance (see p 43).

## I.6

### Sustainable Design Statements

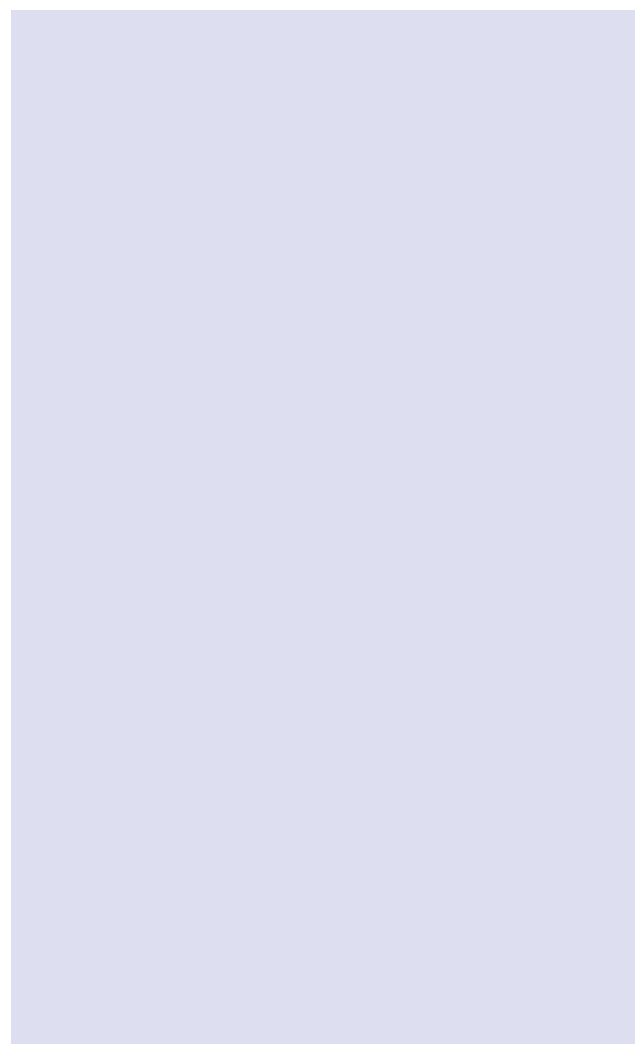
Sustainable Design Statements are an important means of demonstrating the quality of a design and how it will relate to the existing natural and cultural context.

The Sustainable Design Statement checklist should be used as the basis for producing the Sustainable Design Statement, which needs to be submitted to the planning authority along with all development proposals. Applicants are expected to achieve the minimum standards set out in the checklist, however the size and scale of the development will affect the level at which each issue is considered, and therefore the amount of information to be included in the Statement.

Applicants should use their Sustainable Design Statement to demonstrate how these standards will be achieved by the proposed development. The statement must also demonstrate how proposals will be implemented. The information contained in the statement must be accurate and should be able to be substantiated.

If you have any questions about any development in the Cairngorms National Park – whether you need planning permission, or what should be included in your sustainable design statement – please don't hesitate to contact your local planning office and speak to the relevant planning staff as soon as possible, and certainly before submitting a planning application and associated Sustainable Design Statement.

Sustainable design is as much about choosing the right site and architectural style as it is about the choice of environmentally-friendly materials and construction techniques. There is a balance to be struck between all the issues identified in



the checklist; the detail of this balance is very often site specific. These balances have resulted in the distinctive built heritage of the Park and the differences between individual areas which is evident today.

Applicants will need to demonstrate in their Sustainable Design Statements that they have;

- carefully considered the issues in the checklist;
- identified how they apply to their specific design proposals; and
- have arrived at a sustainable design solution which is appropriate to the proposed location, and which meets the minimum standards.

Applicants are encouraged to go beyond the minimum standards. As Building Standards are improved, they will be increasingly required to do so especially, for example, in terms of resource efficiency in the use of energy and water. Working towards best practice, rather than minimum standards now, may well provide architects and developers with a competitive advantage in the future.

There are examples of sustainable design already evident in the Park, including individual buildings and social housing developments. These developments are welcomed and there is the intention to recognise those working towards best practice in sustainable design through Design Awards.

## Sustainable Design Statement checklist summary

Issues to be covered in Sustainable Design Statement		See section
<b>Conserving and enhancing the character of the Cairngorms National Park</b>		
<b>Buildings and their settings</b> <ul style="list-style-type: none"> <li>• Development layout, scale, proportion, materials, construction and finishing</li> <li>• Landscaping</li> <li>• Cultural heritage</li> </ul>	2.1(a)	Page 16
<b>Materials and traditional skills</b> <ul style="list-style-type: none"> <li>• Sustainable materials</li> </ul>	2.1(b)	Page 19
<b>The natural environment</b> <ul style="list-style-type: none"> <li>• Natural heritage</li> <li>• Enhancing wildlife</li> </ul>	2.1(c)	Page 22
<b>Using resources efficiently</b>		
<b>Energy efficiency, generation and renewables</b> <ul style="list-style-type: none"> <li>• Energy efficiency</li> <li>• Renewable energy</li> </ul>	2.2(a)	Page 26
<b>Water use and wastewater; runoff and flooding</b> <ul style="list-style-type: none"> <li>• Foul wastewater treatment</li> <li>• Flooding</li> <li>• Surface water runoff</li> <li>• Water conservation</li> </ul>	2.2(b)	Page 29
<b>Waste management</b> <ul style="list-style-type: none"> <li>• Waste and recycling</li> </ul>	2.2(c)	Page 31
<b>Efficient use of development land</b> <ul style="list-style-type: none"> <li>• Efficient use of land and existing buildings</li> </ul>	2.2(d)	Page 32
<b>Minimising the environmental impact of development</b>		
<b>Air, light and noise pollution</b> <ul style="list-style-type: none"> <li>• Site management</li> </ul>	2.3(a)	Page 35
<b>Travel and transport</b> <ul style="list-style-type: none"> <li>• Transport</li> <li>• Pedestrians and cyclists</li> </ul>	2.3(b)	Page 36
<b>Enhancing the viability of the Cairngorms National Park communities</b>		
<b>Flexibility of design</b> <ul style="list-style-type: none"> <li>• Design for flexibility</li> <li>• Private amenity space</li> </ul>	2.4(a)	Page 39
<b>Community facilities</b> <ul style="list-style-type: none"> <li>• Accessibility of community facilities</li> </ul>	2.4(b)	Page 40
<b>Adapting to climate change</b>	2.4(c)	Page 41

# 2

## Sustainable design principles

- 2.1 Conserving and enhancing the character of the Cairngorms National Park
- 2.2 Using resources efficiently
- 2.3 Minimising the environmental impact of development
- 2.4 Enhancing the viability of Cairngorms National Park communities

## 2.1

### Conserving and enhancing the character of the Cairngorms National Park

Future development in the Park should be sensitively located, reflect existing development pattern and setting, and respect and enhance the natural and cultural heritage of the Park

It should reflect traditional materials and workmanship and take on board innovation, contemporary design and the emergence of modern methods of construction.

The relationship between landscape and built environment creates the different and distinctive settlements which contribute to the overall character of the Park. In a largely rural landscape even the smallest of developments can make a big impact, often for the wrong reasons, by being at odds with the setting and surrounding buildings

New developments do not need to be copies of past styles to fit into the Cairngorms National Park. However, the imposition of standard off-the-shelf house designs, which are now to be

found throughout the Park (and the country), will increasingly erode the unique characteristics for which the Park is renowned. New development within the Park should therefore be designed with its setting firmly in mind.

Traditional skills, materials and knowledge of the micro-climate, along with an increasingly wide choice of modern sustainable materials and construction techniques, should result in developments which reflect the special qualities of the Park.

Issues to be covered in the Sustainable Design Statement	See section
<b>Buildings and their settings</b> <ul style="list-style-type: none"> <li>• Development layout, scale, proportion, materials, construction and finishing</li> <li>• Landscaping</li> <li>• Cultural heritage</li> </ul>	2.1(a)
<b>Materials and traditional skills</b> <ul style="list-style-type: none"> <li>• Sustainable materials</li> </ul>	2.1(b)
<b>The natural environment</b> <ul style="list-style-type: none"> <li>• Natural heritage</li> <li>• Enhancing wildlife</li> </ul>	2.1(c)

## 2.1(a)

### Buildings and their settings

#### The historic legacy

The history of human settlement in the Cairngorms National Park has left a legacy scattered across the landscape. The building blocks of physical landforms, mountains, straths and lochs, geology, climate and biodiversity have been added to by human influences over thousands of years in the form of farmland, buildings and settlements, roads, hedges and walls. The landscape continues to evolve and reflects changing values and activities and how these interact with the physical environment.

This natural and cultural heritage is fundamental to the National Park's identity and to the economy which it supports. This economy is underpinned by the traditional estate management practices of agriculture, forestry, fieldsports and tourism.

What we see now in the National Park has been shaped by the natural environment; the distinctive patterns of settlements and communication links

have historically reflected the opportunities and constraints presented by the natural environment. Traditionally buildings have been designed to provide shelter and security and building groups have relied on structures including walls and landscape features to provide shelter and enclosure. Some more recent developments have been unsympathetic to the historical development pattern or building style and are consequently a poor fit with the Park.

In the past, buildings often didn't face the view. They were designed and located to provide the most shelter from prevailing winds and so had windows on the sheltered side. This meant the building was sheltered from the worst of the weather and that the view was a secondary concern. More recent buildings have been orientated to face the view often without much thought for the prevailing winds, or the ability to maximise light due to facing south. In order to make buildings which are both making the most of their locations and the available natural light and heat sources, we need to make the most of the location of any development, along with the more modern and specialised sustainable materials and construction.



### Creating the legacy of the future

What we build today will still be here long after we are gone, if it is designed and built well.

This means ensuring all new development makes a positive contribution to its location. This can be achieved by carefully considering the location, scale, layout and design of the development, and how this relates to its surroundings.

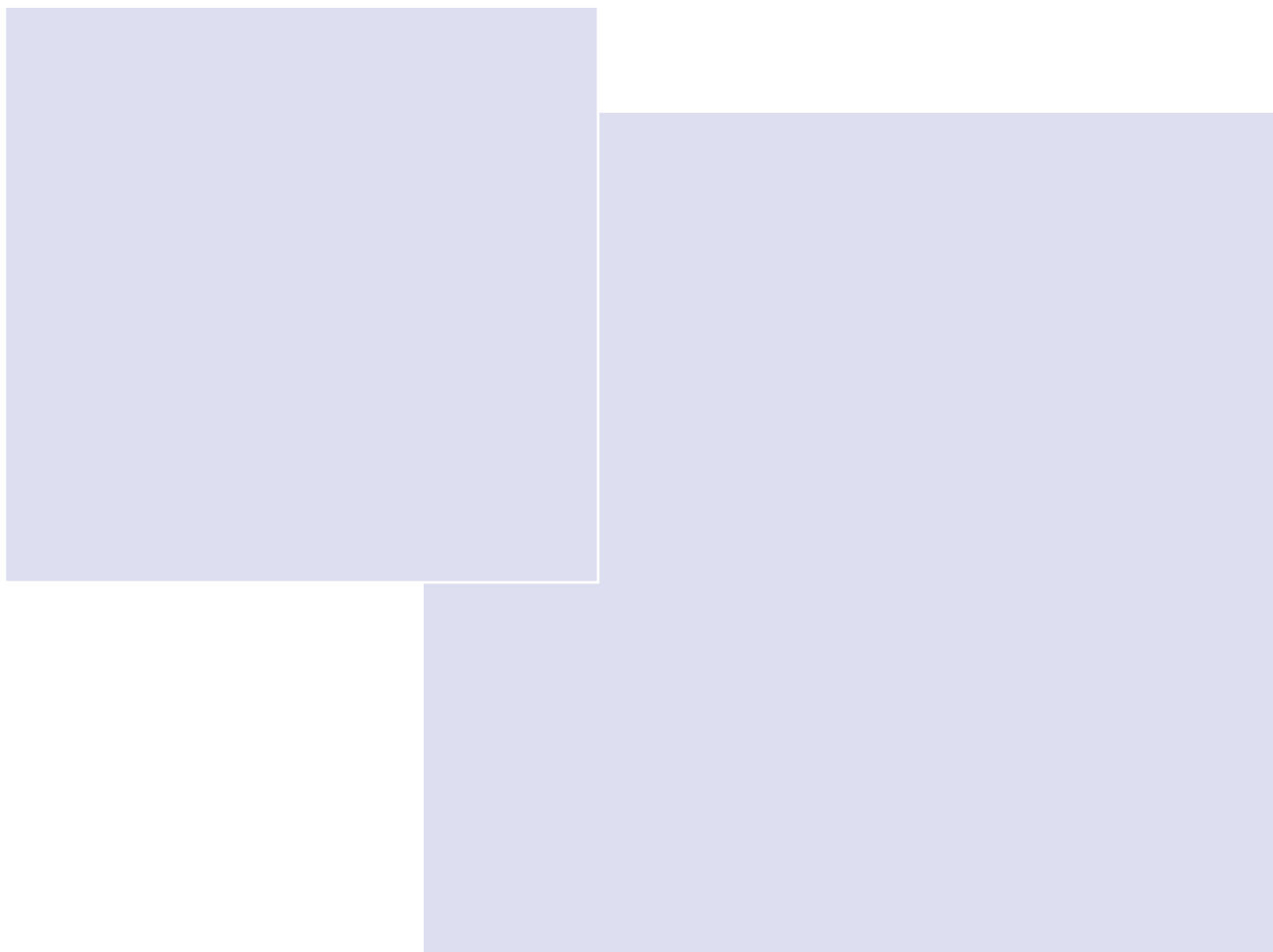
Off-the-shelf solutions that can be found anywhere, are not appropriate in the Cairngorms National Park. The special character of the place should be reflected in its buildings and serve the people who live, work and visit here.

Buildings and building groups, which are responsive to context and local distinctiveness and which

understand the local microclimate, can be seen in the traditional approach of buildings sited and designed to work with, rather than against, the natural environment.

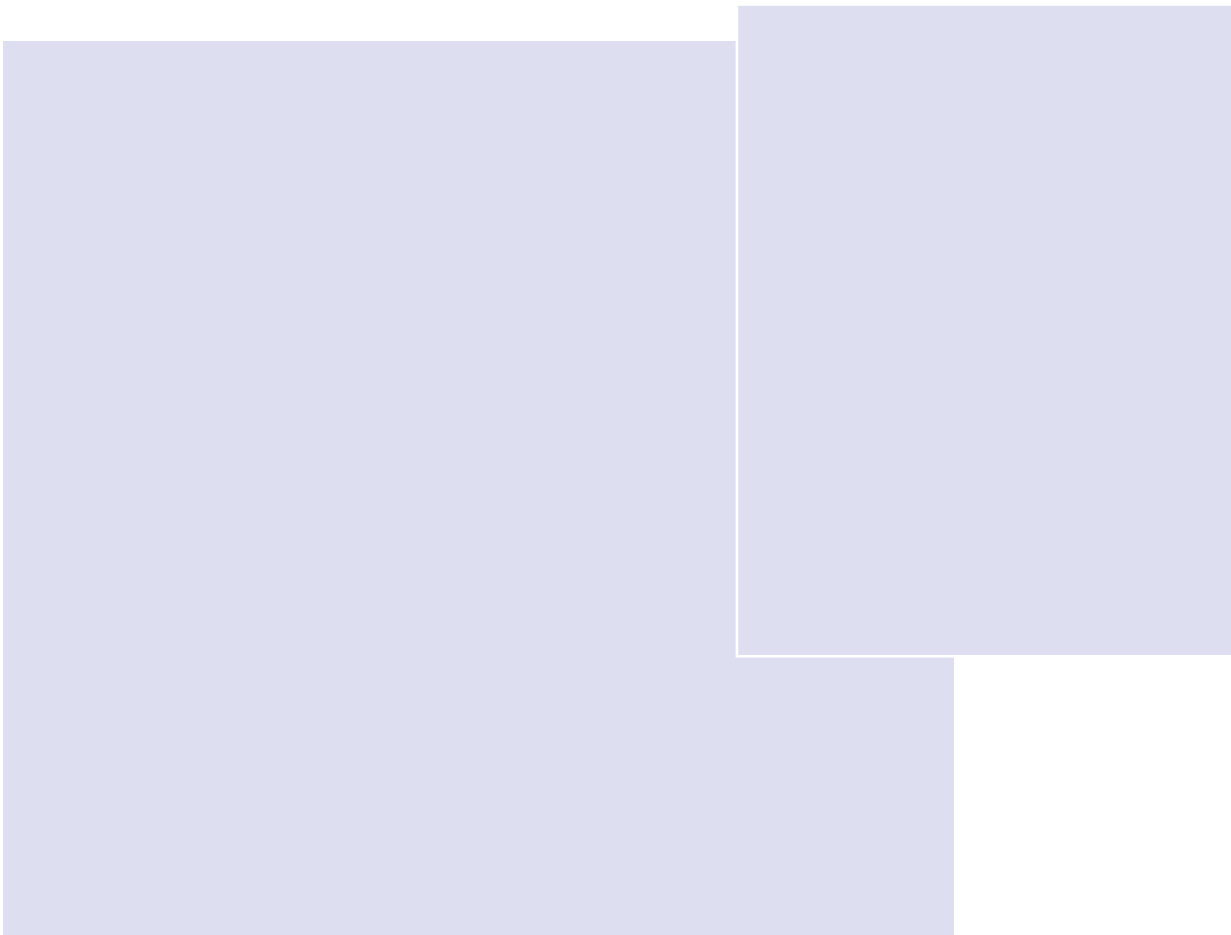
As many of the new houses built in the National Park are part of small estates, or extensions to existing settlements, it is important to ensure that the new site is looked at as a whole.

Each site should be looked at as a series of spaces, which relate to the existing topography and surroundings. These spaces then dictate where roads and streets fit, and within this framework, individual houses can be introduced. This should lead to sympathetic development of sites, and not a standard layout/pattern of development that is just imposed onto a site, irrespective of its setting and ground conditions.



Buildings should be sited to reflect the gradient and topography of the landscape and the scale of the landscape features. Traditionally, buildings were located within the natural contours of the landscape. Many new buildings do not respond to the local climate or the topography and modern machinery and methods of construction mean it is easy to ignore these natural constraints through re-levelling of ground. This results in development which is not only intrusive in the landscape but which is also more exposed to the elements. Existing ground levels should be maintained wherever possible in order to avoid these problems.

Attention should also be paid to any archaeology and cultural heritage interests on a development site. These features should be maintained and built into the design of any new development. Taking this approach will help to bed new development into the existing fabric of the area and respect the past, whilst still allowing for new development.



## 2.1(b)

### Materials and traditional skills

#### The changing face of construction materials

Traditional building materials contribute to the character of the Cairngorms National Park and the variation within it. The traditional materials of granite, blue whinstone, timber and corrugated metal provide a strong identity. Local traditions of design and materials across the Park have led to a series of distinctive local areas, each with their own character.

Local materials contribute to local distinctiveness and sense of place. Use of local materials is encouraged, provided that they are fit for purpose within the principles of sustainable design as set out in Section 1.6 (see p11). This needs a balance to be struck between sourcing materials locally and bringing in specialised products which will optimise the sustainability and long-term performance of a building.

Sustainable materials are those which have a low environmental impact. Generally they are:

- produced from a renewable resource or are re-used or recycled from a previous use;
- sourced locally to cut down on transport costs and to support the local economy;
- produced with minimum ecological damage and no exploitation of the workforce;
- non-polluting and non-toxic in manufacture, use or disposal;
- make use of existing materials from buildings that are now redundant;
- low in embodied energy, ie they are unprocessed or use the minimum amount of energy possible in their production.

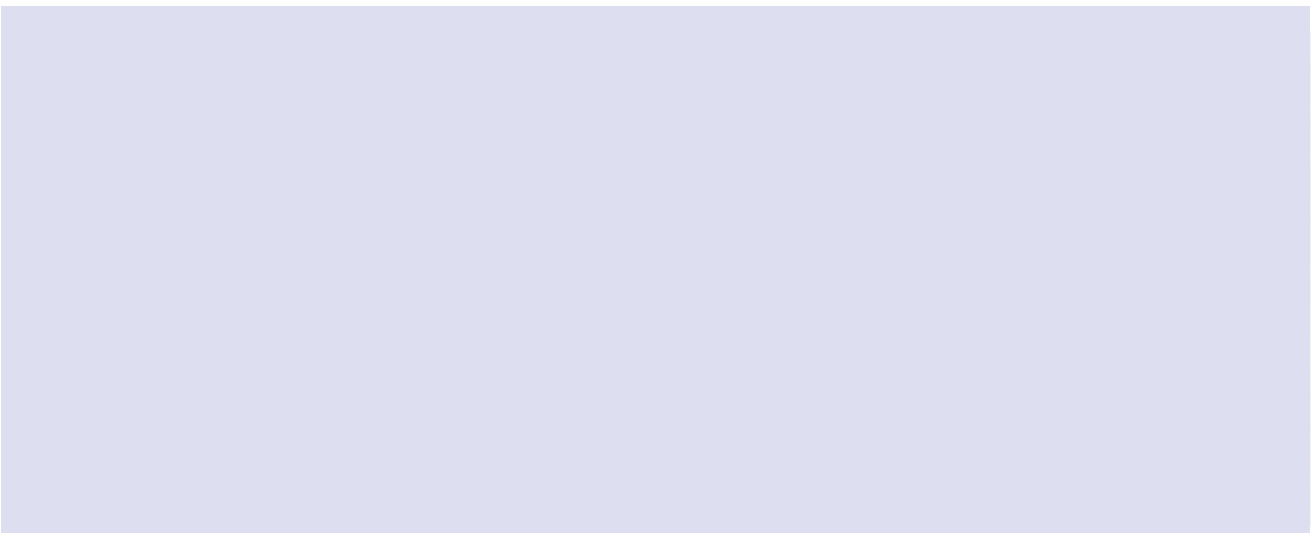
Materials which cannot be repaired should be avoided, for example minor damage to uPVC windows usually results in the whole window needing to be replaced, whereas repairs to timber windows are usually straightforward.

Low impact building materials may include recycled or previously used materials, for example secondary aggregates, or new materials which have used minimal energy in their production and transportation to site such as timber, sheep's wool insulation and straw bales. There is an increasing range of construction and finishing materials which are referred to as environmentally friendly, low impact or sustainable and it is not always easy to determine which materials are most suited to a particular development. There are a range of guides on sustainable products available and some of these are listed at the end of this section (see page 24).

Forestry is a traditional industry in the Park, and timber is a relatively low impact building material. Choosing sustainably produced timber from within the Park will also cut down on environmental impacts arising from the transportation of materials. Care must be taken to ensure that all timber is sourced from sustainably managed forests. The FSC sign is a mark of sustainable timber. This is the

trademark of the Forestry Stewardship Council and indicates that the wood used to make a product comes from a forest which is managed to strict environmental, social and economic standards.

The choice of construction and finishing materials should form an early part of the design process. The original fabric of older buildings within the Park is likely to reflect the use of local materials. Sympathetic redevelopment uses locally sourced and sustainable materials and construction methods which are compatible with the original fabric, for example lime mortar, traditional masonry and harling.



Some key considerations for all new developments include:

- designing for durability by using naturally durable local timber species including oak, European larch and Douglas fir;
- designing for recycling by using recycled or previously used materials: using components which can be easily re-used or recycled at the end of the building's life, for example bolts and screws rather than nails and avoiding prefabricated products which are made of more than one element, as these are difficult to separate;
- designing for maintenance by using materials that can be repaired and maintained, for example timber windows and doors, to prolong their lifespan;
- designing for health by using non-toxic chemicals. Toxic chemicals are emitted from a huge variety of fittings and finishes including carpets, varnishes, and paints which affect indoor air quality;
- design for the future: use a flexible building design to ensure that a building can be easily adapted to changes in need, for example non-load bearing partitions enable significant changes to building layout to be made relatively easily.

## 2.1(c)

### The natural environment

#### The environmental context

The Cairngorms National Park has internationally important and unique wildlife. Large areas of the Park are covered by natural heritage designations which have been put in place to help conserve specific interests including landscape, wildlife and historic interest for example Sites of Special Scientific Interest, National Nature Reserves and National Scenic Areas. In addition to this, many species found in the Park are protected by law, including bats and wildcats.

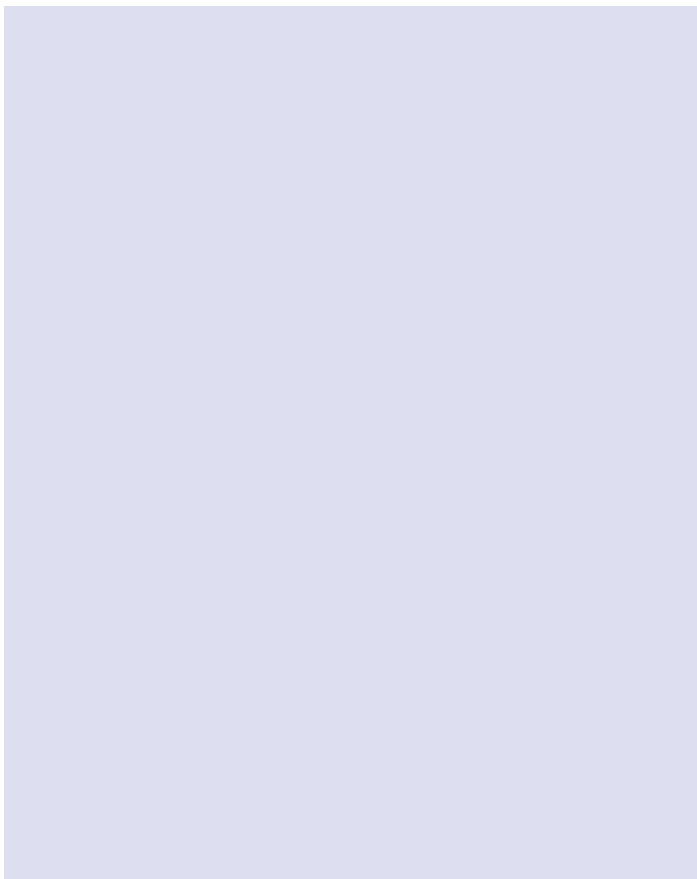
This diversity of nature is the basis of what we regard as special and important in the Park. The natural aspects of the Park, its biodiversity, the mountains rising from the floors of the glens, the immense rivers and lochs, moorlands and forests, combine with the more managed aspects of farmland, human settlement and the resulting built environment to give the Park its distinctive identity.

Expectations are that built development in the Park will be of a higher standard to ensure that these special qualities are not only protected, but also enhanced. Understanding the natural and cultural environment is an important element of this.

#### Understanding the natural environment

Finding out what wildlife habitats and species are present before a site is developed is the key to maintaining and improving the quality of the natural environment. This information should be taken into account when designing and planning the site to ensure that measures to protect existing wildlife are taken if the development proceeds.

Key aspects include minimising disturbance to animals and plants, retaining existing on-site trees and vegetation, maintaining linkages to other existing semi-natural environments and open spaces. Corridors and buffers which enable wildlife



to move between different areas include hedges, stone dykes and tree belts. These should be retained where they exist and should be considered an important aspect of the design of new development sites.

Tree felling and the destruction of semi-natural habitats, such as woodlands, hedgerows, wetlands and meadows, should be avoided. Existing habitats play an extremely important role in maintaining local biodiversity. They are also important in forming the setting for developments and will be useful in helping them fit into their surroundings.

Using native and locally occurring species of plants in landscaping features will enhance local biodiversity by providing habitats for native wildlife and plant species. Locally occurring species are likely to be more adapted to the local climate and therefore are more likely to survive than non-native species.

New on-site habitats can be incorporated into new developments. The specific detail will depend on the local conditions and type of development, but this could include using green or brown roofs (which incorporate plants and light-weight gravels) to encourage wildflowers, insects and bird life, bird boxes, bat boxes, and planting on walls or building facades. As well as supporting wildlife, planting on walls and roofs can help to stabilise temperatures within buildings, therefore reducing uncomfortable extremes for users of the building.

The timing of construction, demolition and other site works should be planned to avoid particularly sensitive periods. This includes nesting birds and summer and over-wintering bat roosts.

Crossing water courses, altering water flow in ponds, burns and wetlands or canalising or culverting burns should be avoided. The impact of the development on the water environment is an important consideration, both in terms of construction works and the impact of the finished building and its setting. This includes, for example, minimising the effect of water runoff from hard standing into rivers and streams and incorporating permeable surfaces, such as gravel, to help reduce runoff rates.

Development on peaty soils should be avoided as the hydrology of bog systems can be severely affected, leading to drying out and loss of stored carbon. Peat bogs play an important role in locking up carbon, which is a key contributor to climate change. Disturbance of peaty soils releases this carbon into the atmosphere.

For additional guidance on natural heritage and development, please refer to the Cairngorms National Park Authority Supplementary Planning Guidance – Natural Heritage.

## Further information

Comprehensive sources of information on sustainable materials include:

- [www.greenshop.co.uk](http://www.greenshop.co.uk)
- [www.greenspec.co.uk](http://www.greenspec.co.uk)
- [www.aecb.net](http://www.aecb.net)
- [www.livingethically.co.uk](http://www.livingethically.co.uk)
- [www.greenbooklive.com](http://www.greenbooklive.com)

Information on the embodied energy of construction materials can be found at:

- <http://people.bath.ac.uk>
- [www.forestry.gov.uk](http://www.forestry.gov.uk)

Information on timber is available from:

- Forestry Commission Scotland  
[www.forestry.gov.uk](http://www.forestry.gov.uk)
- Green Oak in Construction  
[www.trada.co.uk](http://www.trada.co.uk)
- Centre for Timber Engineering  
[www.cte.napier.ac.uk](http://www.cte.napier.ac.uk)
- Central Point of Expertise in Timber (CPET)  
[www.proforest.net](http://www.proforest.net)
- Using Local Timber – Contributing to Sustainable Construction – Guidance for North Scotland, Forestry Commission Scotland, Cairngorms National Park Authority, Moray Council, Aberdeen City Council, Aberdeenshire Council and The Highland Council.

For architecture and design see:

- A Policy on Architecture for Scotland  
[www.scotland.gov.uk](http://www.scotland.gov.uk)
- Scottish Ecological Design Association  
[www.seda2.org](http://www.seda2.org)

For information on the natural environment of the Cairngorms National Park please refer to:

- Biodiversity Planning Guidance Note for the Householder; CNPA (2005)
- Local Biodiversity Action Plan (LBAP) Project
- Supplementary Planning Guidance - Natural Heritage, CNPA (2010)
- Water Resources, CNPA (2010)
- Open Space, CNPA (2010)  
[www.cairngorms.co.uk](http://www.cairngorms.co.uk)

General information on the natural environment is available from a variety of sources including:

- SEPA Habitat Enhancement Initiative
- SEPA Regulatory Position Statement Developments on Peat  
[www.sepa.org.uk](http://www.sepa.org.uk)
- Information on the use of native species in planting is available from Scottish Natural Heritage  
[www.snh.org.uk](http://www.snh.org.uk)
- Biodiversity by design - TCPA (2004)  
[www.tcpa.org.uk](http://www.tcpa.org.uk)
- Green roofs  
[www.ciria.org](http://www.ciria.org)



## 2.2

### Using resources efficiently

There are significant pressures on infrastructure within the Park, arising from energy and water use and waste management. All new development should incorporate the most sustainable systems of energy, water and waste management in order to reduce these pressures. Most importantly, this means reducing the amount of energy required, for example through good insulation. This also includes incorporating other energy efficiency measures and generating on-site energy from renewable sources, minimising and recycling waste, and using water conservation techniques, including fittings and appliances which use less water.

Reducing the amount of energy and water used not only uses resources more efficiently and reduces emission, but also reduces the cost of bills, making the buildings cheaper to run in the future. Changes to construction techniques have meant

that buildings no longer have to be orientated to take advantage of the best of the local climatic conditions. As a consequence, they are not protected from the worst of the weather. Taking advantage of the local climate means solar gain and shelter from the weather is maximised which reduces the need for artificial heating, lighting and cooling in buildings. Not taking advantage of the local climate could result in future users of the building having higher fuel bills than would be necessary if the building was designed to take advantage of the opportunities presented by the natural environment.

Using development land efficiently is an important aspect of minimising the extent of land that is required for the built environment and associated infrastructure, such as roads and footpaths, drainage facilities and energy generation.

Issues to be covered in the Sustainable Design Statement	See section
<b>Energy efficiency, generation and renewables</b> <ul style="list-style-type: none"> <li>• Energy efficiency</li> <li>• Renewable energy</li> </ul>	2.2(a)
<b>Water use and wastewater; runoff and flooding</b> <ul style="list-style-type: none"> <li>• Foul wastewater treatment</li> <li>• Flooding</li> <li>• Surface water runoff</li> <li>• Water conservation</li> </ul>	2.2(b)
<b>Waste management</b> <ul style="list-style-type: none"> <li>• Waste and recycling</li> </ul>	2.2(c)
<b>Efficient use of development land</b> <ul style="list-style-type: none"> <li>• Efficient use of land and existing buildings</li> </ul>	2.2(d)

## 2.2(a)

### Energy efficiency, generation, and renewables

#### An efficient approach to energy use

Consideration of energy efficiency is key. Bolting on renewable energy technologies without first reducing the energy demand of the building through sustainable design should be avoided. Most energy used in the home is for heating space. The energy required, and therefore the costs, can be significantly reduced by following the principles of sustainable design.

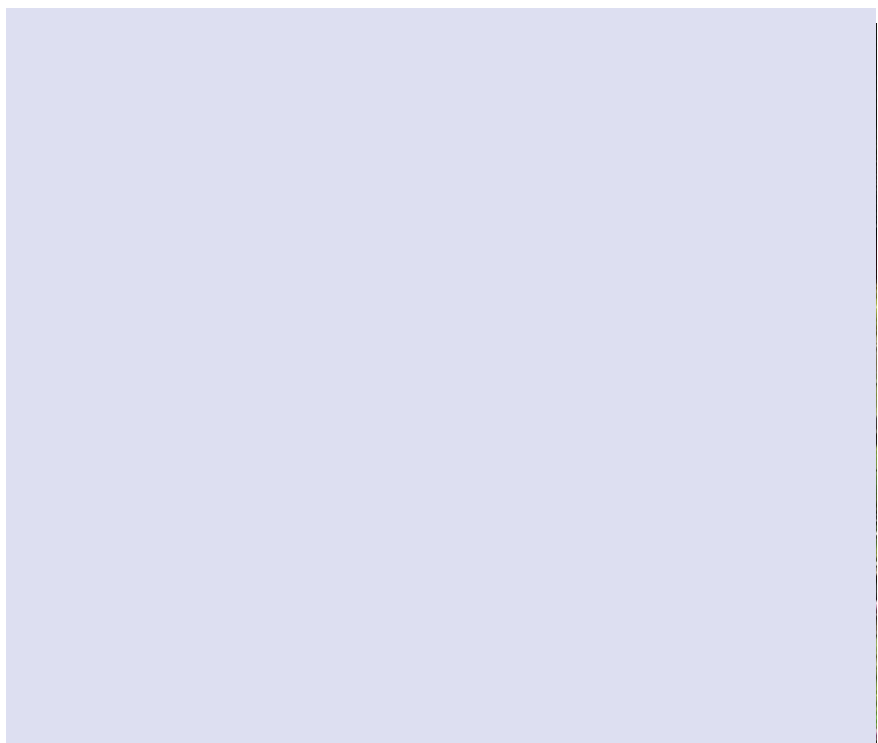
The siting, design, layout and orientation of buildings can have a significant impact on their sustainability in terms of energy consumption and the comfort of those using the building. Designing with the climate in mind, so that a building can benefit from solar gain, daylight and natural ventilation, whilst providing shelter and comfort is known as passive design.

A simple way to reduce energy demand is through the use of passive solar design to provide light and heat from natural sunlight and solar heat gain. This reduces the need for artificial light and heat. Keeping

the main glazed orientation of the building to within 30 degrees of south will maximise the potential for the sun to heat the building. This orientation also increases the potential for natural daylight to light the building. Solar electricity installations (photovoltaic tiles, cells, and panels) and solar thermal installations (water heating), also require this orientation. South easterly orientation maximises early morning gains and reduces the likelihood of overheating in the afternoons.

It is important to provide measures to prevent overheating; this might include blinds or screens. Wider eaves will also allow sunlight into the room in winter when the sun is lower in the sky but will shade the room in summer when the sun is higher.

In exposed locations, buildings should be set down into a hillside or bank of land to gain shelter from the prevailing wind. The narrow end of buildings should face the prevailing wind to reduce wind chill.



Additional shelter can be provided by planting (or existing) trees and hedges. This can also help to prevent overheating in summer.

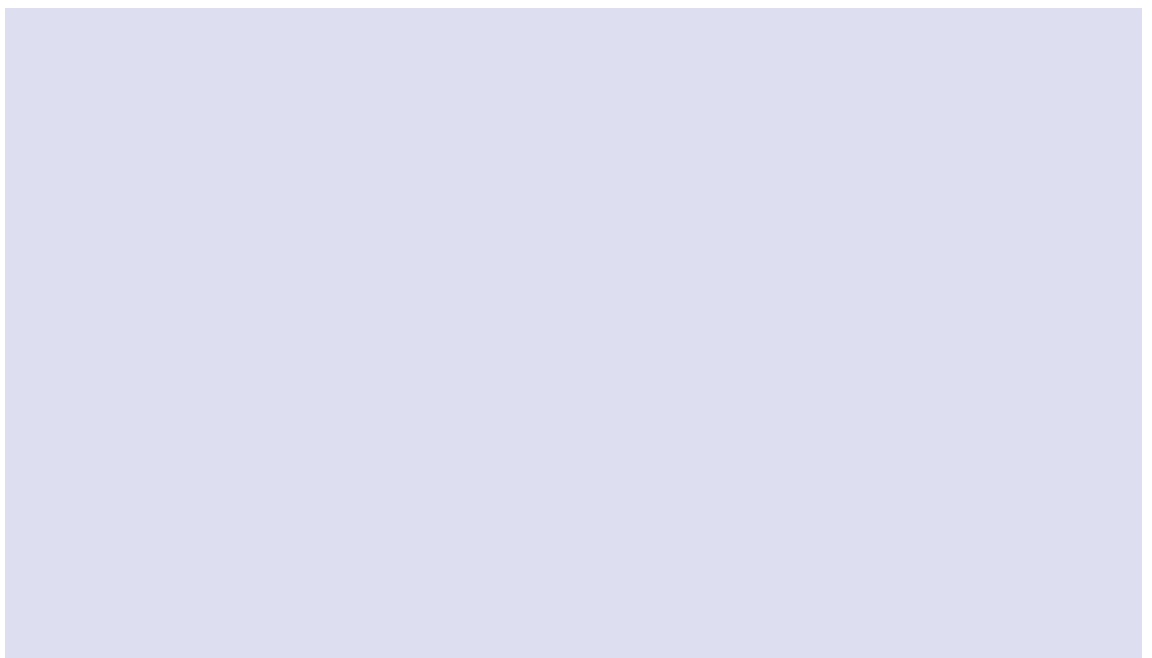
Consideration of the internal layout and construction techniques are as important as the external elements of the building. The most frequently used rooms should be located to the south side of buildings to make best use of solar gain; the north side should be used for less frequently used rooms, for example toilets, cloakrooms, storage, that require less heating. Rooms that are sized to allow sunlight to hit the back wall will benefit from the sun's natural heat and light. Building depth is therefore also an important consideration.

Attention to detail for draught proofing and insulation is important. The provision of unheated draft lobbies and sunrooms will cut down on heat losses, as will insulation. Conservatories should

be well partitioned from the main building. Walls, windows and doors facing into the conservatory should be insulated to the same standard as any other external part of the building. Vents and blinds should be provided to help reduce excessive summer heat.

Ventilation is important to prevent excessive moisture build up. The best option is 'passive ventilation'. These are methods which do not require the use of energy and can be as simple as incorporating opening windows and trickle vents into window frames.

Use of construction materials with a high thermal mass, which have the ability to store heat, will help to reduce variations in internal building temperatures. For example, a green roof provides greater thermal mass, helping to stabilise temperatures more than a traditional slate roof.



### Generating energy where it's needed

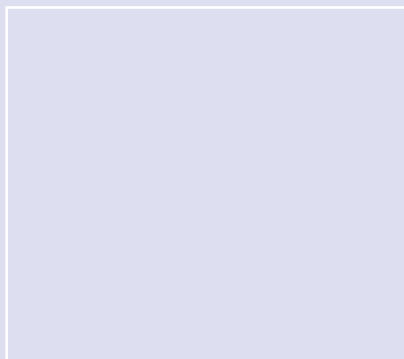
Generating energy on-site has long been a necessity for those in remote areas and those not connected to the national electricity or gas grids. Historically there has been a reliance on diesel-powered generators for power and oil, coal, peat and timber for heating. Fossil fuels such as coal, oil and gas are known to contribute to climate change through the emission of greenhouse gases, including carbon dioxide (CO<sub>2</sub>). Reducing consumption of fossil fuels is a fundamental step towards combating climate change.

Incorporating small scale renewable or low carbon energy systems into developments or individual buildings can make a significant impact on reducing CO<sub>2</sub> emissions. Technologies which can be applied to individual buildings include:

- small scale, stand alone wind turbines;
- solar thermal heating panels;
- solar energy photovoltaic cells, tiles and panels;
- air, ground, or water source heat pumps;
- small scale hydro-electric schemes;
- biomass heating systems.

Community heating schemes should be considered where appropriate. They can be applied to small scale developments of two to three buildings as well as larger developments. Larger scale developments should consider the use of a combined heat and power scheme (CHP).

Systems which use locally available fuel, for example woodchips or wood pellets, can help to reduce dependence on fossil fuels and other remote energy sources where security of supply may be an issue in the future. Using local fuels will also help to support local businesses.



## 2.2(b)

### Water use and wastewater; runoff and flooding

#### Making the most of the water resource

The natural environment of the Cairngorms National Park demands high water quality and good physical condition of water bodies. There is a need to encourage more sustainable patterns of water use by all users, including domestic, industrial, agricultural and recreational users, to ensure both quality and quantity of the available water resource.

Within the Park there are a number of pressures associated with development and land management on both surface and groundwater. Water supply and wastewater treatment capacity can be significant constraints on the development of communities. More detail on pressures affecting the water environment is available in the River Basin Management Plans and interactive maps available at [www.sepa.org.uk](http://www.sepa.org.uk)

Water use per person has been increasing, and is likely to increase further with the growth in demand for consumer items such as dishwashers. At the same time we are faced with climate change predictions which show hotter, drier summers in the near future.

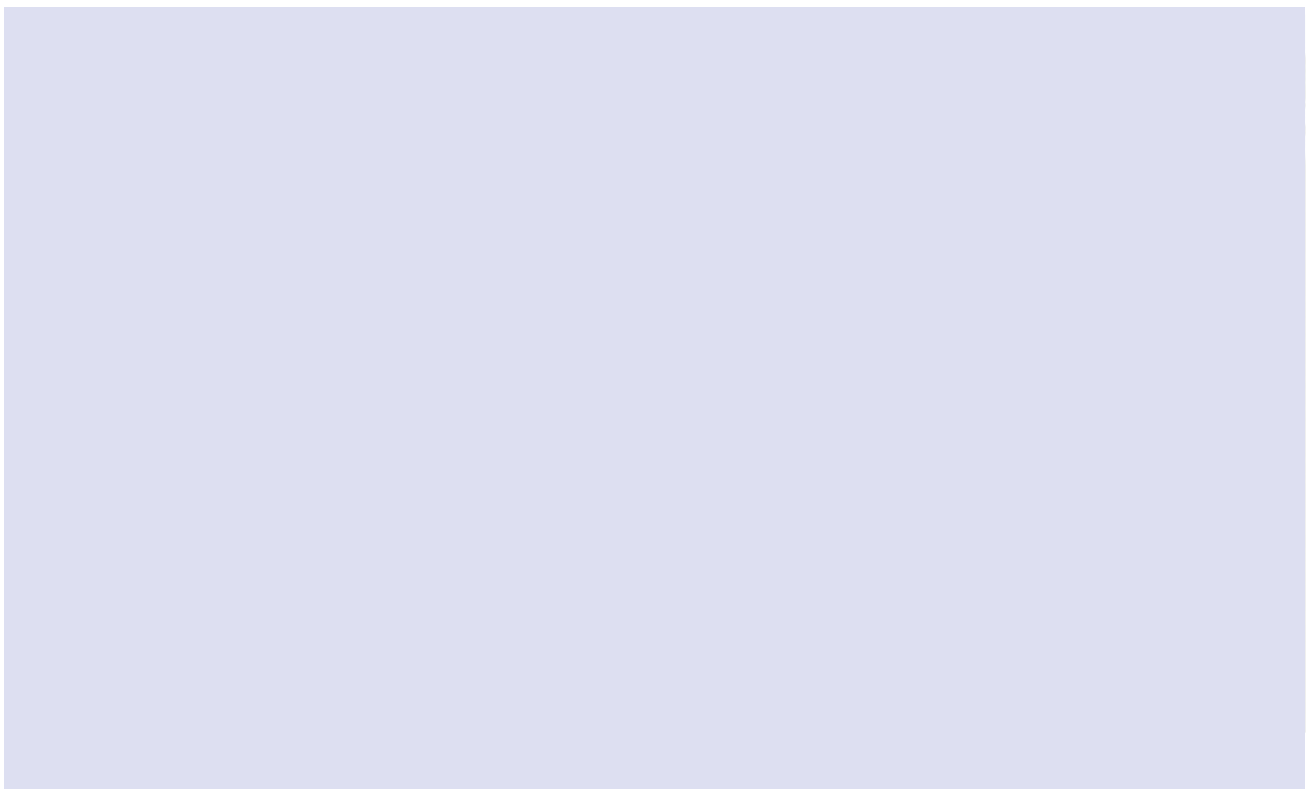
The energy consumed by heating water for washing, central heating systems etc, has a major impact on energy consumption. Water conservation devices which limit the amount of water used (for example aerated taps and showers) and 'A' rated appliances which reduce water use, will also help to reduce energy consumption and therefore household bills.

Water conservation is becoming increasingly important. There are many easy and low-tech ways to conserve water resources:

- rain water or green water capture for use externally, for example in the garden or washing the car, is a low-tech solution and can be as simple as connecting a water butt to all downpipes on buildings, including those on outbuildings, garages and garden sheds;
- installing 'A' rated appliances within the home can reduce the total amount of water used; water saving devices are also useful, for example aerating taps and low-flush cisterns.

Although flooding cannot be wholly prevented, many measures to reduce the impact of flood events can be delivered through appropriate building siting and design, careful building design and the use of certain construction materials. Green roofs, permeable surfacing for paths and parking areas, for example gravel and grass and Sustainable Urban Drainage Systems (SUDS) which use swales and basins, infiltration trenches, filter drains, ponds and wetlands, can all help to alleviate flash flooding by reducing the speed of rainwater runoff.

Where a public sewer connection is not available, foul water must be treated before it is discharged to either land or a watercourse to comply with relevant Building Standards and SEPA regulatory regimes. Whilst there are various off-the-shelf sewage treatment plants available, more sustainable sewage treatment solutions are available including wetland and reed bed treatment systems and composting toilets. Consideration of the correct solution for a specific site will require discussion with SEPA and a suitably qualified drainage engineer.



## 2.2(c)

### Waste management

#### Reduce construction waste to save money

Well over a third of all waste going to landfill in Scotland is construction waste. Site Waste Management Plans help to reduce waste and therefore make savings on Landfill Tax payments as well as helping companies improve their environmental performance and meet regulatory controls.

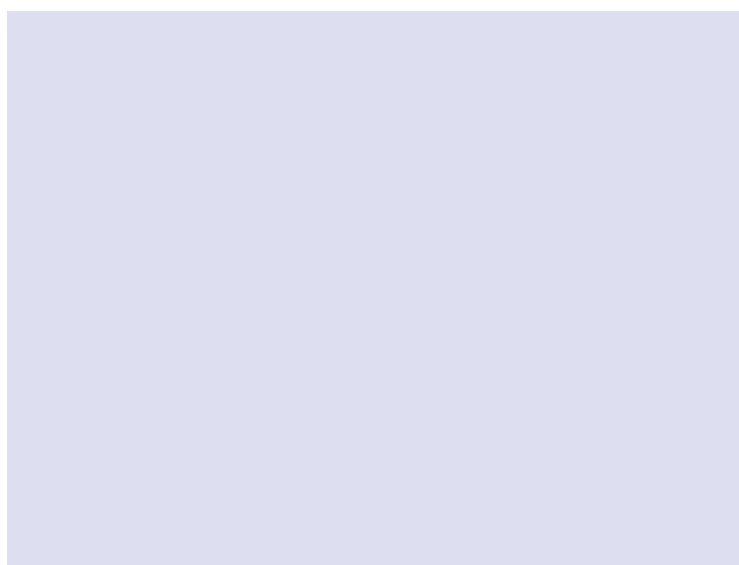
Developers are encouraged to sign up to the Considerate Constructors Scheme. This is an accreditation scheme to improve the image of the construction industry, its processes and products. The scheme includes initiatives regarding responsible materials use, recycling and minimising the need for waste disposal.

A Site Waste Management Plan should accompany all large development proposals. This is a means to identify the volume and type of material to be demolished and/or excavated, opportunities for re-use and recovery of materials and to demonstrate how off site disposal of waste will be minimised and managed. Such a plan can also deliver financial benefits to the developer by helping to manage material supply and waste which reduces the likelihood of materials being over-ordered and decreasing the amount of waste that needs to be disposed, thereby cutting development costs.

#### New ways with waste

Over 70 per cent of collected household waste is recyclable or compostable. Some commercial and industrial waste is also recyclable or compostable. Dedicated space for facilities to enable recycling should be incorporated into all new developments. The type of waste and recycling facilities provided for users will vary depending on the type and scale of the development and the current provision by the local council. Developers should therefore aspire to current best practice with regards to recycling and waste management standards for storage of household waste.

Composting is a sustainable option for the treatment of suitable waste materials. It effectively treats the waste where it is generated and does not need it to be transported from the site. The end product of the waste treatment, ie the compost, is then also used on site. Opportunities for composting in household, commercial and industrial developments should be considered and appropriate provision/facilities provided.



## 2.2(d)

### Efficient use of development land

#### Valuing land as a scarce resource

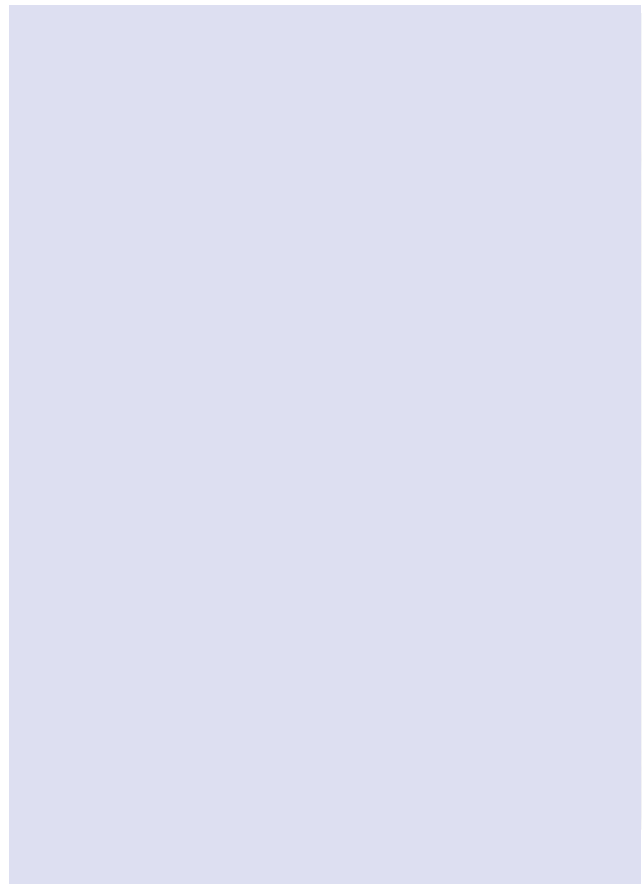
The Cairngorms National Park is characterised by its wild land and primary land uses, including farming and forestry. Making efficient use of available development land is therefore important to ensuring that the character of the Park remains intact. However, it is also important to consider the private space within which a house sits. This is an important aspect of the development and should be considered from the outset of the design.

The re-use of derelict or redundant buildings and previously developed land is an important aspect of the efficient use of development land. Not all derelict buildings will be in sustainable locations and appropriate uses for such buildings are quite site specific.

Ensuring that site planning takes account of all land uses from the outset, rather than considering some as optional extras towards the conclusion

of the development process, will help to make the best use of the available land resource. These land uses include consideration of opportunities for community amenity, sustainable drainage and renewable energy.

Developments which identify uses for all land on the site, and make a clear distinction between public and private space, will help prevent pockets of land becoming derelict in the future.





## Further information

Information on household waste and recycling including identifying what can be recycled and where can be found at:

- [www.wrap.co.uk](http://www.wrap.co.uk)
- [www.wasteawarescotland.org.uk](http://www.wasteawarescotland.org.uk)
- [www.soilassociation.org](http://www.soilassociation.org)
- [www.crns.org.uk](http://www.crns.org.uk)

Advice on managing construction and demolition waste, Site Waste Management Plans and associated legislative requirements, is available from:

- [www.constructingexcellence.org.uk](http://www.constructingexcellence.org.uk)
- [www.ice.org.uk](http://www.ice.org.uk)
- [www.aggregain.org.uk](http://www.aggregain.org.uk)
- [www.sepa.org.uk](http://www.sepa.org.uk)
- [www.wrap.org.uk/construction](http://www.wrap.org.uk/construction)
- Site Waste Management Plans  
[www.envirowise.gov.uk/scotland](http://www.envirowise.gov.uk/scotland)  
[www.netregs.gov.uk](http://www.netregs.gov.uk)

Information on sustainable drainage options, water conservation and rainwater harvesting systems is available from:

- Green roofs  
[www.ciria.org.uk](http://www.ciria.org.uk)
- SUDS manual  
[www.ciria.org.uk](http://www.ciria.org.uk)
- Sustainable Drainage Design Guide for Housing in the Countryside, Highland Housing Alliance  
[www.highlandhousingalliance.com](http://www.highlandhousingalliance.com)
- SUDs Regulations and habitat enhancement  
[www.sepa.org.uk](http://www.sepa.org.uk)

- Recycling rainwater and grey water  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)
- Sustainable Drainage Options  
[www.scottishwater.co.uk](http://www.scottishwater.co.uk)

Comprehensive, practical guidance on auditing use of energy, energy efficiency and availability of grants is available from:

- [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)
- [www.carbontrust.co.uk](http://www.carbontrust.co.uk)
- [www.sbsa.gov.uk](http://www.sbsa.gov.uk)

General information on renewable energy generation is available from:

- [www.cat.org.uk](http://www.cat.org.uk)
- [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)
- [www.communityenergyscotland.org.uk](http://www.communityenergyscotland.org.uk)
- Wind energy  
[www.bwea.com](http://www.bwea.com)

Information on climate change, reducing carbon emissions and climate-proofing buildings for the future is available from:

- Scottish Climate Change Programme (SCCP)  
[www.scotland.gov.uk](http://www.scotland.gov.uk)  
[www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

## 2.3

### Minimising the environmental impact of development

No matter how well designed a development proposal may be, there are still a number of environmental impacts which can occur either as a result of the development process or as a result of the way the finished development is used.

Construction processes can cause detrimental impacts to air quality from a variety of sources, together with light and noise pollution.

Development usually creates the need for transportation of people and goods and the need to travel, including the delivery of materials to a construction site or the need for residents to travel to work, school or community facilities.

Whilst at first glance it may seem that the developer has little control over some of these impacts, the overall approach taken to the design and execution of the development can in fact influence all these issues to a certain degree.

Issues to be covered in the Sustainable Design Statement	See section
<b>Air, light and noise</b> <ul style="list-style-type: none"><li>• Site management</li><li>• Unobtrusive development</li></ul>	2.3(a)
<b>Travel and transport</b> <ul style="list-style-type: none"><li>• Transport</li><li>• Pedestrians and cyclists</li><li>• Community transport initiatives</li></ul>	2.3(b)

## 2.3(a)

### Air, light and noise pollution

#### Minimising the impacts of construction activity

Construction activity can generate significant amounts of noise and air pollution, for example in the form of dust. Minimising the impact of construction activities on the amenity of neighbours is therefore important.

Good site management practices should be put in place to ensure potential pollution from all sources is minimised. The Considerate Constructor Scheme (CCS) is a voluntary scheme designed to promote and encourage safe, considerate, clean and responsible builders and building sites. Guidance on addressing noise and air pollution can be found on the CCS website (see Further Information, page 37).

Travel plans for construction sites will also help to ensure better planned deliveries which limit the overall generation of traffic movements and associated noise and air pollution on-site. This can also reduce development costs.

Light pollution can result from construction activity, and site security, as well as from the finished development. Appropriate measures should be put in place to limit light pollution.

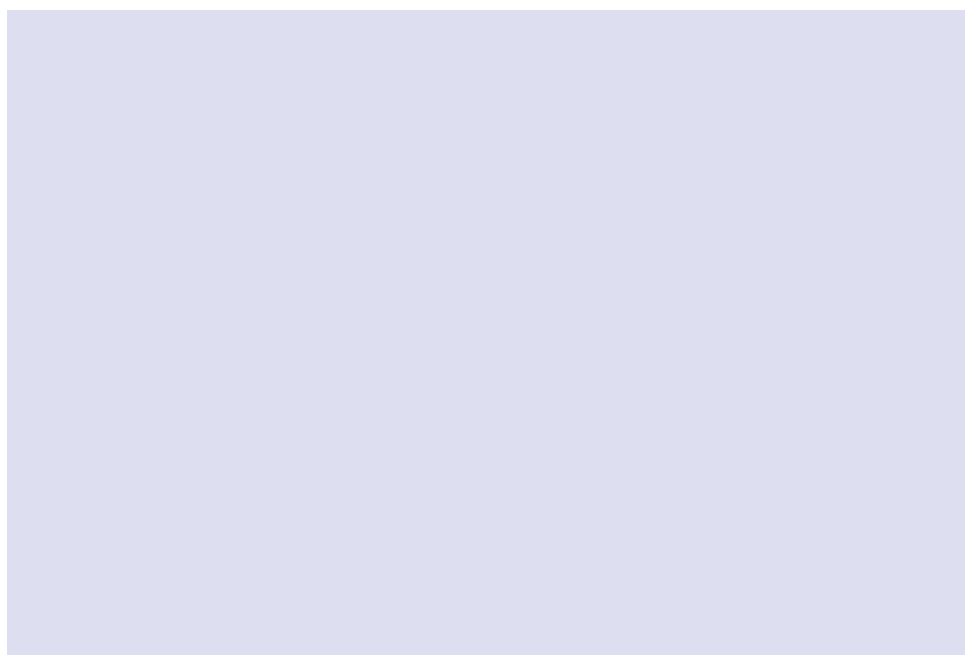
#### Unobtrusive developments

The quality of the dark night skies in the Park is a significant contribution to the sense of wildness that can be experienced. To maintain this, all developments should minimise the light pollution which they create either during construction or use of the development.

Consideration should be given to how disturbance from light pollution can be minimised where external lighting is required. Pedestrian routes which are lit should use light fittings which direct light towards the ground, in order to avoid light pollution.

Opportunities to look at lighting that can be dimmed/turned off when not in use, for example on demand street lighting, and sensors on domestic lighting should also be considered.

Noise resulting from building occupiers and users can be reduced by using acoustic glazing, acoustic barrier fencing and landscaping belts. Solutions should reflect traditional materials, planting schemes and use native species.



## 2.3(b)

### Travel and transport

#### Reducing the carbon footprint

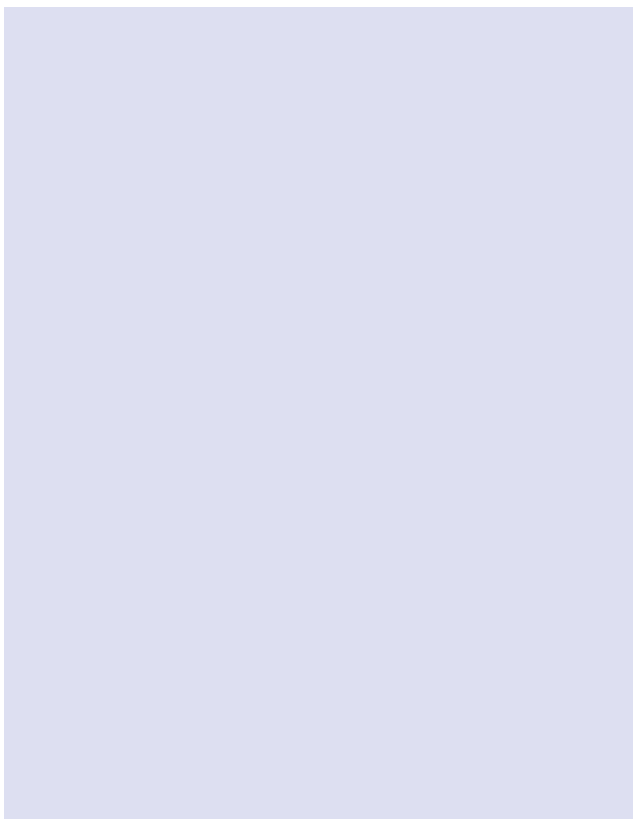
Most new developments will generate additional traffic movements and/or requirements for parking. Transport is the only sector of the economy from which emissions have been rising consistently since 1990.

Private transport is heavily relied on in rural areas and car ownership is relatively high. An effective transport system is one of the key factors to sustaining rural populations. However, fuel costs are high and around a third of residents in the Highlands have no access to a car.

Cycle parking is essential to support cycling as a practical choice. This is especially important for those developments which are served by a train line or bus service where cycling is used as a means of starting or finishing the journey.

Vehicle parking is frequently allowed to dominate developments, whether residential or non-residential. This imposes an urban feel onto rural areas. Designers should ensure that road layouts in new developments are not used as a means to dictate the position of buildings, pedestrian routes or open space provision.

A number of different solutions to travel in rural areas have arisen in recent years. Parts of the National Park are now covered by community transport schemes. Furthermore, parts of the Park are also involved in projects that encourage the use of electric vehicles. In order to help promote opportunities to increase the uptake of such initiatives, the provision of electric vehicle recharge points should be considered.

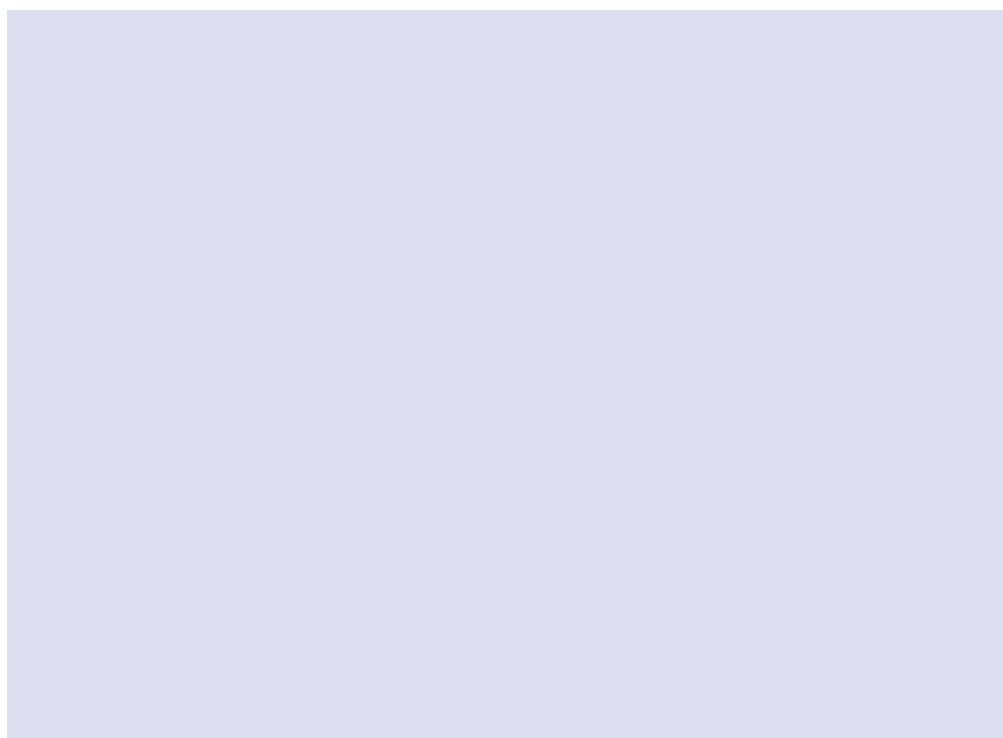


### Further information

Comprehensive advice on reducing the impact of construction is available from the Considerate Constructors Scheme [www.ccscheme.org.uk](http://www.ccscheme.org.uk)

Transport and travel information can be found at:

- [www.cyclingscotland.org](http://www.cyclingscotland.org)
- Cairngorms National Park Core Paths Plan, CNPA (2010)  
[www.cairngorms.co.uk](http://www.cairngorms.co.uk)
- Air pollution and air quality  
[www.environmental-protection.org.uk](http://www.environmental-protection.org.uk)



## 2.4

### Enhancing the viability of Cairngorms National Park communities

The way people live and work is changing. Increased life expectancy also means that the way we use our homes, access services and community facilities is changing.

Sustainable buildings are flexible and accessible in their design. This means buildings which will be fit for purpose and will be able to function effectively, even when our lifestyles change. This might be due to changes in the way we work or changes in our health. Buildings built to Lifetime Homes Standards have flexibility built into their design. Some buildings are deliberately designed for short-term use. In this case the building should be designed to enable effective re-use or recycling of its components. Flexible design should also allow for home working, whether in traditional industries and supporting services, or from new opportunities arising from the increasing range of communication technology

now available. There is also an increasing demand from those seeking alternative lifestyles which may embrace a back-to-the-land approach. Private space is still important and increasing interest in gardening, particularly grow-your-own, is reminding us of the need for suitably sized gardens, as well as public space in the form of allotments and community gardens.

The services and facilities required by communities are also changing. But certain things, such as safe and attractive public open spaces, community facilities and services, are still important to the viability and liveability of our communities.

Issues to be covered in the Sustainable Design Statement	See section
<b>Flexibility of design</b> <ul style="list-style-type: none"> <li>• Design for flexibility</li> <li>• Private amenity space</li> <li>• Home working</li> </ul>	2.4(a)
<b>Community facilities</b> <ul style="list-style-type: none"> <li>• Accessibility of community facilities</li> </ul>	2.4(b)

## 2.4(a)

### Flexibility of design

#### Making homes to last a lifetime

Evidence shows that the population of the Cairngorms National Park is likely to age faster than the national average. Lifetime Homes Standards are building standards which have flexibility built into their design. Buildings which are flexible in design can be easily adapted to suit different requirements over time.

Housing which is adaptable, could incorporate spaces that could be used for home working or allow for changes in the ability of residents to move around the building. This gives the building a longer lifespan and, in the case of housing, allows residents to stay in their home and community even if their needs change.

Design for accessible buildings includes consideration of both the internal and external environments; not only how to get into the building, but how to get to the door of the building, and once inside how to move around and access rooms and facilities as required.

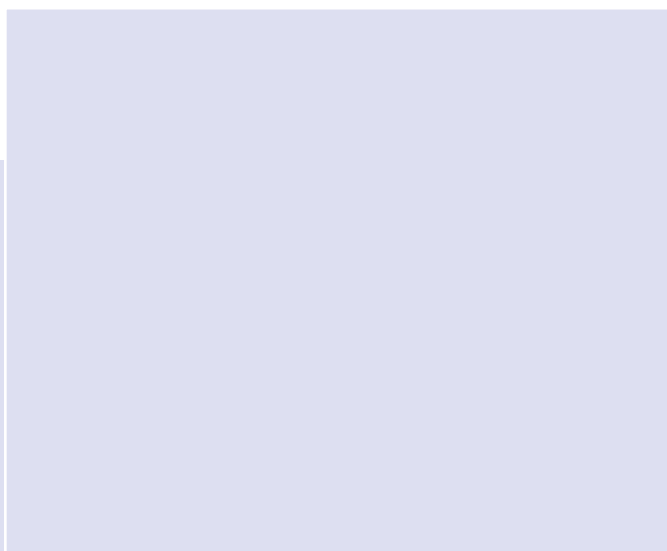
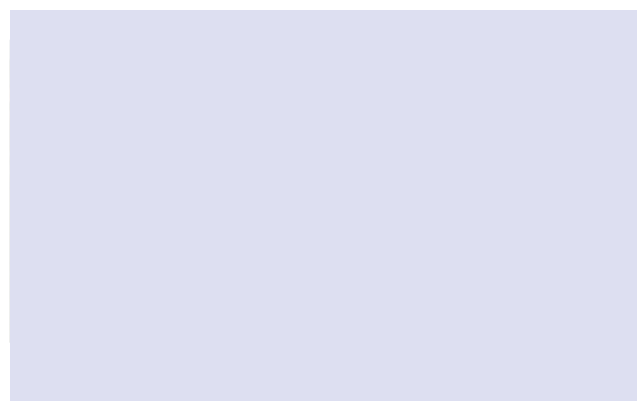
#### Expanding the tradition of working from home

Traditionally people in rural areas have been employed in primary land uses including farming, and forestry and the services which support these industries. The increased flexibility which ICT brings, and an increasing interest in alternative lifestyles, means that the rural economy is diversifying. Commuting is also an important aspect of rural life, as there is often a lack of employment opportunities in the local community.

As a consequence of this there are changing demands to the design of housing in particular. This includes the designation of space for working from home. This is not limited to an office space within a house or outbuilding, but could also include workshops, studios, retail outlets etc. Plans for home working should be thought about at the outset and should include access to broadband.

#### Buildings which are fit for many purposes

New buildings which are sited and designed to allow for future changes to internal layout or external extension will have a longer, useful lifespan. Using construction techniques which enable significant changes to be made to the building easily will help to extend the building's use – for example non-structural partitions which can be easily removed or re-positioned to create new spaces.



## 2.4(b)

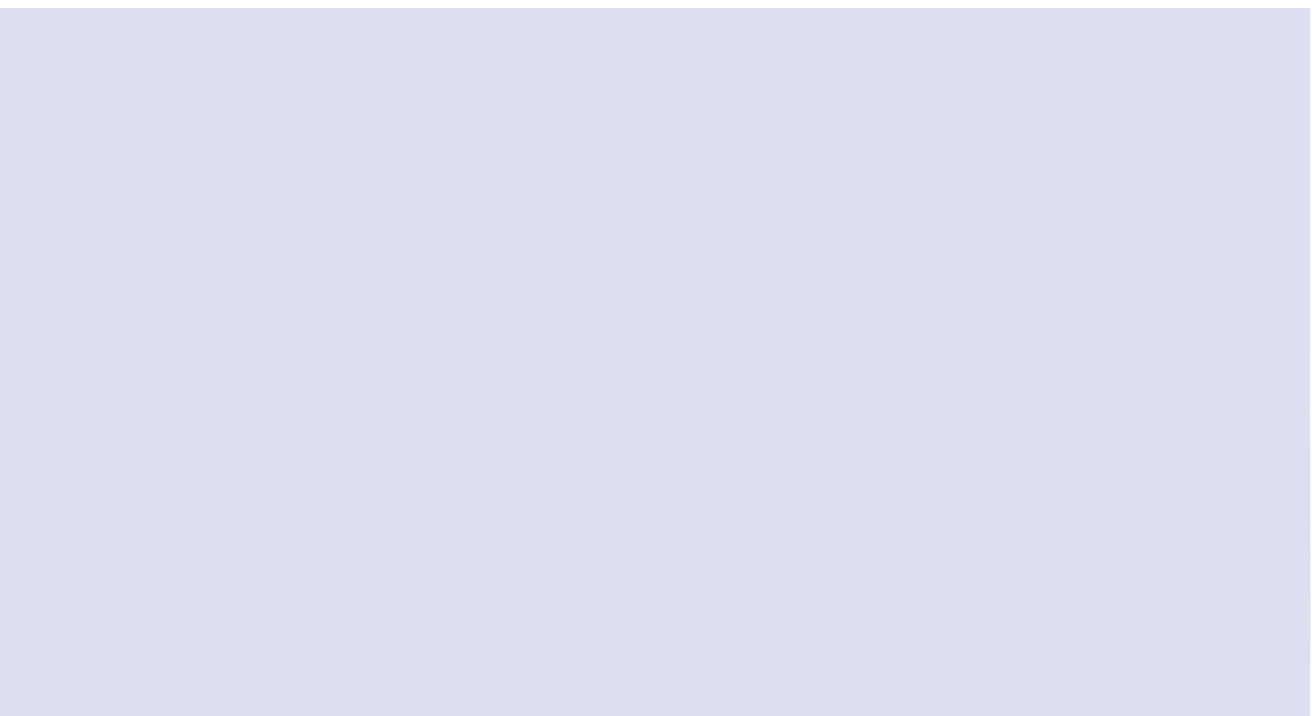
### Community facilities

#### Communities – not just a collection of houses

Access to services and facilities is key to the viability of communities. This includes services such as schools, colleges, libraries, health centres, banks and shops as well as community facilities such as village halls, churches, community centres, public parks and open spaces. These services and facilities must be available for those without access to private transport.

New development must provide adequate private and public open space for residents. The distinction between public and private space should be obvious, using sympathetic boundary treatments and local materials.

Public and private spaces should flow naturally into the wider countryside; this will help the development to look natural in its setting. Boundary treatments which create a suburban edge, such as solid timber fencing, should be avoided. Links to the wider countryside are an important aspect of community life. The provision of paths which are remote from main roads will help ensure safer routes for pedestrians and cyclists.





## 2.4(c)

### Adapting to climate change

#### Ensuring future building integrity by climate-proofing now

Climate change predictions indicate hotter, drier summers and warmer, wetter autumn and winter periods. More frequent and more extreme storms, including high winds and flash flooding, are also predicted. This will impact on all forms of infrastructure including storm drains and sewers and the built environment in general.

Climate change is happening and will continue to lead to gradual changes in climatic conditions over the coming years. Buildings, particularly houses, being constructed today will still be around in 50 years time when these climate changes will be making more of an impact. Therefore building today needs to take into account the future climatic conditions.

Drainage systems should be designed to enable excess runoff during storm events to be dealt with, thereby preventing flash flooding. Rainwater collection systems for example water butts should be incorporated to collect and recycle water for use during dry spells.

Roof designs should be robust and use the traditional approach of steep pitches and sarking. Incorporating over-hanging eaves to cope with increased rainfall as a result of climate change can

still reflect these traditional approaches. External walls should be protected from increased rain by large eaves and splash zones at the base of walls. Gutters and other rainwater goods should be sized to allow for higher rainfall. Materials which are durable and can be maintained and repaired, and which are local (or easy to obtain) should be used. This allows damage to be dealt with in a timely manner, which may save money in the long run.

To avoid risk of damage from water and damp penetration, attention should be given to designing and detailing junctions, for example between external walls and windows and doors. This should enable water to be quickly shed so it is not allowed to collect in joints which may damage materials, for example through wet rot.

Internal building temperatures can be stabilised to reduce the risk of overheating in summer by incorporating thermal mass into the design. This could include a green roof. Shading and shelter can be provided through landscaping and natural ventilation rather than reliance on energy intensive mechanical ventilation or air conditioning systems. This should be designed to provide shelter from severe storm events and shade from excessive solar gain.

**Further information**

For information on building homes to last a lifetime, including the Lifetime Homes Standards, see:

- [www.lifetimehomes.org](http://www.lifetimehomes.org)

For information on climate change see:

- [www.sepa.org.uk](http://www.sepa.org.uk)

To find out what action Scotland is taking to address climate change, see Scottish Climate Change Programme (SCCP):

- [www.scotland.gov.uk](http://www.scotland.gov.uk)

For practical household action on climate change see:

- [www.infoscotland.com](http://www.infoscotland.com)

## How to use the Sustainable Design Statement and checklist

Developers/architects should use the following checklist to prepare their sustainable design statement and to ensure that their development proposal meets the minimum standards for all the required issues. Evidence to support this should be provided in the sustainable design statement.

Not all issues in the checklist will be appropriate to all developments. Use your sustainable design statement to show that you have considered each of the issues in turn and what actions you have taken to address them. If you believe something is not relevant, then please contact the relevant planning authority.

Anyone considering built development in the Cairngorms National Park is strongly advised to have discussions with the relevant planning officer prior to the submission of a planning

application. This will help to ensure that all issues relevant to the application are identified and addressed at an early stage in the development process.

The standards contained in the Sustainable Design Statement and checklist are the minimum required at the current time. All developers wishing to build in the Cairngorms National Park are encouraged to exceed the minimum standards and achieve the highest level of sustainable design possible.

# 3

## Sustainable Design Statement and checklist

Sustainable Design Statement checklist issues	Cairngorms National Park Authority standards Minimum sustainable design standards to be achieved	Cairngorms National Park Local Plan Relevant policies and additional guidance
<p><b>I. Development layout, scale, proportion, materials, construction and finishing</b></p> <p>Will the appearance of the development be visually appropriate, taking into account and complementing local character, whilst reinforcing local distinctiveness (for example, materials, road pattern etc) and be clearly integrated with the wider community?</p> <p>A. Building materials and colour complement local character;</p> <p>B. Site layout, building style and scale enhance local character;</p> <p>C. Roof-scapes visually respect the local context (allowing for low carbon technologies where appropriate);</p> <p>D. Continuity of local building details such as simple and uncomplicated design of roofs, dormers, windows and doors;</p> <p>E. Potential for personalisation by prospective residents;</p> <p>F. Contemporary approach which reflects the local vernacular where appropriate.</p>	A-D	Local Plan Policy 16: Design Standards for Development
<p><b>2. Landscaping</b></p> <p>Has a landscaping scheme been drawn up for the site which integrates the development into its setting and includes provision for public open space, appropriate public/private and site boundaries, and which conserves the existing landscape and ecological assets?</p>	Landscape scheme drawn up.	<p>Local Plan Policy 6: Landscape</p> <p>Natural Heritage and Open Space Supplementary Planning Guidance contains essential further information</p>

<p><b>3. Cultural heritage</b></p> <p>Are the culturally and archaeologically important features on the site and their settings known, and how will these be affected by the development?</p>	<p>Important features are identified and protected.</p>	<p>Local Plan Policy 7: Gardens and Designed Landscapes</p> <p>Local Plan Policy 8: Archaeology</p> <p>Local Plan Policy 9: Listed Buildings</p> <p>Local Plan Policy 11: The Local and Wider Cultural Heritage of the Park</p>
<p><b>4. Materials</b></p> <p>What proportion of materials to be used in the development are from secondary or recycled sources, have low-embodied energy and are from sustainable and/or local sources?</p> <p>A. At least 3 out of the following 5 key elements must achieve a Green Guide rating (2008 version) of A+ to D:Roof;</p> <p>B. External walls;</p> <p>C. Internal walls (including separating walls);</p> <p>D. Upper and ground floors (including separating floors);</p> <p>E. Windows.</p>	<p>3 out of the 5 key elements achieve a Green Guide rating of A+ to D.</p> <p>100% of timber must be from FSC / PEFC sources.</p>	
<p><b>5. Natural heritage</b></p> <p>Has an assessment been made of the site's natural heritage and will the value of the site be protected or recreated to equal quality and/or enhanced?</p>	<p>Assessment undertaken and strategy produced by an ecologist (or equivalent) to protect or recreate existing ecological value.</p>	<p>Local Plan Policy 1: Natura 2000 Sites</p> <p>Local Plan Policy 2: National Natural Heritage Designations</p> <p>Local Plan Policy 3: Other Important Natural and Earth Heritage Sites and Interests</p> <p>Local Plan Policy 4: Protected Species</p>

<p><b>5. Natural heritage continued ...</b></p>		<p>Local Plan Policy 5: Biodiversity</p> <p>Natural Heritage Supplementary Planning Guidance contains essential further information</p>
<p><b>6. Enhancing wildlife</b></p> <p>There will be:</p> <ul style="list-style-type: none"> <li>A. No net loss of the special qualities of the Park in relation to habitats and species;</li> <li>B. A mixture of locally occurring species specified for planting and landscaping schemes;</li> <li>C. Any new links between habitats within the site or links to habitats outside the development boundary;</li> <li>D. An increase in important or sensitive habitats identified in the Local Biodiversity Action Plan (LBAP), either by creating or restoring ecological value (as assessed by an ecologist), or support for a species identified in the LBAP.</li> </ul>	A-D	<p>Natural Heritage Supplementary Planning Guidance contains essential further information</p>
<p><b>7. Energy efficiency</b></p> <p>What steps have been taken towards reducing CO2 emissions through energy efficient design for the proposed development?</p> <ul style="list-style-type: none"> <li>A. Minimising energy demand for the site through orientation and maximising passive solar gain;</li> <li>B. Maximising the thermal efficiency of individual buildings through thermal mass, insulation, natural shelter, and appropriate glazing;</li> <li>C. Minimising demand for water heating, space heating and cooling, lighting and power in individual dwellings through efficient equipment and controls.</li> </ul>	A-C	<p>Local Plan Policy 16: Designs Standards for Development</p>
<p><b>8. Renewable energy</b></p> <p>Has the energy demand for the development been calculated to determine:</p> <ul style="list-style-type: none"> <li>A. The appropriate low or zero carbon technology, for example wind, solar, hydro, photovoltaic's (PV), Combined Heat and</li> </ul>	A-C is required only where the development is 500m2 or over.	<p>Local Plan Policy 17: Reducing Carbon Emissions in Development</p>

<p><b>8. Renewable energy continued ...</b> Power (CHP), required to meet the required 15% CO2 emissions reduction?</p> <p>B. The % of total site energy demand that will be produced from on site renewable energy technologies?</p> <p>C. Meeting the remaining energy demand efficiently, for example non-renewable or waste powered district heating and cooling?</p>	<p>In such cases a 15% reduction in CO2 emissions is required to be met through the incorporation of on site low or zero carbon technologies (LZCT).</p>	<p>Reducing Carbon Emissions Supplementary Planning Guidance provides additional background information</p>
<p><b>9. Foul wastewater treatment</b> Will the development be connected to the public sewer? if not, has a sustainable waste water treatment system been designed to avoid unacceptable damage to the water environment?</p>	<p>Separate systems are proposed for foul drainage and surface water drainage.</p> <p>Foul drainage is proposed via a connection to the public sewer; or where no connection is available the system is designed and built to a standard to allow adoption by Scottish Water and can easily be connected to the public sewer at a later date.</p> <p>Discharges from private sewage systems will be registered or licensed by SEPA depending on the development size.</p>	<p>Local Plan Policy 12: Water Resources</p> <p>Sustainable Drainage Design Guide for Housing in the Countryside (Highland Housing Alliance) provides additional background information</p> <p>Water Resources Supplementary Planning Guidance contains essential further information</p>
<p><b>10. Flooding</b> What measures have been taken to ensure that the development will:</p> <p>A. Be free from significant risk of flooding;</p> <p>B. Not add to the area of land that requires flood prevention measures; and</p> <p>C. Not affect the ability of the functional floodplain to store or move flood waters?</p>	<p>Reference has been made to SEPA's Flood Risk Maps to determine whether a Flood Risk Assessment is required.</p> <p>In all cases the development site is demonstrated to be outwith the functional floodplain (ie there is not more than a 1:200 year flood risk).</p>	<p>Local Plan Policy 12: Water Resources</p> <p>Water Resources Supplementary Planning Guidance contains essential further information</p>

<p><b>11. Surface water runoff</b></p> <p>Which of the following localised strategies, for ensuring that runoff from the finished development does not exceed runoff from the previously undeveloped site, have been proposed and designed in accordance with the SUDs Manual C697 published by CIRIA?</p> <p>A. Prevention of runoff at source - through simple design measures on individual buildings, for example, minimising paved areas, to allow water to return to the natural drainage system as near to the source as possible and not to contribute to runoff;</p> <p>B. Source control of runoff rate/volume – through control of the rate/volume of runoff generated close to source, for example rainwater harvesting systems, green roofs and individual soakaways for buildings;</p> <p>C. Site control of water management – water is managed from several areas, for example roofs and parking areas, into one large soakaway or device such as an infiltration basin. This incorporates enhancing biodiversity and amenity, and is sized to allow incorporation of further developments in future.</p>	A and B	<p>Local Plan Policy 12: Water Resources</p> <p>Water Resources and Open Space Supplementary Planning Guidance contains essential further information</p>
<p><b>12. Water conservation</b></p> <p>How will the development sustainably meet the required water demands, including through the use of:</p> <p>A. Water efficient appliances such as dual flush toilets, aerating taps, and water efficient white goods?</p> <p>B. Rainwater collection for re-use?</p> <p>C. Green roofs?</p>	A	<p>Local Plan Policy 12: Water Resources</p>
<p><b>13. Waste and recycling</b></p> <p>Has suitably screened space been made available for the storage of waste and recyclables in or around each building, including:</p> <p>A. Space for sorting and storing recyclable materials?</p> <p>B. Space for general waste storage?</p> <p>C. Space for composting organic kitchen and garden waste?</p>	A-C	<p>Local Plan Policy 16: Design Standards for Development</p> <p>Local Plan Policy 31: Waste Management</p>



<p><b>14. Site management</b></p> <p>How will development of the site be undertaken in a manner which minimises disturbance to neighbouring properties and the environment, including addressing:</p> <p>A. Noise pollution?</p> <p>B. Light pollution?</p> <p>C. Air pollution?</p> <p>D. Construction waste?</p>	<p>Considerate Constructors Scheme is implemented to minimise noise, light and air pollution and a Site Waste Management Plan is put in place which identifies:</p> <ul style="list-style-type: none"> <li>• who will be responsible for resource management;</li> <li>• what types of waste will be generated;</li> <li>• how will the waste be managed - will it be reduced, reused or recycled?</li> <li>• which contractors will be used; and</li> <li>• how the quantity of waste generated will be measured.</li> </ul> <p>Key sources of potential disturbance and pollution are identified and mitigation measures put in place.</p>	<p>Local Plan Policy 31: Waste Management</p> <p>Considerate Constructors Scheme provides additional background information</p>
<p><b>15. Transport</b></p> <p>How does the development proposal make a positive contribution towards the improvement of the sustainable transport network within the Park by:</p> <p>A. Reducing car dependency?</p> <p>B. Promoting sustainable transport modes?</p> <p>C. Creating or linking to existing sustainable travel modes including the core path network, safe routes to schools and workplaces by cycle or pedestrian, public transport?</p> <p>D. Reducing the need to travel?</p> <p>And has this been demonstrated through a Transport Assessment where transport impacts are considered to be significant?</p>	<p>Positive impacts are demonstrated on A-D</p>	<p>Local Plan Policy 29: Integrated and Sustainable Transport Network</p>

**16. Pedestrians and cyclists**

What provision is made for secure cycle storage in new buildings and at associated local facilities including transport hubs?

For residential development, the design enables inclusion of external cycle storage space, for example in private garden area/ garages, or in the case of flats or dwellings of multiple occupation, secure communal cycle storage is provided.

For non-residential development, secure cycle storage is provided on site.

Local Plan Policy 29: Integrated and Sustainable Transport Network

**17. Efficient use of land and existing buildings**

How does the design ensure that:

- A. Disturbance to soils is minimised for example through minimising required earthworks?
- B. Where appropriate demolition materials will be re-used on site, rather than transported off site as waste materials?
- C. Existing redundant and derelict buildings are sympathetically converted and/or restored?

A-B

C is required where derelict and redundant buildings exist on the development site.

Local Plan Policy 27: Conversion and Re-use of Existing Traditional and Vernacular Buildings

Conversion and Re-use of Existing Traditional and Vernacular Buildings Supplementary Planning Guidance provides additional information

**18. Design for flexibility**

Has flexibility been designed into all units to provide adaptability to changing needs?

For residential developments:

- A. Has design to Lifetime Homes Standards been adopted?
- B. Has infrastructure been installed to allow for home working, for example telephone/Wi-Fi for all developments?
- C. Does building structure and position allow for future extension?
- D. Have construction techniques been used which enable internal walls to be easily removed or re-positioned to create new spaces?

A-B required for residential developments.

C-D required for non-residential developments.

Local Plan Policy 16: Design Standards for Development

Local Plan Policy 27: Conversion and Re-use of Existing Traditional and Vernacular Buildings

Conversion and Re-use of Existing Traditional and Vernacular Buildings Supplementary Planning Guidance provides additional information

<p><b>19. Private amenity space</b></p> <p>Is there provision for private amenity space, for example private garden, balcony, roof terrace or patio, or a communal garden courtyard which is easily accessible for occupants of designated properties, and does the size and type of area provided allow for:</p> <ul style="list-style-type: none"> <li>A. All occupants to sit outside at once?</li> <li>B. Safe access by those using wheelchairs or mobility aids?</li> <li>C. Growing fruit or vegetables?</li> <li>D. Composting of kitchen and garden waste?</li> <li>E. Drying washing?</li> </ul>	A-E	
<p><b>20. Accessibility of community facilities</b></p> <p>How many miles is the development from the following facilities:</p> <ul style="list-style-type: none"> <li>A. Health facilities, such as a surgery or pharmacy?</li> <li>B. Education facilities, such as a crèche, primary and secondary schools?</li> <li>C. Shop or Post Office?</li> <li>D. Bank or cash machine?</li> <li>E. Leisure facilities, such as a community centre or indoor sports facility?</li> </ul>	State approximate distances from the development to the facilities listed A-E.	<p>Local Plan Policy 26: Retail Development</p> <p>Local Plan Policy 29: Integrated and Sustainable Transport Network</p> <p>Local Plan Policy 34: Outdoor Access</p>

Whilst it is important to ensure new buildings are designed and built in ways which achieve high environmental standards, there are also a lot of opportunities for achieving much better environmental standards in existing buildings. These buildings are by their nature, stores of embodied energy. These opportunities can lead to significant reductions, not only in energy and water use, and therefore carbon emissions, but also in associated running costs.

Largely, the same principles apply to improving the sustainability of an existing building as to the construction of a new building. However, with existing buildings the biggest gains are usually to be made through addressing the

issue of resource efficiency, for example the amount of energy and water consumed by users of the building. Gains can also be made by improving the quality of life of those using the building and their neighbours, and in protecting and enhancing local wildlife.

The following section sets out guidance on these issues, looking first at resource efficiency including energy, water, waste and materials, and then at the natural environment around your home.

# 4

## Improving the sustainability of existing buildings

- 4.1 Resource efficiency**
- 4.2 Conserving and enhancing the natural environment**
- 4.3 Planning permission**

## 4.1

### Resource efficiency

A simple way of looking at the issue of resource efficiency is to think about it as a series of steps to follow. Steps lower down the chain shouldn't be undertaken without first addressing the step above it – this is known as a Hierarchy.

## (A) Energy

An Energy Hierarchy, which follows the series of steps promoted by the Energy Saving Trust, would include:

- reduce the amount of energy used, for example insulation, draught proofing, efficient appliances;
- generate your own energy using renewable energy technologies;
- responsibly source any remaining energy needed, for example buy through green tariffs.

Further information on energy efficiency, energy generation and grants can be found at:

- [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)
- [www.carbontrust.co.uk](http://www.carbontrust.co.uk)
- [www.sbsa.gov.uk](http://www.sbsa.gov.uk)
- [www.cat.org.uk](http://www.cat.org.uk)
- [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)
- Wind energy [www.bwea.com](http://www.bwea.com)
- Energy Generation Supplementary Planning Guidance, CNPA

## (B) Water

For a Water Hierarchy, the same principles would also apply;

- reduce the amount of water used, for example, using low flow appliances, collecting rainwater;
- reduce the amount of wastewater requiring treatment, for example use grey water from showers/baths for flushing toilets, watering gardens, washing cars;
- treat surface water locally, for example allow rainwater to drain away naturally by using permeable surfacing for paths and driveways;

Further information on sustainable drainage options, water conservation and rainwater harvesting systems is available from:

- Green roofs [www.ciria.org.uk](http://www.ciria.org.uk)
- SUDS manual [www.ciria.org.uk](http://www.ciria.org.uk)
- Sustainable Drainage Design Guide for Housing in the Countryside, Highland Housing Alliance
- Regulations and habitat enhancement [www.sepa.org.uk](http://www.sepa.org.uk)
- Recycling rainwater and grey water [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

## (C) Waste

The Waste Hierarchy principles are:

- prevention – avoid making waste and reduce waste, for example plan your project carefully to avoid over ordering materials;
- re-use 'waste', for example use construction 'waste' such as timber or bricks on site for creating paths, or raised beds in the garden;
- recycle or recover – recover value from products when they reach the end of their lives, for example composting or recycling;
- disposal – following the above steps should mean there will be little left which requires disposal.

Information on household waste and recycling including identifying what can be recycled and where can be found at:

- [www.wrap.co.uk](http://www.wrap.co.uk)
- Composting [www.wasteawarescotland.org](http://www.wasteawarescotland.org) and [www.soilassociation.org](http://www.soilassociation.org)

Advice on managing construction and demolition waste is available from:

- [www.constructingexcellence.org.uk](http://www.constructingexcellence.org.uk)
- [www.ice.org.uk](http://www.ice.org.uk)
- [www.aggregain.org.uk](http://www.aggregain.org.uk)

## (D) Materials

There is a growing range of sustainable construction materials available. Advice on selecting and specifying sustainable construction materials is available from a variety of sources including:

- [www.greenshop.co.uk](http://www.greenshop.co.uk)
- [www.greenspec.co.uk](http://www.greenspec.co.uk)
- [www.aecb.net](http://www.aecb.net)
- [www.livingethically.co.uk](http://www.livingethically.co.uk)
- [www.greenbooklive.com](http://www.greenbooklive.com)

Information on the embodied energy of construction materials can be found at:

- <http://people.bath.ac.uk>
- [www.forestry.gov.uk](http://www.forestry.gov.uk)

Timber specific information is available from:

- Forestry Commission Scotland  
[www.forestry.gov.uk](http://www.forestry.gov.uk)
- Green Oak in Construction  
[www.trada.co.uk](http://www.trada.co.uk)
- Centre for Timber Engineering  
[www.cte.napier.ac.uk](http://www.cte.napier.ac.uk)
- Central Point of Expertise in Timber (CPET)  
[www.proforest.net/cpet](http://www.proforest.net/cpet)
- Using Local Timber – Contributing to Sustainable Construction – Guidance for North Scotland, Forestry Commission Scotland, Cairngorms National Park Authority, Moray Council, Aberdeen City Council, Aberdeenshire Council and The Highland Council.

Consideration should also be given to the materials used for decoration and furnishing. Up to 90 per cent of the internal surface area of a building may be covered in synthetic petrochemical based coverings, and studies have also shown that the indoor environment can be much more polluted than the external environment as a result of some of these materials. Choosing sustainable materials will help to reduce this pollution.

For example, using water-based paints and finishes, which are low in volatile organic compounds (VOCs), will help buildings breathe thereby help to regulate moisture and reduce mould, and it's easier to clean your brushes.

Sustainable options for carpets and floor coverings include natural products such as linoleum, cork, rubber, grasses, straw and bamboo.

### Further sources of advice

There are various sources of advice on this topic, including a leaflet produced by the Scottish Building Standards Agency (SBSA) aimed at those seeking to improve the sustainability of their homes –

[www.sbsa.gov.uk/homeimprovements](http://www.sbsa.gov.uk/homeimprovements)

This is supported by more detailed guidance on the website which covers a wide range of topics, including:

- energy efficiency;
- roof insulation;
- draught-proofing;
- secondary glazing;
- kitchens and bathrooms;
- central heating;
- conservatories;
- gardens.

## 4.2

### Conserving and enhancing the natural environment

There are many opportunities in, on, and around existing buildings to enhance opportunities for wildlife. Some of these are quick and easy, others take more time to plan and construct. In most cases some maintenance will be required – even if this is simply cleaning out bird boxes before the nesting season.

Some simple ideas include:

- install a water butt to provide water for your garden;
- use a composting bin or wormery for garden and organic kitchen waste;
- plant native species of trees, shrubs and flowers to encourage natural predators such as frogs and ladybirds which will keep the greenfly at bay;
- a pond or bog area will also encourage frogs, toads and insects;
- put up bird and bat boxes;
- give yourself a rest and encourage wildlife by letting an area of your garden go wild;
- lighting in gardens can be detrimental to wildlife especially birds and moths;
- use permeable surfaces for paths and parking to allow rainwater to drain away naturally.

#### Further sources of advice

Information and advice on the natural environmental of the Cairngorms National Park is available from:

- Biodiversity Planning Guidance Note for the Householder, CNPA (2005)
- Local Biodiversity Action Plan (LBAP) Project
- Natural Heritage Supplementary Planning Guidance, CNPA (2010)

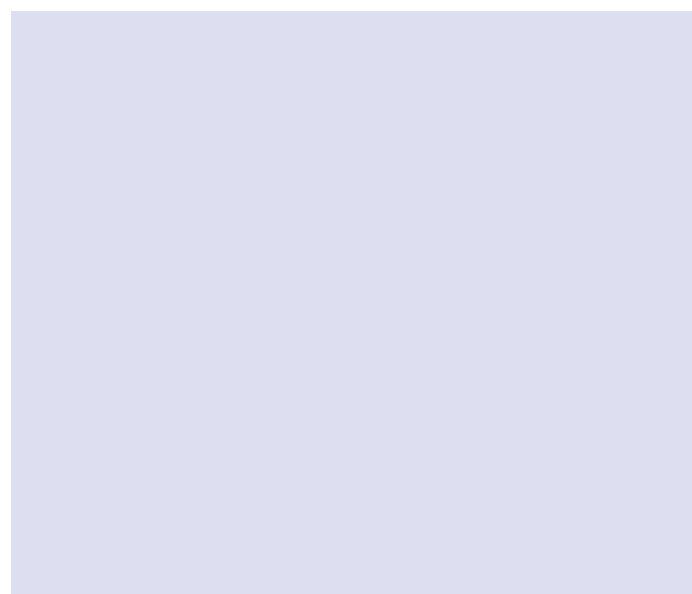
[www.cairngorms.co.uk](http://www.cairngorms.co.uk)

General information on the natural environment is available from a variety of sources including:

- SEPA Habitat Enhancement Initiative [www.sepa.org.uk](http://www.sepa.org.uk)
- Information on the use of native species in planting is available from Scottish Natural Heritage [www.snh.org.uk](http://www.snh.org.uk)
- Biodiversity by design - TCPA (2004) [www.tcpa.org.uk](http://www.tcpa.org.uk)
- Green roofs [www.ciria.org](http://www.ciria.org)

Information on organic gardening and grow-your-own is available from a variety of sources including:

- [www.soilassociation.org](http://www.soilassociation.org)
- [www.gardenorganic.org.uk](http://www.gardenorganic.org.uk)





## 4.3

### Planning permission

Some improvements to existing buildings may require planning permission, Listed Building Consent, and/or a building warrant. Works which can be undertaken without the need for planning permission are set out in the General Permitted Development Order [www.opsi.gov.uk](http://www.opsi.gov.uk). If in doubt, consult the relevant planning authority:

#### Highland Council

Telephone: 01463 702000

[www.highland.gov.uk](http://www.highland.gov.uk)

#### Moray Council

Telephone: 01343 563501

[www.moray.gov.uk](http://www.moray.gov.uk)

#### Aberdeenshire Council

Telephone: 08456 08 12 07

[www.aberdeenshire.gov.uk](http://www.aberdeenshire.gov.uk)

#### Angus Council

Telephone: 08452 777 778

[www.angus.gov.uk](http://www.angus.gov.uk)

#### Listed Buildings

Historic Scotland maintains a database of all Listed Buildings. To check if your building is listed, go to:

[www.historicscotland.gov.uk](http://www.historicscotland.gov.uk).

The relevant planning authority will also be able to advise on Listed Building Requirements.

#### Building Warrants

The Scottish Building Standards Agency (SBSA) website provides information on works which require a building warrant:

[www.sbsa.gov.uk](http://www.sbsa.gov.uk)

Advice on works requiring a building warrant can also be obtained from the Building Standards section of the relevant planning authority.

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14 The Square  
Grantown-on-Spey  
Moray PH26 3HG  
Tel: 01479 873535  
Fax: 01479 873527  
Email: [enquiries@cairngorms.co.uk](mailto:enquiries@cairngorms.co.uk)

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