# Yorkshire Dales National Park Design Guide



NATIONAL PARKS Britain's breathing spaces

## Contents

- 1.0 Introduction
- 2.0 Design in the Dales
- 3.0 Housing
- 4.0 Householder development
- 5.0 Commercial buildings
- 6.0 Converting a traditional building
- 7.0 Agricultural buildings
- 8.0 Signs and advertisements

### Appendices:

- A Materials
- B Planning for wildlife
- **C** Landscaping
- **D** Renewable energy
- E Glossary

# **1.0 Introduction**

- **1.1** Aim of the Design Guide
- **1.2** Area covered by the Design Guide
- **1.3** The National Park
- **1.4** Planning policy

## **1.1 Aim of the Design Guide**

The Yorkshire Dales is a unique place of great landscape beauty and ecological diversity, rich in iconic buildings and picture-postcard villages and towns. It is also a working landscape, shaped and sustained by farming, as well as a place of recreation for millions of visitors. Both activities underpin the local economy. The farmers, landowners and dales communities are the stewards of this distinctive heritage. The area is rightly protected for the benefit of all, as a National Park.

It is therefore crucial that new development fulfils the needs and expectations of residents, businesses and visitors without undermining the special qualities that make the Dales nationally important. This balancing act is addressed by the National Park's Local Plan, which sets out the strategy, and policies that guide decisions on planning applications.

This Design Guide is part of the Local Plan and is also a Supplementary Planning Document giving advice to those seeking planning permission on the form of development that is likely to be acceptable. It is also a material consideration in determining planning applications and appeals and should be read in conjunction with the design policies in the Local Plan.

The National Park Authority wants to see more innovative, imaginative and creatively designed development that makes a positive contribution to the rich built heritage of the National Park. That is why the guidance given here is not prescriptive. The guide is deliberately not a pattern-book or set of rules for how it should be done.

However, some designers who undertake commissions in the National Park are not familiar with the architecture and building traditions that make it such a special place. Others have asked for more clarity on what is expected from designers. The guide gives freedom for innovation imagination and creativity but still provides clarity and detail where needed. General advice is given at the beginning of the guide on what are considered to be key components of good design in the National Park context. The chapters that follow address the most common forms of development in the National Park. Each chapter is split into two sections – 'Design approach' and 'Design details'.

The Design approach section sets out the key principles that designers need to address to ensure their proposals are of the quality that the National Park Authority expects to see in planning applications. Designers with experience of working in the National Park, and with a good understanding of its distinctive building traditions, should be able to use these broad principles as a framework within which to design.

Those who are looking for more guidance on how to address design issues will find advice in the Design details section. This gives examples of good practice and successful case studies.

At the end of the guide are appendices containing detailed guidance on materials, planning for wildlife, landscaping and renewable energy that are common to all forms of development. At the end is a glossary of terms used in the document.



# **1.2 Area covered by the Design Guide**

The Local Plan and the Design Guide cover the whole of the Yorkshire Dales National Park within the boundaries designated in 1954. The map on the next page shows this area.

The western boundary of the National Park was extended in August 2016. This Guide has not been produced to address these areas specifically but much of the advice within the Guide is relevant to development in these areas.

The Yorkshire Dales National Park Authority is the planning authority for the National Park and is responsible for local planning policies and for dealing with planning applications within the Park.



Map of Yorkshire Dales National Park (2015 boundary in yellow).

## **1.3 The National Park**

National Parks contain the most beautiful, spectacular and dramatic countryside in the UK. They are landscapes of national importance and their designation gives them the highest status for the conservation of landscape and scenic beauty. They also provide fantastic opportunities for recreation and millions of visitors enjoy their special qualities every year.

The Yorkshire Dales National Park was designated in 1954 and is one of ten National Parks in England. It now extends to 841 square miles (2,179 sq km) of rural North Yorkshire, Cumbria and Lancashire.

#### **1.3.1 National Park Statutory Purposes and duty**

The Statutory Purposes of English National Parks are set out in Section 61 of the Environment Act 1995.

These are:

- To conserve and enhance the natural beauty, wildlife, and cultural heritage of the national park
- To promote opportunities for the understanding and enjoyment of the special qualities by the public

The purposes are underpinned in law by the Sandford Principle that the first purpose should take precedence over the second in cases of irreconcilable conflict between the two.

National Park Authorities also have a duty under Section 62(1) of the Environment Act:

• In taking forward the national park purposes, [to] seek to foster the economic and social well-being of local communities within the National Park

The Statutory Purposes and the duty are taken into account in all planning decisions within the Park. The Park has special qualities that justify its designation and which make it a distinctive place. Development proposals are considered against the degree to which they affect the special qualities of the Park.

Although the National Park landscape enjoys the greatest protection, it is a home and workplace to 20,000 people and cannot be preserved in aspic if it is to thrive. In most cases, development can be managed to ensure that new building ideally has a beneficial or at worst a neutral impact. This guide recommends an approach to designing new development based on understanding the context of the site and responding to it in a positive way.

This section of the guide gives a brief description of the special qualities that are most likely to be affected, positively or negatively, by new development. A more complete list of the special qualities can be found in the National Park Management Plan (see 1.4.3 in this chapter and the National Park Authority's website: <u>www.yorkshiredales.org.uk</u>)

#### 1.3.2 Landscape

The area straddles the Pennines, the backbone of England. The geology, natural processes and human activity have created a hugely varied landscape of dramatic features and beautiful views.

The area's unique landscape character is a combination of many elements. They include managed moorland, pastures and valley grasslands, small woodlands, dispersed villages and farmsteads, local building materials, strong field patterns, drystone walls and field barns.

Although the whole area shares some of these characteristics, the Park is dissected by dales that have their own defining characteristics and features.

In the north, the landscape is predominantly characterised by heather moorland on the fell tops with walls and field barns punctuating the lower fells. In the dale bottoms are flower rich meadows with small tightly knit villages. In the south and west, the character is heavily influenced by the underlying limestone alongside pastureland on the lower slopes.

Successful designers address the landscape characteristics of the dale when producing plans. The best way to do this is to carry out a context appraisal of the site. See Chapter 2 for guidance on how to do this.



Askrigg in Wensleydale

#### 1.3.3 Wildlife

Almost 30% (50,000 hectares) of the Yorkshire Dales National Park is made up of nationally and internationally important wildlife habitats – the largest area of any National Park.

Rich and diverse wildlife and habitats are an important characteristic of the National Park. These include flower rich hay meadows and pastures which are scarce nationally, rare limestone habitats, extensive areas of moorland that are internationally important for wildlife and carbon storage, small areas of broadleaf woodland, nationally important populations of a number of bird species, rare lime loving plants, scarce invertebrates and important mammals.



Limestone pavement

Modern building practices can have a negative effect on wildlife as the trend, sometimes required by regulation, is for sealed buildings. This can result in the loss of important habitat for wildlife, such as birds and bats, that rely on roosting and nesting in buildings. It is important to protect wildlife habitats during construction and to include opportunities for improving wildlife habitat in development proposals. Finding out what wildlife is present and then using this information in designing and planning development is vital.

The Yorkshire Dales has a relatively low proportion of tree cover. The felling of small areas of woodland on or close to development sites is one of the biggest threats. This is often influenced by the position of a new building, its height and the arrangement of windows. New development provides an opportunity to plant trees and new areas of

native woodland in places and quantities that are sympathetic to the character of the landscape and will also benefit wildlife.

The open upland is an important habitat for ground nesting birds, and other species reliant on blanket peat, moorland and rough pasture. To conserve the wildness and tranquillity of these areas, planning policies limit development to works essential for their long term management.

#### 1.3.4 Cultural heritage

The National Park's cultural heritage is based on an exceptional range of archaeology, distinctive traditional architecture, livestock farming with distinctive sheep breeds and upland cattle rearing, the remains of former rural industries, numerous small, attractive villages and hamlets as well as scattered farmsteads.

One of the things, which make the Yorkshire Dales a distinctive place, is the unique built heritage of the area. Local building traditions and the predominant use of local stone in construction have produced a very distinctive dales architecture, which is described more fully in this guide. The area also has some distinctive building types such as the traditional dales farmhouse with attached barn and various types of stone field barn. It is important to conserve this heritage, not just for the sake of the culture and identity of the area, but also for the benefit of visitors and the local economy, which depends on them.

This distinctive environment can be threatened by alterations to existing buildings that erode their traditional character and by new development that does not carry on, or take inspiration from, local building traditions. Alterations and new buildings should reinforce this local distinctiveness. This does not mean that the National Park should be stuck in the past and it is one of the key aims of this guide to encourage more innovative design in new development.



Traditional barn in hay meadow, Swaledale

New development and land improvements can also endanger the rich archaeological heritage of the area. Development proposals need to avoid removing evidence of former farming and industrial practices or the enclosure of common land, taking away barns and walls, altering limekilns and sheepfolds and carrying out intrusive works to the network of ancient routes.

#### 1.3.5 Enjoying the experience of being here

Most visitors who spend time in the National Park experience a range of emotions, triggered by its beauty, grandeur and other less tangible qualities. These qualities help to create the unique spirit of place and it is important that they are protected.

The key qualities that designers need to consider are those associated with the tranquillity, remoteness and solitude of large areas of the Park; the expansive views of a beautiful natural landscape influenced by man over many generations; and the dark night skies that suffer little from light pollution.



Sunset over Ingleborough

Development that would bring noisy activity, including traffic, into the quieter and more exposed upland areas of the Park should be avoided. Proposals that would introduce new buildings, parking and roads into such areas need to be carefully designed as such areas are as sensitive to visual intrusion as they are to noise.

Light from modern agricultural buildings and external lighting can have a significant and intrusive effect on the landscape at night. These impacts can often be minimised through careful siting and design of new buildings, landscape planting and use of light fittings that prevent light spill.

## **1.4 Planning policy**

#### **1.4.1 National Planning Policy Framework**

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how they are to be applied. It establishes the purpose of the planning system as contributing to the achievement of sustainable development. The NPPF provides the framework for producing the National Park's Local Plan as well as for decisions on planning applications.

At the heart of the NPPF is a presumption in favour of sustainable development. In seeking to achieve sustainable development, the planning system has three roles: economic, social and environmental. These roles are mutually dependent and "economic, social and environmental gains should be sought jointly and simultaneously through the planning system". [<sup>para8</sup>]

Good design is highlighted in the NPPF as an important aspect in delivering sustainable development. The NPPF also attaches great weight to conserving the landscape of National Parks, giving them "the highest status of protection in relation to landscape and scenic beauty." [<sup>para115</sup>]

The NPPF includes guidance on the need for good design and what it should include – see Chapter 7 [<sup>paras 56-68</sup>]. Proposals that demonstrate outstanding or innovative design that improves the character and quality of an area will be given great weight whereas permission will be refused if the opportunity for improvement is lost through poor design.

#### 1.4.2 The Local Plan

The Local Plan sets out the National Park Authority's strategy for managing the development of land. The law requires planning authorities to determine planning applications in accordance with the policies in the Local Plan unless there are good, material reasons to do otherwise. Local Plans need to deliver sustainable development by balancing the need to accommodate development with the need to ensure it is carried out to the right standards and without harm to the environment and communities. All planning authorities are required by law to produce a Local Plan for the whole of their area that takes account of national planning policy guidance issued by the Government and consultation responses during its preparation.

The Local Plan has a diverse range of planning policies that apply to new development. The Local Plan and other local planning policy documents can be viewed or downloaded from the National Park Authority's website:

http://www.yorkshiredales.org.uk/living-and-working/planning-policy-section/localplanning-policy



#### **1.4.3 The National Park Management Plan**

National Park Authorities are required by law<sup>1</sup> to produce a management plan for their area and review it every five years. The Yorkshire Dales National Park Management Plan 2013-18 sets out the

vision, strategic policies and outcomes for the National Park over the long term. It ensures that National Park purposes are being delivered.

It is a plan for the whole National Park – its communities, businesses, visitors and the many organisations that operate here. It requires all who have an interest in the National Park to work together to achieve its aspirations. The Government expects public agencies and authorities active within, or bordering, a National Park to co-operate in the achievement of the National Park Management Plan's objectives.<sup>2</sup>

The National Park Management Plan is a material consideration when determining planning applications. A copy can be viewed or downloaded from the National Park Authority's website:

http://www.yorkshiredalesmanagementplan.org.uk/



1 Section 66 Environment Act 1995 2 'English National Parks and the Broads : UK Government Vision and Circular 2010'

# **2.0 Design in the Dales**

- 2.1 Design approach
- 2.2 Function
- 2.3 Context
- 2.4 Design quality

## 2.1 Design approach

The Government recognises that "great weight should be given to conserving landscape and scenic beauty in National Parks ... which have the highest status of protection in relation to landscape and scenic beauty." [NPPF para.115].

It follows that new development should demonstrate a design quality that reflects this status and which enhances the visual quality of the National Park.

Attempting to reduce good design to a tick box list of principles is problematic. Design can be seen as a product of creativity, the application of technology and our response to it. If the design of new development is to be successful, there is a range of issues that need to be resolve. It is helpful to consider these as components of sustainable development, which is at the heart of the UK's planning system.

#### Sustainable development

The United Nations has defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs.<sup>1</sup>

The Government's National Planning Policy Framework (NPPF) defines the purpose of the planning system as contributing to 'the achievement of sustainable development." Good design is identified in the NPPF as "a key aspect of sustainable development" which is "indivisible from good planning".<sup>2</sup>

Design is therefore firmly within the ambit of planning and a material consideration in determining planning applications. It is a legitimate and necessary concern of the planning authority.

The NPPF sets out three dimensions to sustainable development and the role the planning system should perform to deliver them:

- An **economic** role contributing to a strong, responsive and competitive economy, by releasing land for development and supporting growth and innovation
- A **social** role supporting strong, vibrant and healthy communities, through the supply of housing, accessible local services and by creating a high quality built environment
- An **environmental** role protecting and enhancing the natural, built and historic environment; minimising waste and mitigating and adapting to climate change

In the Yorkshire Dales National Park, development will be sustainable where it delivers these dimensions without harming the landscape and scenic beauty of the Park.

In simple terms, a successful, sustainable development will satisfy the purpose or function for which it is designed as well as fitting in to the National Park context. The need to fit in requires the designer to understand the context and respond positively to it. This does not necessarily mean that new development has to copy what is there at the moment – challenging, contemporary designs can add interest and contrast positively with their context. The key to a successful design will be an emphasis on quality.

In assessing proposals for new development, the National Park Authority will look at how successful the design is in addressing these three elements:

- **Function** the design fulfils its purpose without adverse effects on others or the environment. Buildings and spaces should be designed to be inclusive, safe, secure and pleasant
- **Context** the design responds positively to the landscape, the built environment and to neighbours

• **Quality** – the design is visually attractive, stimulating, uses good quality materials and finishes effectively, and enhances the visual quality of the area

1 UN Resolution 24/187 2 National Planning Policy Framework para.56

## 2.2 Function

For a design to be successful, it needs to be useful. Many of the functional requirements of designing a building fall outside the planning remit. For example, the usefulness of internal spaces in a building, or how well it performs against the technical requirements of the Building Regulations, are not defined as material considerations.

The functional requirements that **do** fall within the planning remit include:

Environmental performance

- Does the development minimise the consumption of resources? (e.g. energy efficiency, water recycling)
- Does it minimise pollution? (e.g. emissions, noise, visual impacts)
- Is it flexible and resilient to the effects of climate change? (e.g. flooding, extreme weather)

Social performance

- Is the development inclusive?
- What impact does it have on neighbouring uses?
- How does it affect highway safety?
- Is it safe and secure?

Designers are expected to demonstrate that their proposals will function efficiently and effectively over time. Too often, key functional elements such as energy efficiency, the use of renewable energy technologies, designing out crime, providing safe access for all users, storage, recycling, garden or leisure space, etc are left to be added towards the end of the design process. This often results in a development that has many good points (e.g. well designed buildings) but is let down because the details have not been considered and incorporated from the beginning.

The NPPF places importance on inclusive design (para. 57) and developers are expected to show how they have considered this. Inclusive design responds to the local character and sense of place, allows access for all users, avoids creating problems for neighbours or the wider area and does not discriminate in the quality of design and finish across public and private spaces or between private and social housing.

Although the functional element is critically important, it does not mean that the building should be designed from the inside out or that it should purely be a product of its function. Good design takes account of other factors.



New farm building at Bushy Lodge Farm, Starbotton. A functional building that responds to its context. Designer/builders: C,K,C & P Lister. Photo credit: D Oldridge



Archimedes screw turbine, Bainbridge - functional in appearance.

## **2.3 Context**

New development in the National Park can only be considered to be sustainable if it does not harm what is special about the Park; in essence, its landscape, wildlife, cultural heritage and other special qualities.

New development should "establish a strong sense of place", "respond to local character and history and reflect the identity of local surroundings and materials".<sup>4</sup>

The National Park has a very distinctive built heritage and new development should continue to reinforce this special quality. Good design in the National Park therefore needs to be sympathetic to its **context** and reinforce **local distinctiveness**.

This section of the guide gives advice on how designers can approach context and distinctiveness.

#### What do we mean by context?

Context is the local character and setting of the surroundings of the site. It is the character of the landscape, the village or cluster of buildings, the site and its environs. The character of these places is formed by the shape and use of the land, trees and vegetation, local building traditions and materials, and their development throughout time.

The landscape and natural environment has changed through time due to weather and climate changes, but also as a result of man's influence. The built environment has developed as a result of a wide range of factors that include social change, developments in farming practice and building technology.

Understanding the site context and how it has developed is the first step towards producing a design that responds to it. The designer can work towards this by following a step-by-step approach, beginning at the landscape level and stepping down in scale to the site level.

By following this stepped approach, a context appraisal can be built up:



#### Step 1: Landscape

The context appraisal begins with a look at the position of the site in the landscape and an assessment of which features define the landscape.

Each dale is different – the shape of the valley, the amount and distribution of tree cover, the number, type and position of buildings, walls etc. Where the site sits in the landscape will affect how it is developed. For example: the height or size of buildings, the space between them, the need for landscape planting, the colour and type of materials, and how access, lighting and infrastructure requirements are treated. All of these elements of a development can have a positive or negative impact on the wider landscape depending on how sensitively they are treated.

Although the landscape step looks at the wider picture, design decisions about relatively minor elements of a development can have a major impact.



Swaledale: a landscape sensitive to inappropriate development. Consider the potential impact on this landscape of a poorly designed building, extensive external lighting, poor use of materials, over-engineered access roads etc.

Considering the position of the site in the wider landscape is as important for sites within villages and towns as it is for sites in the open countryside. Dales settlements tend to nestle within the landscape – they respond to the shape of the land, often in places that are sheltered from the weather. Development on the edge of a village, or on open land within a village, need to respect the shape and pattern of the settlement and how it has developed.



Buckden – the village 'nestles' on the slopes of a 'U' shaped valley.

A site in a prominent position in the landscape may require a more considered response that harmonises with the landscape rather than draws attention to it.

Earth-sheltered or partially underground buildings may offer a solution in some locations. Alternatively, a building with a roof profile that draws inspiration from, or harmonises with, the shape of the land may be better. The use of green roofs, or materials that blend in with the colours and features of the wider landscape can soften the appearance of larger roof slopes.





This building is Scargill Chapel, a Grade II\* Listed Building designed by W Pace and built in 1959. Scargil Chapel is part of a complex of older and more modern buildings that sit within Upper Wharfedale, near Kettlewell. The design is wholly modern, the shape and scale of the roof is unusual and the building occupies a very prominent position in the landscape. Nevertheless, the building has an obvious affinity with the landscape and local building traditions. It is clearly recognisable as a church as a result of its perpendicular form and the cedar shingle roof covering. Weathered timber panels, shuttered concrete, lead and limestone, help to anchor the building in a landscape of limestone screes, drystone walls and stone barns. The building is a positive and innovative response to its context.

#### Step 2: Locality

A step down from the landscape level involves a look at the locality of the site, which could be the town or village, or part of the dale in which the site is situated.

Understanding the locality of the site involves looking at:

- how buildings are arranged and orientated
- the spaces between buildings
- the grain or density of development
- plot sizes
- access and car parking arrangements
- the general size, footprint and height of buildings

It may be useful to use a 'figure and ground' drawing to map out the relationships between buildings and spaces.

For example, if the predominant pattern of buildings in the village is linear, rather than dispersed or clustered, then development of a site in the village, or on its edge, is more likely to fit in if it follows that pattern.

Many dales villages are also characterised by a strong tradition of orientating buildings on a west-east axis so that only plain gable ends are exposed to westerly weather systems. New development that does not follow the established pattern can risk undermining the character of the village.

New development, large or small, should respect its neighbours and neighbourhood. A look at the immediate surroundings of the site should include adjacent land uses, the layout and form of buildings (including height, scale and massing), building styles and architectural details, the treatment of boundaries and spaces and the type of materials used.

The design of new buildings should be informed by the characteristics of traditional buildings in the area. This is not to say that new building design should copy the old but that it should have some relationship to it if local distinctiveness is to be preserved. See Local Distinctiveness after Step 3: Site.

#### Step 3: Site

The final step involves a look at the site itself and the features that will influence where buildings, roads, gardens, parking, infrastructure etc will be sited.

The position of drainage and other site services, including access to the highway, changes in ground levels, site geology and hydrology are the obvious factors affecting site layout. However, some of the following considerations are often overlooked.

Sites within Conservation Areas or adjacent to listed buildings need to take account of the historic development of the site and its surroundings. A thorough assessment of what is historically significant about the site will be necessary if the site forms part of the setting or curtilage of a listed building, part of a historic settlement pattern or building group, or if it includes archaeological remains.

The site may include features that are not protected but could be retained e.g. traditional structures, mature trees, drystone walls etc. This is almost always beneficial as they help to reduce the sense of newness of newly built development or to visually anchor buildings in the landscape or street scene. For example, a wall in front of a building will reduce the perception of its height and mature vegetation can help to frame or soften the appearance of new buildings.

The arrangement of new buildings and spaces should be informed by the position of buildings, walls, trees, hedges etc. around the site boundary as they may provide shelter or screen car parking or a solar panel array.

A sun-path diagram of the site will also inform how solar gain can be maximised to windows, gardens and solar panels. Heat loss can be reduced by minimising glazing on north-facing elevations and, if western elevations can be blank masonry, sheltered or even earth bunded, the impact of prevailing weather can be mitigated.



This new housing development at Aynham Close Grassington retains existing trees on the boundary to help to soften the appearance of new buildings. New planting will eventually become established to provide a soft edge to the development.

Most new developments within the National Park will require landscape planting. It can be helpful to look at the site before considering where buildings will be sited to understand where planting will be most effective and to provide space for it. In other words, plan for landscaping from the outset rather than trying to fit it in at the end.

#### Local distinctiveness

The towns and villages, and individual traditional buildings within the National Park, are highly distinctive – the visitor notices the difference in the built environment on travelling into the Park. Within the Park there are also distinct differences between different localities. A context appraisal of the site will help the designer pick up design cues but this section draws attention to a number of anchoring characteristics that tend to make dales buildings distinct from other building traditions.

In general, vernacular buildings in the Dales tend to be simple, unfussy, honest, robust, and functional. Building traditions in the Park are, in the main, a product of three influencing factors: the need to respond to the Pennine climate, the availability and limitations of building materials, and the purpose or function of the building e.g. house, barn, etc.

Traditional architectural features worth noting are:

- a narrow, rectangular plan form
- simple double pitched roof profile at a shallow pitch of between 28<sup>o</sup> and 32<sup>o</sup>.
- a high solid-to-void ratio
- simple treatment of eaves and verges
- low, squat internal chimney stacks straddling the ridge and positioned at the gable ends
- small windows with deep reveals, mullioned windows and window surrounds

Although these features are typical, there are many variations, often in relation to a particular part of the National Park. For more details on these features, see the chapters on Housing, Commercial buildings, Converting a traditional building and Agricultural buildings.

A highly distinctive feature of the Dales is the pattern or layout of buildings within a settlement or group and their orientation. Some settlement patterns are influenced by natural or manmade features (e.g. linear settlements), for defence (e.g. around a village green), or to avoid wasteful incursion into surrounding agricultural land.

Orientation usually reflects the direction of prevailing weather patterns.

The major unifying factor, and most visually distinctive element, is the uniformity of materials employed in traditional building.

The materials used are usually locally sourced, natural materials. Limestone and sandstone are the main walling materials, with ragstone (slate) found in the Cumbrian parts of the Park. Sandstone slate is the predominant roofing material, although different materials (e.g. Lakeland slate, Burlington slate,) may predominate in localised areas.

Particular attention also needs to be given to the way the stone is laid (in courses or randomly), the thickness of courses, the composition and colour of cement, whether the stone is worked or dressed and the type and size of quoins.

For detailed advice on materials, see Appendix A.

## 2.4 Design quality

The visual appearance of a building and its effect on people and their well-being is an important element in good design.

The attractiveness of a building can, to a certain degree, be subjective ('in the eye of the beholder'), however a truly successful design will also be well executed. The designer will not go far wrong by following the architectural principles of scale, proportion, hierarchy, emphasis, harmony and interest.

Although traditional dales buildings tend to share some common anchoring characteristics, there can be a wide variation in building styles and details. New building should respond to these fundamental characteristics and also take advantage of creative and stimulating architecture.

One of the defining characteristics of the National Park is the homogeneity of its built environment. This is due to the survival of old building traditions, the use of a limited palette of materials and the fact that modern building materials, techniques and architectural trends have made little incursion into this remote rural area.

However, this should not constrain modern designers from producing imaginative, original designs. The National Park Authority does not expect designers to slavishly copy the old but through this Guide, and its Design Award scheme, seeks to encourage stimulating and innovative design. There is considerable scope for innovative design that celebrates and responds positively to the landscape and built heritage of the National Park.

Innovative design in the National Park can involve contemporary architecture, the use of new or different materials and technologies, or solving a design problem in a different and creative way.

The history of design shows that the most successful innovations are often the result of engaging with the traditions and achievements of the past. The challenge for the designer working in the National Park is to produce a confident, innovative design that functions well, respects its context and is visually attractive.



Visually attractive : The Thornley Studio building at Sedbergh School by JMP Architects for Governors of Sedbergh School



A quirky design : the bus shelter in YDNPA car park Grassington.

# **3.0 Housing**

- 3.1 Design approach
  - 3.1.1 Key factors
  - 3.1.2 Sustainable design
  - 3.1.3 Design quality
- 3.2 Design details
  - 3.2.1 Housing layout
  - 3.2.2 House design

## 3.1 Design approach

This section provides advice on new-build housing development – individual house design and the layout of housing sites.

#### 3.1.1 Key factors

The National Park Authority is keen to ensure that sufficient new housing is built to meet local housing needs as this is important for the long term sustainability of communities within the Park. The challenge for the Authority, and designers, is to ensure that new development does not harm the special qualities of the National Park.

New development should not only fit with its context but also enhance the appearance of the area. Designers are encouraged to consider innovative and distinctive responses to the landscape, or village context of the site. The first step should be to carry out a context appraisal. See Chapter 2.

Although inspiration can be drawn from local building traditions and the landscape, it is not necessary to slavishly copy the past. The Authority does not wish to impose a one size fits all approach but encourages a site-specific response.

Clearly, there are some locations of such scenic, historic, or architectural importance that require a very sensitive approach to new development. Equally, there are other locations where there is scope for a bolder or more challenging approach. The emphasis in both situations should be on the quality of the design.

The key factors that the National Park Authority expects designers to focus on in designing new build housing are to:

- respond positively to the landscape and built context of the site
- respect and take inspiration from the building traditions and distinctive architecture of the area

- take full advantage from site features, surrounding landform, orientation, building design and materials, landscape planting, renewable energy and energy saving technologies, and sustainable drainage features to produce a sustainable home or housing development
- take full opportunity for new landscape planting and improving wildlife habitat
- minimise external lighting and incorporate design features to prevent unnecessary light spill to protect the dark skies of the National Park
- provide an inclusive, safe and accessible development that integrates well into the community



New houses being built at the rear of the Rose & Crown Inn at Bainbridge by Randall Orchard Construction

#### 3.1.2 Sustainable design

Elements of sustainable design that can be readily employed in new build housing schemes in the National Park include:

- making the best use of landscape and climatic conditions
- reducing energy consumption
- better management of rainwater run-off
- taking advantage of renewable energy sources
- improving the natural and human environment

Concentrating solely on energy efficiency measures, or renewable energy, will only be partially successful and so designers are encouraged to take a more holistic approach.

Integrating these measures early in the design process will result in a better design and fewer conflicts with other design requirements. For example, a solar panel array can be sensitively sited on ancillary structures, single storey offshuts, or mounted on the ground, rather than in a prominent position on the roof of a house.





Above and opposite: Ground mounted solar panels sited on rising land behind the house at Daggerstones, Healeagh. The array is not visible in the wider landscape. Architect: A Morroogh-Ryan Photo credit: J Potter.

#### Energy

Existing buildings consist of embodied energy arising from the previous manufacture of materials and construction activities. A starting point for developing a brownfield site should therefore be the retention and re–use of any existing buildings on the site. If that is not possible, then at least the materials should be retained and re-used/recycled in the new development.

Siting new houses in sheltered positions within the natural contours of the land, or where there is protection by trees, will help to reduce energy required to heat the building. Ancillary buildings such as garages can also be sited to shelter living accommodation.

New housing should follow solar gain principles to maximise natural light and solar energy opportunities. Maximising daylight reduces the need for artificial lighting and passive solar gain reduces the need for heating. The layout of housing sites should maximise the potential for

solar gain by orientating principal elevations to within 30° of due south. The main living and working spaces can be arranged with larger windows facing south where they can benefit from direct sunlight. Service rooms such as bathrooms, hallway or utilities can be located towards the north side of the property where only small windows or rooflights would be needed.

As a general rule, the more sun, the better, but obviously a balance needs to be struck with the constraints imposed by the local context. In many cases, large areas of glazing can be more easily accommodated on rear elevations away from public view.

Blank gable elevations that face west will help to protect windows to main rooms on the principal elevations from prevailing wind and rain. This should reduce energy consumption and weathering of window frames. Porches can provide shelter from the wind and rain and prevent heat being lost from main living spaces.

Incorporating high levels of insulation will help to minimise energy use and prevent extremes of temperature.

New development will need to meet the energy efficiency requirements of the Building Regulations. However, designs that go beyond national standards will given significant weight in the planning process.

#### **Renewable energy**

The most common renewable energy technologies installed in new housing developments are solar panels and air source heat pumps. Small scale hydropower installations, domestic wind turbines and wood fuel biomass boilers are more commonly used for individual houses in remote locations. However, these technologies, as well as ground source heat pumps, should be considered by housing designers, particularly on edge of village sites.

For information on these technologies, see Appendix D.

#### Water

Too much or too little rainfall can cause problems for residents of the National Park and changes in the climate may exacerbate the situation. Proposals for new housing development should demonstrate resilience to these factors and aim to reduce their negative effects. The supply of water to homes uses a significant amount of energy that contributes to generating the greenhouse gases which cause global warming. New housing development should be designed to minimise water consumption and manage rainwater to reduce flooding.

There are many villages within the National Park where homes, farms and businesses rely on private water supplies from local springs. In dry conditions, water resources can be severely restricted. Proposals for new housing in such locations will need to demonstrate that they can access an adequate water supply without a detrimental effect on that of others and that water consumption can be minimised.

Water use can be minimised by collecting rainwater and recycling grey water for use elsewhere, for example flushing toilets or watering the garden. The garden water butt is the simplest and cheapest way of collecting rainwater. Rainwater harvesting can reduce the demand on water resources as well as helping to manage the flow of surface water run-off.

#### 3.1.3 Design quality

It is important for new housing to reflect and reinforce local distinctiveness but this does not mean that all new development has to be a pastiche of dales vernacular. New build housing offers scope for designers to think creatively and produce innovative designs that function well, are visually attractive, and importantly, fit in with the locality.

Innovative designs are those which are truly outstanding and groundbreaking, for example in their architectural quality, use of materials, method of construction or the way they enhance the local environment. The design may have arisen as a result of addressing a particular issue, for example, minimising the impact of new housing on the landscape. An innovative design will still need to respond to the site context so that it does not appear at odds with its surroundings, that it has been imposed or helicoptered in.

Recent years have seen innovation in the design of housing which is partially or wholly below ground. This form of development can be appropriate where it appears as an organic response to the natural contours of the land.

Alternatively, contemporary eco or zero carbon houses incorporating materials such as straw bale walls, turf/sedum roofs and renewable energy technologies could be sustainable solutions in very sensitive landscape locations where off–grid solutions are required.

For more information on materials, see Appendix A. Details of house design are in the next section of this chapter.

## 3.2 Design details

This section provides more detailed guidance for designers who are less familiar with the Park or who require more advice on the quality of design expected by the National Park Authority. The towns, villages and dales of the National Park each have their own character, formed by a prevailing architectural style, building materials and the way in which buildings are arranged. This established pattern should give a cue to how new development can be laid out to reinforce the established sense of place.

#### 3.2.1 Housing layout

The layout is the arrangement of the streets, buildings, open space and landscape that make up a site or an individual plot. A good designer will look at the inter-relationship between all the elements rather than each characteristic in isolation. Buildings should have a positive relationship with the spaces around them, as well as connecting with the adjoining streets or landscape. Careful layout is important in achieving sustainable and attractive places.

#### **Context appraisal**

In developing the outline design, an analysis of the surrounding context of the housing site will help to define key features, opportunities and constraints that will influence the proposed development. See Chapter 2.

The shape of the land, layout of other buildings, positions of trees and hedges should all be used to tie the development to the site.

A context appraisal for a new housing development should consider the following:

#### Landscape

- How does the site or village sit within the wider landscape?
- What does the site or village contribute to the character of the wider landscape?

How should these factors influence the disposition of buildings, spaces, landscape planting, tall and low buildings, and renewable energy installations?

#### Locality

- What is the prevailing arrangement of buildings and spaces (grain of development) around the site? Is it high or low density, loose knit with large spaces, linear or clustered, in narrow burgage plots with outbuildings behind?
- What defines the local building types? Are buildings terraced or detached?
- What is the plan form of surrounding buildings and how much space is around them?
- Is there an established building line? Is it regimented or staggered?
- What is the predominant orientation of buildings? Do they face the street?
- Do buildings front the pavement or have a front garden?

#### Site

- Are there important views into and out of the site?
- What is the nature of the land? Is it flat, sloping or a mixture?
- Are there important trees, hedgerows or drystone walls?
- Is existing car parking located on plot, on the street or in communal areas?
- Is there existing vehicular and pedestrian access?
- Are there any distinctive features that can be retained and reused e.g. stone barns?

Once this analysis has been carried out, the designer can use the information to inform a development layout that can integrate readily into the settlement.



Two new houses at Castle Bolton that respect the historic context of the site. Architect: M Tempest Photo credit:J Potter.

#### **Buildings and spaces**

The arrangement of buildings, spaces, roads, paths, parking areas etc across a site can be influenced by a range of factors, most of which are site-specific. No two proposals will be the same because of the individual context of each site. However, a number of general guidelines should be considered.

The starting point should be the context of the site and the cues to be taken from the pattern and layout of surrounding development. Uniform and repetitive forms of suburban housing layout, either through a regimented arrangement of properties, or open plan development around a cul-de-sac or turning head, are not likely to be appropriate within the National Park. Designers are encouraged to consider less planned layouts with curtilage and access arrangements that reflect the surrounding pattern of development. Housing layouts that are clearly driven by the maximum number of units that can fitted onto a site, or conversely, kept low to fit within a threshold set by planning policies, are unlikely to be acceptable.

The design of the layout and buildings should be considered together so that buildings respond to the layout and are not just slotted into plots once the layout is settled. Adopting too many identical house types, where there is no benefit to the overall architectural integrity of the scheme, or locality, from repetition, should also be avoided.

Buildings should be arranged to maximise solar gain and energy conservation, using landscape features or ancillary structures such as garages to give shelter. The opportunity for siting solar panels on ancillary buildings should also influence their siting and orientation.



New housing (to the right) carefully arranged at the Rose and Crown, Bainbridge. The layout provides for pedestrian and vehicular access (one-way) and a well considered and executed solution for waste/recycling storage. Randall Orchard Construction.

#### Gardens and 'amenity'

Homes should have adequate amenity (garden) space for the occupants. For family accommodation, gardens should be big enough and provide a safe space for children to play in. For elderly occupants, smaller, low maintenance spaces will be appropriate. Sufficient space for outdoor storage, play equipment, waste and recycling bins should be provided.

Public boundaries to the site and prominent internal boundaries should be treated with drystone walls. Internal boundaries between plots may be treated with post-and-rail or hit-and-miss timber fencing. Close-boarded panel fences tend to have a suburban appearance and are unlikely to be appropriate, particularly if they are publicly visible.



Dry stone boundary walls at Pant Head, Austwick.

The position of buildings relative to each other, and the space between them, should ensure that occupants benefit from privacy, outlook and adequate natural daylight. As a rule, housing should be laid out to ensure a minimum distance between principal windows of 21m and 14m from a principal window to a blank or gable elevation. Designers should try to ensure that the layout discourages crime by avoiding enclosed alleyways and cul-de-sacs with no pedestrian through route, and by ensuring public areas enjoy natural surveillance.

#### Landscaping

In the National Park context, landscape planting is a very important element of a successful housing layout. Planting provides the opportunity to soften the visual impact of new development so that it assimilates more readily into its surroundings and the wider landscape. The layout should provide sufficient space for significant and durable planting that will mature and frame the site in the landscape. Planting within the site, as well as around the boundaries, should be given the same priority, to ensure that a high quality environment is created.

Public and private spaces should be well defined with clear boundaries such as walling, robust planting or a change in materials. Leaving small informal areas that have no public or private use or value should be avoided, or incorporated into gardens.

For more information on planting and hard landscaping, see Appendix *C*.

#### Drainage

How surface water drainage is treated in a housing scheme will contribute to determining whether it is sustainable development. Approaches to manage surface water that take account of water quantity (flooding), water quality (pollution) and amenity issues are collectively referred to as Sustainable Drainage Systems (SuDS).

SuDS are a sequence of management practices, control structures and strategies designed to efficiently and sustainably drain surface water, while minimising the impact on water quality. SuDS can be designed to slow water down (attenuate) before it enters streams, rivers and other watercourses, they can provide areas to store water in natural contours and they can be used to allow water to soak into the ground. Minimising the areas of hard surfacing within new development will reduce the impact of surface water run-off. Using permeable surfacing, for example gravel instead of paved surfaces, enables the water to drain away more naturally and prevent flash flooding.

More detailed design guidance on SuDs is available from the local lead flood authority:

North Yorkshire County Council: http://www.northyorks.gov.uk/article/25991/Flooding-and-drainage

#### Cumbria County Council:

https://www.cumbria.gov.uk/planning-environment/flooding/floodauthority.asp



It was necessary to provide a swale for this new development at Grass Lane, Grassington to ensure that surface water run off from the hillside behind the new housing (to the left) can be positively drained into the swale land (between the houses) or onto the road in severe conditions.

#### Access, movement and parking

Housing layouts are directly influenced by the position of the access onto the public highway and by design standards set by the highway authority for roads, turning spaces and car parking. However, highway specifications are among a number of factors that need to be addressed and it is equally important that housing layouts deliver quality places for people to live in that are not car dominated. Designing within the National Park requires an appreciation of the site context and this will influence how highway infrastructure is designed.

#### Access

The vehicular access to the site will require sensitive treatment to ensure that the development integrates into its surroundings without appearing to be designed according to rigidly applied highway engineering standards.

A suburban housing estate type road junction will rarely be appropriate within the National Park. Many of the traditonal villages in the dales are characterised by narrow lanes and closely arranged buildings. Many fall short of current highway standards.

There are a number of design factors to be considered:

- Junctions with the public highway should be low key and appropriate to the site context. Access junctions with concrete kerbs and wide footpaths with service strips either side of the junction would look out of place in most rural or village settings
- Existing roadside features, such as drystone walls, that contribute to the character of the area should be retained where possible
- Internal roads should follow the pattern of access routes in the vicinity of the site. Some villages have linear streets or lanes leading out to fields (outgangs) while others have more meandering routes
- Streets should be designed to reduce road speeds and create a safe environment for all users. The use of shared surfaces and courtyards will help to give the development a less formal or planned character as well as reducing vehicle speeds

 The choice of surface materials for roads, paths and other surfaces will also make a significant difference to the appearance of the development. Concrete kerbs, tarmac pavements and urban street furniture such as overhead lighting columns are unlikely to be acceptable in most villages. Many dales villages do not have street lights or footpaths

#### **Footpaths**

New housing should integrate into its surroundings by connecting with, and making use of, existing routes, as well as creating new ones. Providing safe pedestrian access is an important element of inclusive design. Footpaths should be overlooked by windows on nearby houses, preferably ones at ground floor level. If access to the rear gardens of terraced houses is needed, avoid creating blind tunnels and dead-ends as they are generally uninviting and can create problems associated with crime and anti-social behaviour.

#### Parking

Housing layouts need to incorporate a range of parking solutions appropriate to the site context and the type of housing proposed. A single parking treatment is likely to result in the visual dominance of the car and uninteresting, regimented layouts. Car parking should, where appropriate, be accommodated in a mixture of on-plot, onstreet and in small communal courtyards to add variety and enable parking areas to be discreetly integrated into the development.

Where on-plot or on-street car parking is proposed, landscaping (both hard and soft) can balance the visual impact of parked cars. For example, where car parking is the front of a property, it is advisable to allocate at least an equal amount of frontage to an enclosed, landscaped front garden to avoid the car being the dominant visual feature. Drystone walling can also screen vehicles from open view and provide security. Communal car parking courtyards should be small and overlooked by ground floor windows.



Above and opposite: parking on individual plots and courtyard parking for apartment buildings. Dry stone boundary wall visually 'contain' the cars ensuring that they do not become the dominant feature of the street. New tree planting within the layout will help to soften the appearance of the development over time. Developer: Yorkshire Housing Association.



#### 3.2.2 House design

Dales houses have an identifiable character, which is visually different from other parts of the country. New house designs should therefore aim to reinforce and contribute positively to local distinctiveness.

The National Park Authority expects well designed houses to be sustainable, of high quality and appropriate for their context. This can be achieved by taking inspiration from the surrounding architecture and by paying attention to their scale, proportion, massing and the use of materials.

#### Traditional Dales houses

The distinctive character of dales houses is largely a product of the local climate, the availability and qualities of local natural materials and local building traditions. Although there are exceptions, dales houses tend to be robust, solid and functional buildings with little architectural ornamentation. Although dales houses, grouped in a village or dale, will share some of these broad characteristics, closer inspection can reveal a high degree of variety - no two houses will be the same. This creates a problem in planning larger housing sites as modern housing types, with their uniform appearance, can look too repetitive and out of place in an informal built environment.

The following sections look at some of the broad characteristics of traditional housing across the National Park that designers can use as a reference.

#### Plan form and orientation

The plan form, or layout of a building, in traditional dales houses tends to be straightforward without complex projections on multiple elevations. There is a strong tendency for narrow and rectangular plan forms, even single cell width houses. This is a practical design as narrow plan buildings with south facing windows enable daylight penetration. The narrow width of the house also has a significant effect on the shape of the roof, allowing a low, shallow sloping pitch. Houses with a deep, square plan can produce a squat, bulky design, often with a higher, more dominant roof, that generally appears out of proportion in relation to traditional houses with narrow plan forms. Deep plan layouts do not allow natural light to penetrate through the building.

A narrow plan house may need to be longer to provide the same floorspace as a square plan house. Although long, narrow houses are typical, the apparent length of the building can be reduced by introducing a step back or step down to create a subservient element. Additional floor area can be provided on new build narrow plan houses by introducing single storey offshuts or extensions.

Houses should be oriented to follow the arrangement of surrounding development where possible, providing this does not result in houses turning their backs onto access roads or main highways. Active frontages are important in creating welcoming, pleasant places to live.



Floor area can be increased by using an offshut with a catslide roof. New houses at Castle Bolton. Architect: M Tempest.Photo credit: J Potter

#### Roof shape

The roof height and shape is heavily influenced by the span of the building, its type of construction and limitations of the roof material.

Most buildings in the Yorkshire Dales have double pitched roofs at an angle of around  $30^{\circ}$ . They are mostly symmetrical although cat slide roofs – where the roof is extended down from the eaves to cover a later extension – are common. A cat slide roof is a good way of providing a wider internal layout without requiring a larger, higher, more dominant roof.

Roof pitches are also determined to some extent by the size of the slates. The longer the slates, the longer the overlaps between them and the lower the pitch. Traditional buildings also tend to have a low eaves height, a feature that should be carried through in new buildings to ensure height and proportions are appropriate. Hipped roofs are less common. Flat roofs are also rare and should be avoided. Mono-pitched roofs are sometimes found on small, single storey buildings.

Typically, dormer window projections are not a characteristic element of traditional architecture within the National Park. However, buildings within the Cumbria area have a more Lakeland style of architecture, which can include these features.

For new housing in the Cumbria area, dormer windows should generally be sited centrally within the roof slope, have a front facing gable and be in proportion with the overall size of the roof and building.

#### Scale, proportion and massing

When designing a new house, careful attention needs to be paid to the size, scale and mass of the new building so that it fits in with the local character or context of the site. The scale, height and mass of a new house should respect that of adjoining or adjacent buildings. Height is particularly important in determining the impact of a development on views and skylines. The majority of traditional buildings in the Dales are of two storey height with a shallow pitched roof. There are some notable exceptions, such as three storey town centre buildings in Sedbergh. In general, buildings have a basic functional, human scale, simple proportions and little detailing.

Building Regulations standards for room heights can influence the overall height of new housing. Where new houses are sited next to older traditional housing, the difference in height can be a significant factor in the housing being out of scale with neighbouring buildings. Incorporating the first floor rooms partially within the roofspace will allow the building height to be kept lower than if the first floor ceiling is closer to the eaves level.

The scale of new houses relative to the landscape and to the size of the plot is imperative to their success in fitting in with their surroundings. Overlarge buildings that dominate landscape features or views will not be acceptable.



Large apartment buildings at Aynham Close, Grassington (Yorkshire Housing Asociation). Gabled projections reduce the massing and drystone boundary walls are foreground features that bring down the height.

Bungalows are rarely an appropriate form of dwelling in the National Park because their proportions conflict starkly with that of traditional buildings in the Dales. Bungalows have a large, often square, plan form, which results in a high, dominant roof shape. However there is considerable scope for single storey dwellings that follow a narrower plan form, either with shallow, double pitched roofs or mono-pitched. Such buildings could be employed in an informal courtyard or farmyard type layout.

Most dales houses have balanced proportions, having neither an overly horizontal nor a vertical emphasis. This balance is due to a number of factors - a relatively low building height, a shallow pitched roof, and low eaves, which give a horizontal emphasis; balanced by gables, chimneys and windows with a vertical emphasis.

The arrangement of windows, doors and other features on traditional houses tends to be symmetrical. Barns and other functional buildings that have been converted to dwellings will have openings arranged for functional reasons (e.g. for forking hay, feeding animals, etc).



Lynchet Cottage, Coniston. A new house that is particularly respectful of its setting. Architect: John Moore and Partners. Photo credit: D Oldbridge.

Modern housing can appear to overwhelm its traditional neighbours if a squat, deep plan form is adopted. Massing can be broken down to traditional proportions through the use of gabled projections, single storey offshuts, double pitched roofs, etc.

Dales houses owe their simple, robust character in large part to their high solid-to-void ratio – a higher proportion of their external surface area consisting of solid masonry as opposed to window and doorway voids. Designers should aim for a solid-to-void ratio of 3:1 on the principal elevations of new dwellings. Openings on gable elevations are not so common, particularly if the elevation faces the prevailing weather, and a much higher solid-to-void ratio is necessary.

#### Windows and doors

There is a general tendency for windows to be individually smaller than in other parts of the country and windows tend to be smaller on north facing elevations than those facing the sun.

Generally, windows at first floor level tend not to be taller or wider than those beneath, a hierarchy that produces balanced proportions.

The disruptive effect of wider windows on the proportions of the house can be addressed by dividing the window by solid mullions.

Typical window frame styles in this area include Yorkshire (horizontal) sliding sashes, vertically sliding sashes or side opening casements. Designers should choose a style which is appropriate for the character of the area and the proportions of the building. Glazing bars should be integral to the frame and not be stuck on the glazing.

An important detail of traditional windows is a deep recessed window frame. This protects the window frame from the prevailing weather and gives the external face of the building depth and interest. A minimum reveal of at least 100mm should be adopted for windows and doors in new housing.



Windows: simple, recessed, timber frames. Photo credit : J Potter

Modern asymmetrical frames, storm casements, top hung or bottom hinged casements or mock sliding sashes give a very poor visual appearance and are not appropriate.

Doors should be simple, vertically boarded or timber panelled, with or without partial glazing. Doors and windows should be made from timber following traditional patterns. If maintained properly, timber can last much longer than uPVC, as well as producing a much better visual quality.uPVC doors are rarely an appropriate accompaniment to natural stone walls.



Doors: simple, solid, recessed. Photo credit : J Potter

#### **Materials**

The built environment of the National Park is strongly characterised by the almost universal use of natural local stone for walling and roof coverings. If new development is to reinforce this local distinction, and fit in with its surroundings, then the designer needs to pay close attention to the type of stone and how it is used.

Although the use of local stone in new development is clearly important there will, nevertheless, be considerable scope for the use of other appropriate materials.

For more information on materials and traditional construction methods, see Appendix A.

#### Architectural details

Although dales buildings are generally functional and plain they have some distinctive architectural features which are typical of the area and some which are more localised.

#### **Roof details**

Roofs of traditional buildings are typically simple and uncluttered and the roofscape of a village, viewed from higher vantage points in the landscape, can be compromised by excessive use of rooflights and solar panel arrays. In sensitive locations, the design of rooflights should follow the conservation style i.e. having a traditional size and vertical proportions, black metal frames with central glazing bar, and be fitted flush with the roof surface.

Solar panels should ideally be sited on lower ancillary buildings (e.g. garages) or single storey offshoots. They should have a black, non-reflective finish with a dark metal surround and should be fitted with brackets that give a low profile and not stand proud of the roof slope. It is preferable that solar panels and rooflights are in roof valleys or on less conspicuous roof slopes.

Chimney stacks of all shapes and sizes can be found although there is a tendency for them to be low and squat. They are usually built from the same stone as the walls of the building and are nearly always positioned straddling the ridge of the roof, at the gable ends of the building or within the thickness of the walls. External chimney stacks on the gables, supported by corbel stones, are usually only found on buildings of considerable age. Chimneys are usually capped with short pots, but in some places the use of stone flags (supported by stones at the corners of the stack) are an interesting variation that could be repeated in new development. Many chimneys are formed with stone slab copings or water tabling to help shed water.

The junctions of walls and roofs are usually treated very simply, especially on gable ends, without significant roof overhang, or the use of barge or fascia boards, either decorative or to support guttering. Verge copings or water tabling (flat stones lying along the edge of the roof at gable ends) are characteristic of some settlements but not others.

Details such as shaped kneelers and corbels should be used in a restrained way to ensure the building does not appear overdressed.

Traditionally roof guttering has been made from cast iron, painted black and attached to the masonry on rise and fall brackets. New housing should follow the same approach. Aluminium or steel gutters painted black will be required in historic locations; black plastic may be acceptable elsewhere. Gutters should not be attached to fascia boards but should be fixed by brackets directly to the masonry.

#### Walls

Architectural details, such as stone quoins, lintels, cills and mullions, will add structural integrity and interest to elevations if the context is appropriate. For example, in many small villages, a lot of traditional houses have a simple, unadorned character and in such a context, a new house with lots of dressed stonework (cills, lintels, corbelling, water tabling etc) will look overdressed.

In some areas, features such as stone window surrounds will be common and should be carried through in new development.

New stonework for quoins, cills, lintels etc should ideally be textured (sandblasted or tumbled at the quarry) to give a weathered

appearance. This will help the new development to blend in and avoid the machined appearance of modern materials. Concrete or reconstituted stone should be avoided.



This housing development at Pant Head, Austwick is good example of how modern housing can fit in to its context through a considered design well executed by the developer. Developer: Maximus Developments Ltd.

# **4.0 Householder development**

- 4.1 Design approach:
  - 4.1.1 Key factors
  - 4.1.2 Sustainable design
  - 4.1.3 Design quality
- 4.2 Design details:
  - 4.2.1 Extensions
  - 4.2.2 Scale, massing and proportion
  - 4.2.3 Conservatories
  - 4.2.4 Residential amenity
  - 4.2.5 Gardens, outbuildings and boundaries

## 4.1 Design approach

This section provides advice on extensions and alterations to dwellings as well as works to, or within, the curtilage of dwellings.

#### 4.1.1 Key factors

The National Park is renowned for its distinctive built heritage. Dales houses have an identifiable character and appearance that is one of the defining characteristics of this part of the country. This local distinctiveness has remained largely intact, despite changes in building technology. It is therefore important for local cultural identity that new development does not undermine these qualities but reinforces them. This principle is underpinned by the guidance set out in the NPPF [para 58].

The key factors that the National Park Authority expects to see addressed in proposals for householder development are to:

- respect and retain the character of the original house in the vast majority of cases. Additions should respect its scale, mass and proportions and follow or complement its architectural style
- address architectural mistakes of the past, such as large picture windows or poor materials, when improving modern houses, so that they make a positive contribution to the character of the area
- ensure extensions and improvements do not compromise neighbours' privacy, light, and the enjoyment of their property
- respect the scale, proportions and character of the house and consider how neighbours would be affected when making proposals for developments within garden spaces
- not harm the character and visual quality of the landscape when annexing land from adjacent fields to extend the garden area

#### 4.1.2 Sustainable design

The need to demonstrate that proposals are sustainable extends to householder developments as well as larger scale schemes.

Although proposals for extending and redeveloping existing dwellings are relatively small in scale, they offer opportunities to maximise solar gain through the orientation of windows and solar porches, take advantage of natural ventilation, and benefit from shading or shelter from prevailing weather.

Designers also need to consider energy efficiency measures and incorporating renewable energy technology to meet Building Regulations requirements. These measures should be designed-in at an early stage so that they are an integral part of the design. Extensions, garages and outbuildings offer good opportunities for installing renewable energy equipment, such as solar panels or biomass boilers, without altering or detracting from the appearance of the main house.

#### Solar panels

Taking the opportunity to incorporate solar panels into the roof of extensions and outbuildings is particularly important where this avoids siting them on the roof of the main building. Solar panels can be prominent in the stone slate roofscape of villages, particularly in open valley landscapes. Siting solar panels on lower buildings makes them much less conspicuous in long distance views, as does the use of black, non-reflective panels with black frames.

#### Sustainable drainage

The Yorkshire Dales is an area that suffers during prolonged rainfall from river and surface water flooding. Designers and homeowners are encouraged to help reduce the impact of flooding by adopting sustainable drainage techniques. The flow of water can be slowed down by allowing water to soak into the land or through storage and re-use.
Proposals that include some of the drainage features listed below are more likely to be considered sustainable:

- on-site soakaways
- permeable surfaces (e.g. drives, paths etc)
- green roofs
- water collection and recycling systems (e.g. water butts)
- channels and rills
- water gardens and ponds

## 4.1.3 Design quality

Different, new and progressive thinking will be welcomed where it is a positive response to the National Park context. Extensions and alterations to dwellings present an excellent opportunity to introduce contemporary designs and materials, even on traditional buildings. An innovative approach may also be necessary to make better use of small spaces or to avoid affecting neighbours.

The need to respect or respond to the scale and proportions of the original house is likely to dictate the form of the extension.

On sites with more space, it may be possible to provide additional accommodation using a linked annexe design – a larger structure visually detached from the main house but accessed through a smaller linking element. This may be preferable to a large extension that threatens the integrity of the host dwelling.

The treatment of elevations, openings, and use of materials also offer scope for the designer to adopt a more contemporary approach. The key will be to ensure that the design responds positively and sympathetically to its context.

For example, an extension with a typical lean-to or pitched roof could include robust timber or steel uprights with deeply recessed architectural glass. The form would be traditional, the materials contemporary, but the overall effect would be a simple and solid addition to the house.



An interesting design solution by Trombe Ltd of Leeds.

Less subtle approaches may not be appropriate, particularly where context is ignored. For example, the use of brightly painted cement render with a smooth finish, or randomly sized openings that conflict with the proportions of the house may not produce a design that responds positively to the built environment or the landscape.

# 4.2 Design details

This section provides more detailed guidance for designers who are less familiar with the Park or who require more advice on the quality of design expected by the National Park Authority.

## 4.2.1 Extensions

The distinctive architecture of the Dales is essentially a product of local building traditions that have developed in response to the Pennine climate and the availability and limitations of local building materials.

As a result, the traditional dales house generally has a simple and straightforward two storey with pitched roof form. Many have a narrow plan form with shallow pitched roof dictated by the use of large, natural stone slates. The traditional way of extending these houses tended towards the most simple and uncomplicated solution. Proposals for extending or altering houses should follow the same ethos.



Opposite and below: simple forms and attention to detail, The Old Coach House, Arncliffe.Architect:JMP Architects Photo credit: J Potter



## 4.2.2 Scale, massing and proportion

The key to a well designed extension lies in ensuring that its scale, massing and proportions respect those of the original house.

Traditional dales houses tend to have well balanced proportions – the overall character or emphasis is neither overly vertical, nor horizontal. The shape and pitch of the roof, the shape of windows and doors and the amount, or ratio, of solid wall to openings will be key characteristics of the house which should be followed through in an extension.

The following illustrations show the **traditional** ways of extending a dales house and the rules of thumb that can be followed to ensure that extensions complement the scale and proportions of the original house.

#### Two storey side and rear extensions

(i) The length of two storey side extensions should be less than half the length of the house

(ii) Setting the extension back slightly from the corners introduces a visual break between the original house and the extension

(iii) Setting back also avoids obscuring details such as stone quoins and ensures that the extension does not dominate the house

(iv) The ridge of the extension roof should run at a lower level than that of the house, emphasising the hierarchy of the original house over the subordinate extension

(v) The width of two storey rear extensions should be less than the width of the house and the ridge of the extension roof should be lower than the ridge of the main house.



A two storey rear extension to a modern house. Hambleton House, Airton. Architect: Barry Birch. Photo credit J Potter



Listers Cottage Malham (above and below) : It is possible to add large extensions and yet still respect the proportions of the main house as this two storey rear extension demonstrates. The clever use of a smaller 'link' element ensures that the extension does not overwhelm the house. Photo credit: J Potter



#### Single storey side and rear extensions



The Old Blacksmith's Shop, Aysgarth. Designer D Ward Photo credit : J Potter

(i) It is essential that the extension should not appear to overwhelm the house but should be **subservient** to the house and in proportion to it.

(ii) The cat slide roof is a typical feature of traditional dales houses which allows for a longer projection and simple roof construction.

In order to retain the character and integrity of the original house it is important to ensure that the house does not become overextended. The impact of numerous extensions and alterations, taken together, can be to overwhelm the original house.

An extension that respects the proportions of the existing house, the proportions and arrangement of its fenestration and openings and its external appearance will produce a more harmonious composition.

This may be achieved by:

- ensuring that size of the extension, roof pitch and shape of windows maintain the vertical or horizontal emphasis, or balance of the house
- retaining a high solid-to-void ratio (greater wall surface area than windows and doors) although there may be instances where a well thought out design can introduce larger areas of glass or large doors and yet maintain the solidity and character of the original house
- maintaining symmetry and balance where that is a feature of the house



Single storey rear off-shut with catslide roof. Lynchets Cottage, Consitone.

The distinctive architecture and character of the Dales would be undermined quickly if extensions and alterations that fail to respect or complement the building traditions and distinctive architecture of the area are allowed. This does not prevent new or innovative design that takes inspiration from the dales context but means that some types of generic extension and alteration are unlikely to be acceptable. Examples include:

- dormer roof extensions (very few buildings in the Park have dormers)
- hipped roofs
- two storey and single storey flat roofed extensions
- wraparound extensions
- bay windows
- picture windows

## 4.2.3 Conservatories

Large glazed conservatories of a lightweight timber or uPVC plastic fabrication generally look out of place on traditional dales houses that are typified by their solid, robust appearance and natural local materials.

This type of conservatory is often associated with practical problems. They can get too hot in summer, too cold in the winter, and have a limited lifespan when exposed to the extremes of Pennine weather.

A more practical, economic and architecturally appropriate solution is the more solid garden room or sun room extension. This can incorporate some solid walling with some floor-to-ceiling glass in timber framing and a solid roof, perhaps with low profile or recessed rooflights.

Conservatories, garden rooms and sun rooms should follow the traditional forms of extension and, if possible, utilise more robust materials such as thick timbers or steel. A conservatory will have a more sympathetic appearance if timber frames have a natural (not stained) finish and steel frames are coated in a colour that complements the natural stone of the house, such as a sage green, pale petrol blue or grey.



Above: an innovative garden room type extension using steel framing and floor to ceiling glass at Ronan Garth, West Burton. Architect: W R Dunn & Co. Photo credit: J Potter

## 4.2.4 Residential amenity

The term amenity is used here to describe the qualities that residents can reasonably expect to enjoy in their homes and gardens. It is usually applied to qualities like privacy, natural daylight, outlook and quiet enjoyment. These qualities are taken into account and their protection given significant weight in considering planning applications.

## Privacy

Great care should be taken in designing an extension, or when inserting new windows into a house, that the privacy enjoyed by neighbours is not significantly affected.

Windows that look directly into a neighbour's windows should be avoided. A rule of thumb is to maintain a separation of at least 21m between principal windows.

Windows that look directly on to the part of the garden immediately to the rear of the neighbour's house should also be avoided. This part of the garden is where residents could reasonably expect to enjoy some level of privacy.

## Light

Two storey extensions have the potential to overshadow neighbouring properties and proposals will be assessed on how they affect natural light to the neighbour's windows and the garden space immediately to the rear of their house.

An important distinction is made between direct sunlight (from the sun's rays) and natural daylight (reflected from the sky).

The most common problem arises from siting tall extensions on the site boundary which block the neighbour's direct sunlight. The effect is generally dependent on the height and length of the proposed extension.

A useful rule of thumb is to draw a  $45^{\circ}$  line from the centre of the neighbour's nearest window across the site. A two storey extension should not bisect the  $45^{\circ}$  line.

Many dales villages are typified by the dense grain of development, with houses and outbuildings closely arranged about each other. In such places, designers will need to take care not to enclose the neighbour's garden with tall extensions which significantly reduce light the amount of sky visible from their windows.

## Outlook

In villages with closely arranged houses and small, private gardens, the enjoyment of garden space can owe much to open views and the feeling of being within a wider landscape.

Whilst there is no right to a view in planning, extensions that oppressively hem in a neighbour's garden are unlikely to be acceptable.

To ensure that a neighbour's outlook is not affected, the rule of thumb is to avoid:

- long extensions which enclose the outlook from a neighbour's garden or which complete a ring of high boundary walls
- tall extensions on the boundary that would appear overbearing or dominating if viewed from the neighbour's window or sitting-out space
- two storey extensions which are not set in from the boundary by a least 1m or which are too long

## 4.2.5 Gardens, outbuildings and boundaries

Gardens and the spaces around houses are now being used more innovatively than in the past. They provide a range of ways to collect or drain away rainfall sustainably and can host a number of renewable energy technologies.



green roofs



wind turbine

rainwater collection



ground mounted solar array

In recent years, garden buildings have become popular as offices, summer houses, annexes etc as well as providing more traditional storage space or hobby workshops.

Garages and garden buildings also offer opportunities for introducing more contemporary designs that complement traditional buildings.

The most common issues that the designer needs to address are:

- Scale. Garages and outbuildings should be subservient in scale to the house. The proportions of the building should respect those of the house. Wide double garages are a suburban feature that will rarely complement the proportions of a traditional dales house
- Neighbours. Large buildings can have an overbearing or enclosing effect on neighbouring gardens. Avoid introducing windows to garden structures that overlook the neighbouring garden or house
- Materials. Traditionally, domestic outbuildings would have been constructed from the same materials as the house. This general principle should be followed although there is scope for introducing materials such as glass, timber and steel used sensitively to complement the character of the house and area
- Use. If the intention is to use a garden building as an office, workshop or living accommodation, check with the planning office to find out whether planning permission is needed



Garden building at Briggflatts. Photo credit: J Potter

Planning permission is required to change the use of agricultural land to garden and in most cases, the main consideration is how this would affect the wider landscape. As a general rule, the amount of land taken should be modest and fit within existing landscape features rather than pushing the garden into open farmland. The extended garden should also be capable of enclosure and screening by a drystone boundary wall and appropriate landscape planting.

#### **Further information**

For local and national planning policy: http://planningguidance.planningportal.gov.uk/ For guidance on sustainable drainage: http://www.ciria.org/ItemDetail?iProductcode=C687&Category=BOOK

For guidance on renewable energy:

http://www.yorkshiredales.org.uk/lookingafter/climatechange/cc-whatyoucando/cc-renewableenergy/energyproductionguide/cc-e-energyproductionguide.pdf

# **5.0 Commercial buildings**

- **5.1** Design approach:
  - 5.1.1 Key factors
  - 5.1.2 Sustainable design
  - 5.1.3 Design quality
- **5.2** Design details:
  - 5.2.1 New buildings
  - 5.2.2 The rest of the site
  - 5.2.3 Live-work units

# 5.1 Design approach

This chapter provides guidance on the design of new commercial, industrial and retail buildings, and on live-work units. This section outlines the key factors the National Park Authority expects to be addressed in a proposal for commercial development.

## 5.1.1 Key factors

The National Park Authority takes a positive approach towards development for new and existing businesses. This is reflected in the policies of the Local Plan that allocate sites for new commercial development and support the expansion of existing business premises.

Good design and quality in building have advantages for businesses. A well designed building will help the efficient operation of a business and can create an environment that gives customers and investors confidence.

Most commercial development will either involve the construction of new buildings in established or new business parks, on other sites within or close to villages, or the conversion of a traditional building to a commercial use.

For detailed advice on **converting** traditional buildings to a new use, see Chapter 6.

The key factors that the National Park Authority expects to see addressed in proposals for **new** commercial buildings are to:

- protect the natural beauty of the landscape and reinforce local distinctiveness by taking inspiration from local building traditions. The requirements of a modern industrial or commercial enterprise on the design of the building are not incompatible with a National Park context but they may require a creative design
- ensure new commercial development does not give neighbours noise, traffic, odour or disturbance problems

- take full advantage of opportunities for sustainable design
- deliver high quality in the detailed design, materials and finish of buildings, and in the landscaping and treatment of the surrounding land



The Dark Horse Brewery near Hetton – conversion of a traditional building to a commercial use.

## 5.1.2 Sustainable design

Incorporating renewable energy technologies makes good business sense as well delivering sustainable development. Heating from ground or air source pumps or biomass boilers and electricity from solar arrays can reduce business overheads and provide protection from unstable oil and gas prices.

Sites on existing business parks are particularly suitable for solar panel arrays, either ground mounted (within the land around the building) or roof mounted.

Large buildings should incorporate systems for collecting rainwater from roofs and either re-using it or managing it in a sustainable drainage system to regulate surface water run-off or create wildlife habitat.

All new commercial development should include adequate provision for collection and recycling of waste materials.



Above and opposite: The Dales Bike Centre at Fremington uses a ground source heating system and bike washing facility supplied by a water recycling system. Builder: Randall Orchard Construction. Photo credit: J Potter

## 5.1.3 Design quality

There are many established commercial and industrial sites that offer significant scope for design that is truly ground-breaking.

The National Park Authority encourages designers to consider different, new and progressive ideas for development that complement what is special about the National Park but are also stimulating and innovative.

Proposals for new commercial buildings could incorporate eco-design features such as underground buildings, passive heating, natural ventilation, green roofs etc. There are also sites where contemporary materials such as COR-TEN steel, architectural glass, steel, aluminium, zinc, copper, concrete etc. could be used in modern buildings to complement traditional materials and their surroundings.



# 5.2 Design details

This section provides detailed guidance for designers who are less familiar with the Park or who require more advice on the quality of design expected by the National Park Authority.

## 5.2.1 New buildings

The size, form and layout of new commercial buildings tend to be influenced by the operational needs of the business. Nevertheless, the siting and design of the building, and the treatment of the rest of the site, should respect its context.

New buildings on sites in villages or in the countryside need to fit sensitively into the landscape or village setting. Designers should follow the approach to appraising the site context set out in Chapter 2.

There are a number of design factors that should be considered:

- The design should reflect local building characteristics be simple, functional and robust
- Quality in design detail, materials, and finish will be expected
- For smaller businesses, a building following the scale and proportions of a traditional barn may be appropriate
- For manufacturing or distribution businesses requiring a large floorspace, a low agricultural-type building may be acceptable. These buildings should include low stone walls with Yorkshire timber boarding above and dark coloured roof sheeting
- Steel, timber and glass can be used to give a contemporary feel whilst remaining sympathetic to local building characteristics. Consider leaving timber untreated and using muted pastel shades such as sage green, petrol blue or grey for powder coated steel frames
- Green roofs may be required for new buildings that are prominent in the landscape

New buildings on plots in existing business parks should be dealt with in the same way. It is important that business parks are developed in a coherent way. Piecemeal development can result in a hotchpotch of different building styles and materials. New buildings should try to reinforce a sense of place, as a coherent and well designed business park can benefit all businesses.

## 5.2.2 The rest of the site

The treatment of the land around the building is likely to be as important as the design of the building in ensuring the development functions well and fits into its context.

The road access, manoeuvring space, loading and unloading areas should not dominate the appearance of the site.

Car parking areas should be broken up into smaller areas around the building rather than in a large car park. Smaller areas can be screened by landscape planting or drystone walls. Permeable surfaces should be used for parking and paths to help with sustainable drainage of the site and to avoid flooding.



The Spar store at Sedbergh

Where the business involves the storage of materials or equipment in the open, the designer should consider its visual impact and how it can be screened. Materials are better kept close to existing buildings and not stacked higher than single storey eaves height. Boundaries such as stone walls or landscape planting can also aid in screening outside storage areas.

External lighting should be the minimum necessary for safety and security. The rare dark sky environment of the National Park is cherished by local people and recognised internationally. It can be preserved by thoughtful lighting design.

When designing lighting:

- avoid floodlighting, overhead street lights and bulkhead lights
- use bollard-type lights in car parks and for pathways
- consider light fittings with a screen or shield that focus light down, so reducing light spill
- recess windows and avoid large rooflights
- deeply recess large display windows and consider downlighting within the recess
- avoid Illuminated signs as they are unlikely to be acceptable

Safety and security is better addressed by ensuring that activity at the site can be seen by passers-by rather than by introducing excessive security fencing and CCTV installations. Contact the Police Architectural Liaison Officer for advice on innovative solutions.

The appearance of most commercial buildings and sites will invariably be improved by well thought out landscape planting. Planting can help to soften the appearance of unsightly structures, materials, vehicles and featureless areas of hardstanding. Planting with dense prickly, shrubs, such as holly, can help to screen and protect areas which are vulnerable to crime, such as ground floor windows and equipment stored outside. Screen planting can also help to reduce the effect of noise, from vehicles and commercial activity, on neighbours. This could be particularly important if proposals to expand or intensify commercial activity will have an impact on neighbours.

For further information on planting and hard landscaping, see Appendix C.

## 5.2.3 Live-work units

Live-works units are primarily commercial buildings with an element of residential accommodation. They can provide a solution for small businesses wishing to move to the area without the cost of finding living accommodation in addition to business premises.

Live-work units are particularly suitable for craft based businesses that need a workshop, storage, an office or display space together with living accommodation. Internet businesses that require storage space would also be suited to the live-work format.

The Local Plan encourages the development of new build live-work units on brownfield sites within villages and on existing business park sites. Policy BE4 specifies that at least 60% of the floorspace of the unit should be used for employment purposes.

New build live-work units should fit in just like other development. For sites within villages, the unit may need to be designed to fit into the context of traditional dales houses and buildings. The best approach to follow is likely to be a design that takes its cue from traditional functional buildings such as barns, stables, workshops etc. The basic barn form with added lean-to elements can provide generous floorspace for employment and living accommodation.

In such cases, the approach should be to design a building that has a simple functional character as opposed to a building that has the appearance of a dwelling.

A number of live-work units could be provided in a courtyard layout to contain parking, materials, displays or noisy activity.

Live-work units on businesses parks can be treated differently. Where the character of the business park is of utilitarian buildings, there is scope for an innovative design that makes use of contemporary materials rather than being constructed solely from stone. Architectural glass, steel, timber framing, profiled sheet roofing, timber cladding etc may be suitable.



A large live-work unit on the Reeth Dales Centre business park comprising workshop, display/sales space, office and living accommodation.Developer:Randall Orchard Construction.

# 6.0 Converting a traditional building

- 6.1 Design approach
  - 6.1.1 Key factors
  - 6.1.2 Sustainable design
  - 6.1.3 Design quality
- 6.2 Design details
  - 6.2.1 Conversion works
  - 6.2.2 Wildlife

# 6.1 Design approach

This section outlines the key factors that the National Park Authority expects a proposal for the conversion of a traditional building to address. Traditional farm buildings are used as an example but the guidance is equally applicable to other buildings such as former schools, churches, chapels and mills. The approach is applicable to all types of use, from high intensity, such as residential or live-work uses, to low intensity such as a camping barn.

## 6.1.1 Key factors

Traditional buildings, in particular farm buildings, make a distinctive contribution to the character of the landscape. Most traditional farm buildings within the National Park are simple, functional structures built from local materials. They are, however, highly diverse in their size, form and appearance according to their age, location and function. Many have become redundant and are falling into disrepair. Adapting them to a new use may be one option to secure their long term future, whilst also helping to reduce the demand for new building in the National Park.



Left: A combination barn at Starbotton: these buildings housed livestock and sometimes functioned as a cart shed or granary.

Right: A Hen House at Thornton-in-Lonsdale.

#### The field barn

One of the most vulnerable traditional farm buildings is the field barn. Many were constructed with associated drystone boundary walls between the 17<sup>th</sup> and mid-19<sup>th</sup> centuries to form the distinctive barnsand-walls scenery we see today, which is a special quality of the National Park. Field barns were built in the meadows to provide shelter and hay storage for cattle over winter. Following the modernisation of farming practices after the Second World War, most field barns have only a low level of agricultural use, providing storage or shelter for animals.



Field barns in Swaledale.



The components of a traditional field barn.

One of the statutory purposes of the National Park Authority is to conserve and enhance cultural heritage. To fulfil this purpose for development affecting historic buildings, a sensitive approach is needed. The Authority therefore expects projects for the conversion of traditional buildings to adhere to the following five key principles\*:

\*based on Historic England's 'The Conversion of Traditional Farm Buildings – A Good Practice Guide'

#### 1. Understand the context, character and significance

Traditional buildings were generally built to serve one purpose, such as an agricultural use, although in practice they were often used for a variety of uses. Adapting a building to a new use requires an understanding of the building and its setting to inform the changes that can be made without harming its essential character.

Before considering any requirements of a new use, it will be necessary to identify and assess the architectural and historic elements that make the building important and give it character. To do this, it is helpful to take advice from an archaeologist or historic buildings consultant who is experienced in working with traditional buildings.

The Historic Environment Record held by the National Park Authority may have helpful information about the building and any additional information that is gathered about the building can also contribute to this record.

There are three stages to assess a building's significance and capacity for change.

*Stage 1, Site survey*. A description of the building and the surroundings.

Assessment of the building should begin with its landscape context. Is the building a prominent feature in the wider landscape or not? How would its conversion to a new use affect the landscape? What would be the impact of lighting, renewable energy installations, creating a curtilage, car parking, etc.? What is the physical relationship of the building to other buildings in the landscape? Does it form part of a tightly knit or dispersed group of structures, and how would its conversion affect the relationship? Are there modern buildings or structures whose removal would benefit the setting of the traditional building and the landscape?

When looking at the immediate surroundings of the building, the designer needs to assess what historic and modern spaces there are, and how the site has developed over time. This work should be carried out thoroughly as some features may be less easily

identifiable, such as earthworks or buried remains, but it is important that they are taken into consideration as they too are part of the history of the site.

When assessing the building, it is important to look at the original plan form and function to understand how it has developed. The construction materials are likely to have been locally sourced, but may also include re-used features from elsewhere, for example date stones or window surrounds. Individual features may be evidence of the development of the building. All information needs to be recorded and analysed so that the architecture and the history of the building can be understood.

**Stage 2, Assessing significance**. The designer should assess the building's architectural and historic significance through considering its characteristics, appearance and features, the development of the site and its importance in the landscape.

*Stage 3, Assessing the capacity for change*. Once the site and its significance are understood, the impact of different uses can be assessed, in order to narrow down the options.

For further guidance on stages 1-3, see the Traditional Farm Buildings Toolkit using the following link:

http://www.yorkshiredales.org.uk/\_\_data/assets/pdf\_file/0004/938173/Traditional-Farm-Buildings-Toolkit-v4.5-Lo-Res.pdf

#### 2. Understand the condition and construction

A survey of the building will identify its structural soundness to establish if it is capable of adaptation with no more than minor structural work. The survey should also look at the materials and construction techniques used in the building and any later phases of development. This knowledge will then inform the changes that can be made whilst protecting the structural integrity of the building.



The Courtyard, Settle (before and after): a sensitive conversion of a former farmstead to provide retail units and a café, utilising original openings and features.

#### 3. Conserve and enhance architectural and historic interest

It is essential that a scheme is designed to conserve and enhance the existing structure and its architectural and historic interest. Of equal importance is the need to consider the surroundings of the building, as many dales buildings, in particular field barns, are integral features of a high quality landscape. The building should be suitable for the proposed new use so it can be converted without substantial alteration or extension. A balance often needs to be struck between the conservation of the original building and the demands of a new use. Conversion proposals present a unique opportunity to create new and

interesting designs which use the features of the building to enhance the converted space.

#### 4. High design standards

A traditional building requires sensitive repair, compatible materials and a bespoke design to integrate the new use without harming the characteristics and features identified. Off-the-peg solutions will rarely be compatible with the building. Achieving a successful scheme, which works long term for the building, will require skill and experience in working with traditional buildings.

#### 5. Minimal intervention

The best new use for traditional farm buildings is invariably a low-key use which has a minimal impact on the fabric of the building and its setting. However, often the greatest demand is for more radical changes. High intensity uses such as living accommodation can involve changes that would significantly and irreversibly alter the character of a building and its surroundings. For some buildings, any intervention, however minor, can have a severe impact and may mean the building is unsuitable for adaptation. However, many buildings can be adapted providing there are realistic expectations about what a building can accommodate. The key is to adapt the building in the least intrusive way possible.

## 6.1.2 Sustainable design

## Energy efficiency

Before considering energy saving measures, it is important to understand that historic buildings do not function in the way that modern buildings do as they are constructed to allow moisture to travel inside and outside the building.

Traditional buildings are constructed with permeable materials, such as lime mortars, which allow moisture movement and thus erosion of sacrificial parts which can be easily maintained, for example by repointing masonry joints.

Ventilation of the building's interior is vital as it helps moisture to travel out of the building. A lack of ventilation and moisture movement is likely to cause damp. Introducing impermeable materials (cement mortar, damp membranes, etc.) can cause significant problems where moisture is trapped inside the building, causing damp and potentially eroding parts of the structure or features.

The introduction of insulation to a traditional building must be carefully thought through as it may cause condensation or trap moisture where the insulation touches the inner face of the external wall. Specialist advice from a builder or architect experienced in working with historic buildings can be very valuable.

Designers are advised to:

- research which insulation techniques are appropriate to the particular traditional building to avoid problems with damp later
- use natural and traditional materials or products, such as limecrete flooring, hemp-lime plaster or sheep wool insulation; these can be more effective than introducing non-permeable or nonbreathable materials.

## Renewable energy

Renewable energy technologies will contribute to cutting greenhouse gas emissions and reduce energy bills. The type of technology chosen and the siting and design of the installation needs to take account of the traditional character and the surroundings of the building.

Proposals should not irreversibly damage the historic fabric, and views of the building and the surrounding landscape should not be compromised. It is also important to examine whether there are any practical alternatives that would have less impact. For example, the external mounting of photovoltaic cells or solar panels can harm the character of the traditional building and may only be permitted where they can be sited discreetly, with minimal impact on the character of the building and its setting. Alternatively, where there is sufficient space to install them, ground source heat pumps are a good solution as they have a minimal visual impact. The impact of any installation can be lessened through design, size and finish. For more information on renewable energy technologies, see Appendix D.

## 6.1.3 Design quality

The unique nature of traditional buildings can present a challenge requiring an innovative solution. The scope for significant change to a historic structure is often limited and the aim should be to achieve a solution that has the conservation of the building at its heart. Innovative designs that include the use of contemporary materials, technologies or design, can often produce a more sensitive, complementary and authentic development, than a pastiche or standardised solution.



Reachey in Grisedale. This building was in a ruinous state. The restoration included new glazed 'inner' walls intended to deliberately reinforce the distinction between old and new and maximise natural light without further alteration to the original structure. Although, opinions remain divided on this project it was completed with attention to detail and a quality finish.. Photo credit (images opposite): J Potter







## **Barn Pods**

A recent project carried out by architects Fielden Clegg Bradley developed a ground-breaking approach of inserting an accommodation pod into a barn with minimal intervention to the fabric of the building.

The objectives of the concept were centred on both conservation and rural regeneration. The concept involves pre-fabricated pods being installed inside redundant barns, enabling the buildings to be re-used for short stay visitor accommodation and potentially other uses.

The timber pod provides basic living space with off-grid services. For example, water could be contained within a small trailer sited next to the barn, which is also fitted with a solar panel to provide a basic electricity supply.



Fig x: How Beck Barn, Bolton Abbey Estate. This is an isolated field barn which had an 'pod' inserted to enable the building to be used for holiday accommodation without modification of the barn itself. The works carried out were carbon neutral and completely reversible, with no significant impact on the landscape or the building. Photo credit: J Potter Drawing: Fielden Clegg Bradley







# 6.2 Design details

This section provides detailed guidance, particularly for designers who are less familiar with the traditional buildings of the Park or who require more advice about how the five design principles can be implemented.

## 6.2.1 Conversion works

The initial assessment of the traditional building should highlight important internal and external features of the building to be retained or protected in the conversion works.

## Interiors

Interiors are often vulnerable to alterations as they may have important features that are incompatible with a specific modern use (e.g. cow stalls). Much of the original character of the building can be lost by adding new walls and floors into open spaces and covering existing features or surfaces, such as stone walls and flagged or cobbled floors. However, it can be difficult to apply the principle of minimal intervention to the interior as this is usually where the most change is needed to incorporate a new use. Nevertheless, there may be an opportunity to create an interesting and unique feature or space.

Designers should consider the following when looking at interiors:

- Keep floor-to-ceiling open spaces, including double height spaces, with exposed original roof timbers for an attractive and light space
- Historic internal features, such as stone flags or stall divisions, are interesting features that could be retained
- New interiors work best when they are simple, high quality and work with internal spaces and features

## Exteriors Walling

Traditional dales buildings are almost exclusively built of stone masonry. Few openings and uninterrupted stonework is a defining characteristic of farm buildings in the National Park, in particular barns, and reflects the local geology from which the stone is quarried.

External walls were built in solid construction, with an internal and external stone face and a rubble core in between. Through-stones were used to connect the outer with the inner face at intervals, providing stability to the structure, and often project, giving a distinct character to the building. The stonework was either laid dry or bonded with lime mortar.

The pattern of the stonework contributes much to the character of the building and can range from simple rubble masonry to skilfully coursed stonework. One characteristic of dales barns is 'watershot' masonry where the stones are laid at an angle to shed rainwater from the building.

Particular features in the walling are uncommon although some buildings have integrated dovecotes or owl holes.



A large barn at The Riddings, Long Preston, with an attractive triangular dovecote.

Existing walling and its features should be left undisturbed. Where repairs are required, these should be carried out in sensitively and the original fabric reinstated using compatible, breathable materials.

#### Openings

A common pitfall when converting traditional buildings is the insertion of new openings which can take away from the character of a building. The lack of openings is a defining characteristic of barns and other traditional buildings in the National Park. Achieving appropriate levels of daylight, without compromising the character of the building, can be a challenge.

Original openings are predominantly in the form of cart or byre doors, ventilation slits, owl holes, putlock holes and forking and muck holes. Their configuration and the detail of their surrounds are important elements of a building's character, often representing its original function and sometimes later development phases.

Reveals ( the depth a window or door is set back from the external wall) are typically deeper than for modern buildings, providing added protection from adverse weather. A deep reveal is an important feature of traditional farm buildings, creating shadow lines and minimising the reflection from glazing. The depth of reveal needs to be retained and applied to any new openings.

#### Window design

The windows of traditional farm buildings were usually unglazed for practical reasons and cost. Instead, openings were often fitted with timber wooden shutters or louvres. Where glazed windows are present – sometimes without any opening lights or just an inward-opening hopper light at the top – they are generally simple and robust. Many traditional buildings also have evidence of old window frames which should guide the design of replacement windows.

Standard domestic-style windows will not fit with the agricultural character of the building. New window frames should be purposemade to fit the opening and character of the building. As an alternative, a new window without glazing bars set in a deep reveal and painted a dark colour, or left unstained or unpainted may be effective at retaining the appearance of a dark unglazed opening. Narrow ventilation slits can be glazed with a recessed fixed double glazed unit. Other openings can also be fitted with fixed glazed units.



Simple and deeply recessed window frames.

#### Door design

Traditional barn doors are typically vertically boarded timber, a style that can be easily retained or replicated. Given the often limited opportunities for daylight in agricultural buildings, partial or full glazing of existing doorways can bring extra light into a building. Success will be down to the detailed design.

#### **Cart doors**

Many barns, especially threshing barns, have large cart door entrances. The treatment of such large openings, often the best opportunity to introduce light to the interior, is an important design consideration for conversions. The challenge lies with the reflection of large areas of glazing, and so setting back the new glazing should be considered. Where practical, the reveal should be the depth of the external wall or deeper. Alternatively, a simple and functional design is often best, such as glazed doors and fixed sidelights, with a strong vertical emphasis and fixed-frame sections. However, innovative design solutions are also encouraged.

Where historic cart doors survive, it is important that they are retained. Where there is a large porch area, this should be left 'unconverted' so that the large doors remain functional and the original surface, such as cobbles or flagstones, can be retained.



Cart door openings at Guys Villa Barn, Long Preston (left) and The Coach House, Arncliffe (right).

#### Materials and finishes

Purpose-made, good quality timber doors and window frames are important elements for retaining the historic character of a traditional building, whereas uPVC is to be avoided.

Painting doors and frames, or leaving them unstained to weather and silver with age, is usually the most fitting treatment. Paintwork in muted greys and greens can work well as can bolder colours. A cohesive palette of colours on a group of buildings or within an estate helps to ensure the buildings relate to each other. White or cream woodwork should be avoided for barn conversions as this can create an overly domestic appearance at odds with the agricultural character of the building. Wood stains can also be used as treatment of timber doors and frames, although natural wood colours should be used.

Designers should consider the following factors and how they affect the exterior of the building:

- The internal layout of a building should be guided by the position of existing openings to achieve daylight and Building Regulation requirements; there may be a possibility of re-opening blocked up former openings
- Existing openings should only be blocked up where unavoidable, using sympathetic materials and ensuring that the original opening remains readable (e.g. by retaining lintels, jambs and straight joints), original shutters can also be retained
- Any new openings must be clearly justified having first explored alternative internal layouts, utilising borrowed light from existing openings and having regard to Building Regulation requirements
- Where new openings are unavoidable, their position, size and design should be sympathetic to the character and significance of the building
- New openings should be limited to discreet positions where they will not be readily visible from public vantage points and should respect the privacy of neighbours
- Domestic-style openings should be avoided as these are usually incompatible with the character of traditional farm buildings
- New openings must not harm historic features of the building, either through direct interference or by affecting their context
- Door and window opening reveals should aim to be at least 150mm
- Cart doors should be heavily recessed to at least the depth of the external wall

• Doors and window frames should be made of timber; their design and finish should avoid being overly domestic in style

## Roofs

Traditional dales buildings typically have stone-flag or sometimes slate roofs made of local stone and laid in graduated courses, although there are a few examples of blue slates imported from Wales or the Lake District. The stone-flag roof is an important feature that adds to the solid character of the buildings and their integrity within the landscape.

Roof timbers are often of special interest, although some buildings were re-roofed more recently. Historic timbers are recognised by being hand-cut (rather than machine-sawn) and sometimes have carpenter marks for their assemblage. Some old roofs and other timber structures (e.g. floors, ceilings) may also incorporate re-used timbers, such as remnants of former cruck blades (for heather thatched buildings), which are rare and of high significance.

The following factors should guide decisions about the roof:

- The eaves height and pitch of the roof should remain unaltered
- Existing slates should be re-used if they are in good condition
- Any additional slates should be carefully sourced to match the existing in type, finish and size
- Where an entirely new roof is necessary, appropriate stone flags will need to be sourced. See Appendix A
- Original roof structures, including old re-used timbers, should be retained, repaired and left exposed to the interior

#### Rooflights

Traditional dales buildings rarely have any glazing within their historic roofs, although glazed slates or tiles are sometimes present. The introduction of modern rooflights into plain roof slopes can have an intrusive impact on the traditional building and its immediate and wider surroundings. The reflective qualities of the glass can form a disruptive contrast to the matt and natural appearance of the stone.

Before adding rooflights, designers need to consider the following:

- They should only be added where clearly justified having first explored alternative internal layouts and having regard to the Building Regulation requirements
- They should only be sited to discreet/non-publicly visible roof planes to minimise the impact on the roof
- Their number and size should be the minimum necessary

Rooflights should be of a conservation type, sensitively designed to minimise their impact by being flush with the roof plane.

#### **Chimneys and flues**

Like rooflights, chimneys are not typical features of traditional farm buildings and their introduction can significantly detract from the agricultural character of the building. Where a projecting flue is required, it should be justified, carefully designed and sited to minimise its visual impact.

Flues should be positioned discreetly, preferably on non-publicly visible roof slopes and sited below the ridgeline. Painted or powdercoated finishes in a dark unobtrusive colour, such as black or dark grey, will reduce the prominence of the flue.

## Extensions

Traditional buildings proposed for conversion should be large enough to accommodate the new use without significant extension. If the building is too small for the use proposed, it is likely to be unsuitable for that particular use. For example, smaller outbuildings are usually unsuitable for residential conversion but can provide additional space for storage or services when converting another larger building within the vicinity.

There may occasionally be a good case for adding an extension as part of a conversion, for example where the extension would safeguard some aspect of the significance of the traditional building.

Extensions should remain subordinate to the historic structure in scale, form and position. The design and materials used should be sympathetic to the character of the traditional building, whilst avoiding pastiche and being clearly distinct from the original building.

The extended building should appear as a complete and harmonious whole. Conservatories, sun rooms and porches are typically domestic in style and should be avoided, particularly on farm buildings.



Simple extension to converted buildings at Feetham Holme. Photo: J Potter

#### Outside areas

The immediate surroundings of a traditional building will invariably make an important contribution to its character. A successful conversion scheme respects the relationship a building has with the surrounding landscape and other structures. Most traditional farm buildings have no associated curtilage, although occasionally there will be a small yard area formed by buildings and boundary walls or hedges. Creating a curtilage which has a minimal impact on the setting of the building, whether for parking or garden, is therefore likely to be a challenge. Existing boundary structures and vegetation often present an opportunity to contain and screen parking and paraphernalia associated with the use of the building. Where there are no existing enclosures, the introduction of parking areas and gardens should be the minimum necessary to serve the building and not have a negative impact on the immediate and wider setting. The landscape setting of the building should help inform the best position and form for any outside area.



Sympathetic treatment of external space at Hartley Barn, Long Preston Photo: J Potter

New outbuildings such as the addition of garages, sheds and other curtilage structures can have a negative impact on the setting of the traditional building. When landscaping the setting of a converted traditional building, it is important that the style is in keeping with its immediate and wider surroundings. With former farm buildings, especially those of high landscape value, the less that is done is generally best. In some cases, particularly where a medium or low intensity use is proposed, it will be preferable to retain or reinstate the agricultural setting, such as the pasture land surrounding the building. Areas of hard standing, gardens or formal landscaped spaces, which would detract from the character of the former field barn, are unlikely to be acceptable.

Car parking and amenity space can be contained within existing enclosures and screened using drystone walling or hedging where appropriate. Newly created external areas should be kept to the minimum area necessary and sited so that they do not compromise existing boundary lines. Existing boundaries, such as stone walls and hedging, as well as historic surfaces, should be retained and repaired. Where new surfacing is required, the materials should be sympathetic to the character of the traditional building.

#### Access

In many cases, the means of getting vehicular access to a traditional farm building may seem obvious; the building may lie within a farm group with a clearly defined and suitable access track or a roadside barn may already be served by a roadside gateway. However, more isolated barns generally have no existing or appropriate access and providing a new track could have a significant impact on the wider landscape. For many uses, the presence of an existing suitable access will be fundamental to the acceptability of any new use in principle. New access roads are usually so intrusive in the landscape, a change of use of the building requiring a new vehicular access will seldom be appropriate.

The following factors will help to minimise the impact of the access routes:

• Access tracks should follow the contours of the land and existing field boundaries

- Avoid removing traditional boundaries and interfering with the height and position of roadside walling; reinstate boundaries where practicable
- Natural materials, or surface dressing reflecting the colour of the local soil or stone, will generally be the least intrusive, whilst tarmac, concrete and artificial blocks should be avoided
- Consider using surfaced tyre track widths ( 'wheelings') with grass down the middle instead of using hard surfacing along the entire width of the track
- Where altered tracks or access junction works are likely to harm the undeveloped character of the area, consider alternatives to direct access such as detached parking areas nearer to the road.

## Services and other pipework

Most conversions will require connections to off-site services such as electricity, telecommunications, water and drainage, together with onsite amenities like oil and gas tanks, bin storage, external lighting and septic tanks.

Additions such as overhead line connections, fuel tanks, refuse and recycling bins, meter boxes, antennae and pipework can all be visually intrusive and detract from the character of the building and its setting. A separate planning permission may also be required so it often makes sense to consider their inclusion in the scheme from the outset.

New services such as mains electricity or telephone connections should be undergrounded where possible and their impact on any archaeological or wildlife interest within the route considered.

Fuel tanks and bins should be sited discreetly and appropriately screened within walled enclosures. Additions to the building such as aerials, satellite dishes and meter boxes should also be positioned discreetly.

Traditional farm buildings were often not designed with gutters and other pipework; however, they will normally be required for conversions. Guttering should be simple in design, such as metal half-round guttering, painted black, and supported by rise-and-fall brackets fixed to the masonry. Fascia boards are unlikely to be acceptable.

## 6.2.2 Wildlife

Traditional buildings, particularly field barns, can often be an important habitat for plants and wildlife. These could include protected species such as barn owls, nesting birds, bats and newts. Conversion works can displace these habitats so it is important to ascertain whether any protected species are present before any development begins as they are protected by law.

Simple design measures, such as retaining access to the roof space or to the eaves, or the provision of bat tiles or nesting boxes can compensate for the loss of habitat by providing new opportunities for wildlife.

For more information about incorporating wildlife-friendly measures into conversions, see Appendix B.

# 7.0 Agricultural development

- 7.1 Design approach:
  - 7.1.1 Key factors
  - 7.1.2 Sustainable design
  - 7.1.3 Design quality
- 7.2 Design details:
  - 7.2.1 Agricultural buildings
  - 7.2.2 Silos, silage clamps, slurry stores
  - 7.2.3 Landscaping
  - 7.2.4 Lighting
  - 7.2.5 Access tracks

# 7.1 Design approach

This section relates primarily to the construction of new farm buildings and related farm development and sets out the key factors the National Park Authority expects to be addressed in proposals for farm development.

## 7.1.1 Key factors

In recent years a number of factors, such as the economics of dairy and hill farming, the severity of winters, farm diversification and growing interest in renewable energy technologies, have led to a demand for new farm buildings and other farm development.

The National Park Authority recognises that farmers are stewards of the landscape and that it is important for both the landscape, and the economic and social wellbeing of communities in the Park that farm businesses are successful.

The importance of farming to the local economy and local communities cannot be overstated. However, it is also important to ensure that development associated with farm businesses does not harm the landscape, wildlife or heritage of the National Park.

There are a number of factors that need to be addressed to ensure that the impact of farm development is either neutral or can be reduced through mitigation measures, including:

- **Siting.** New agricultural buildings and other structures should be sited in places where they are not dominant or discordant features in the landscape
- **Design.** Large agricultural buildings need to be designed so that their apparent scale is sympathetic to the landscape and surrounding buildings
- **Materials.** The materials and finish of buildings and structures should blend in with the colours and hues of the natural landscape or village

- **Planting.** Proposals should include adequate landscape planting to soften the visual impact of new development and improve the landscape setting of the whole site
- **Lighting.** Agricultural buildings should be designed to avoid light pollution by keeping the number of rooflights to a minimum and by screening open-sided buildings. External lighting should be kept to the minimum necessary for safety and security.

## Context appraisal

As one of the key factors in any proposal for farm development will be its impact on the natural beauty and cultural heritage of the landscape designers are advised to start with a context appraisal. See Chapter 2.

Proposals for farm development raise some specific questions that should inform the design:

- What contribution do existing farm buildings, walls etc make to the character of the landscape? Are they prominent or do they nestle within the shape of the land or a group of trees?
- How are buildings in the farm holding arranged? Is there a predominant orientation of buildings and spaces, perhaps for historic or practical reasons? Is the group closely arranged or dispersed?
- Are the existing buildings all of a similar height? Which materials are used? Which materials work well in the landscape and which should be avoided?
- Will the new building or structure be publicly visible? Are there public rights of way that pass close to the site?

• Are there features of the site that should be retained? (e.g. drystone walls, sheepfolds, trees, flagged or cobbled surfaces).

## 7.1.2 Sustainable design

There are often good practical land management and business reasons for adapting or improving the design of farm development to incorporate simple, sustainable design features. Farms offer good opportunities to benefit from wind, hydro and solar energy that can reduce energy costs or bring in income, and also for managing water supply and run-off in a more sustainable way that reduces flooding and provides water for stock.

## Solar energy

New farm building roofs tend to incorporate modern roofing materials so it is worth considering incorporating solar panels. To minimise their visual impact, they should be sited on the least prominent roof slope or on a ground mounted system, possibly abutting the wall of a farm building. Solar panels should be black, non-reflective and with black surrounds and mounting frames.



Solar panels added to the roof of a modern farm building at Wharfe House Farm, Hartlington

## Ground and air source heat pumps

Ground source heat pumps can need collecting surfaces to extend over considerable areas. New development on farm holdings can therefore provide an opportunity to incorporate pipe layouts for this type of heating system providing the surrounding ground is suitable for excavation.

Air source heat pumps can provide an alternative to oil and liquid petroleum gas (LPG) heating. To gain maximum benefit and for the unit to operate efficiently, they are usually ground or wall mounted on a south-facing aspect where they can be sheltered from high winds.

## **Biomass**

Biomass boilers may be an appropriate solution to heating for many farm holdings, as they require more storage space for the fuel than oil or LPG. Many farms will have large storage areas available and may have the space for any associated new buildings. It is also likely that the necessary infrastructure is already in place to accommodate the delivery of pellets. The impact of any new storage buildings can be minimised through careful siting and appropriate screening.

There is limited scope in the National Park for large scale wood fuel operations such as short rotational coppicing. However, on farm holdings where there is access to appropriate timber resources, wood fuel and log boilers may offer a viable solution.

## Wind turbines

Wind turbines of a domestic or human scale will be a good solution for many off-grid remote properties and isolated farms where mains electricity is unavailable. The key factors to be considered will be the impact on the local landscape, potential for noise in tranquil areas and potential conflict with birds or bats.

Small wind turbines with a power rating up to 15kW and a height of 15 m should be capable of successful assimilation into the National Park landscape and produce sufficient energy to run the heating and electricity supply for a farmhouse. Existing landscape features such

as trees, buildings and the topography of the land can help to minimise the visual impact of small turbines. Turbines should also be finished in a colour that allows them to blend in with the landscape.

#### Anaerobic digestion

Anaerobic digestion technologies produce energy through recycling waste from farm based businesses. Electricity and heat is produced through the processing of certain feed stocks such as animal slurry, manure, chicken litter and grass silage to create a methane-rich gas, which is then burnt. Current technology is viable due to economies of scale and therefore only the larger farms in the National Park are likely to be capable of supporting such plant for their own waste. Any buildings required for the facility should be accommodated amongst or adjacent to existing farm buildings and not in open or exposed landscapes to minimise visual harm.

## Hydro power

Many farm holdings have watercourses crossing their land. If there is a sufficient flow of water all year round with the scope for a good connection to the National Grid, there may be an opportunity to install a micro or small scale hydro scheme. Redundant farm buildings can be used to house any associated plant/machinery.

High head hydro schemes tend to be the most suited to the National Park. A typical scheme would utilise water from an upland stream which is taken downhill using underground pipework to reach the turbine. The turbine is often enclosed in a powerhouse.

Hydro power schemes can be complex and expensive and so they need to be designed, installed and managed carefully to avoid any unacceptable impact on the environment and on neighbours.

#### Sustainable drainage and water management

The National Park suffers from problems of flash flooding and rainwater run-off following heavy rainfall. The erection of large farm buildings and concrete surfaces can add to these problems by covering permeable land and introducing positive drainage which speeds up water run-off and flooding.

Natural drainage systems that use cost effective solutions with low environmental impact to drain away surface water run-off should be considered. These will enable the collection, storage, and cleaning of rainwater before allowing it to be released slowly back in watercourses or to be reused on the farm for animal watering or for washing.

## 7.1.3 Design quality

There can be scope for innovative thinking in the design of farm buildings and structures, particularly where issues like the impact on the landscape or how to incorporate renewable energy technologies need to be addressed.

The use of the right materials and a good landscape planting scheme will often make the difference between an unsightly farm building and a building that has a positive or neutral impact.

# 7.2 Design details

This section provides more detailed guidance for designers who are less familiar with the Park or who require more advice on the quality of design expected by the National Park Authority.

## 7.2.1 Agricultural buildings

The key factors the Authority expects to see addressed in proposals for new farm buildings are appropriate siting, landscape sensitive scale and massing, and the use of materials that are appropriate for the landscape and respect local building traditions.

Designers are advised to ensure that their proposals meet with the Department for Environment, Food and Rural Affairs (DEFRA) Guidance on Cross Compliance in England, 2015 that includes guidance on animal welfare requirements.

## Siting

Decisions on where new buildings are sited are heavily influenced by the needs of the farming operation – practical considerations, such as access and how the building and land around it will be used. Nevertheless, the impact of the building on the landscape will be a major factor in considering a planning application. The following factors should be considered to minimise the impact of the building:

- Where possible, the building should be sited next to existing buildings, within the existing farm holding. It is advisable to try to keep the group of buildings as tightly knit as practical considerations will allow and avoid a spread of buildings and other structures across a wide area
- Use existing features of the landscape to help to screen the building, e.g. trees, hedges, the topography of the land, existing buildings, stone walls etc
- Work with the shape of the land rather than against it new buildings should not brutally dominate their surroundings. Avoid

breaking the skyline or steeply sloping land. Buildings should be dug in to sloping land and not built up

• Keep within existing field boundaries and avoid building over existing walls, sheepfolds, and tracks, especially if these features are particularly old and illustrate historic farming practices or how the farm has developed through generations



Replacement agricultural buildings to house cattle at Cote Farm in West Burton. The buildings relate well to the main farmhouse, existing access track and services and do not break the skyline

## Scale and massing

The shape and size of modern agricultural buildings tends to be influenced by animal welfare requirements, practical aspects of the farming operation, ease and cost of construction, economies of scale, and a desire to provide for future needs. This has resulted in a trend towards larger, ventilated and better lit buildings. Unfortunately, the result can also be a building of a size and mass that exceeds a human scale and can dominate its surroundings and the landscape.

It is therefore important to balance the functional requirements of the building with the need to fit in. There are a number of ways to do this:

- The apparent size and mass can be reduced by dividing the building into smaller units by breaking the roofline, introducing different ridge heights, or by physically separating elements of the building
- Large, rectangular buildings with a single continuous roof span should ideally be avoided. Narrower buildings will have lower roof heights and large roofs can be subdivided into double pitched roofs
- New buildings/structures should fit in and relate well to existing buildings of a similar type. Different sized buildings can be put together as long as the proportions are the same
- Keep the roof pitch similar to existing buildings, avoiding steep or shallow pitches



A broken ridge line and narrow span will reduce the apparent size and mass of the building.  $\ensuremath{\mathbb{C}}$  J Innerdale.

## Materials and finish

Modern farm buildings usually consist of a portal frame clad with breeze blocks/concrete panels, timber boarding and a pre-coloured fibre cement roof.

Cladding the upper part of the walls with vertical timber boards (Yorkshire boarding) with spaces between the boards is a well established practice in the area. The boarding provides ventilation and has a better visual finish than alternative forms of cladding. The timbers can be darkened using a dark brown matt finish wood stain to meet the requirements of particular sites. This type of cladding can also remain untreated and be left to weather naturally to a silver/grey. Finishing with a red/orange coloured timber stain should be avoided.

The lower walls should generally be clad in local stone up in a height similar to that of drystone walls in the vicinity. Pre-coloured concrete panels or block work should only be used for external walls concealed from public view. Coloured panels should be natural earth colours such as dark brown or dark grey.

## Roof

The roof is usually the most dominant feature of a modern agricultural building but there are opportunities to minimise its visual impact:

- The use of integral, pre-coloured, fibre cement roofing sheets has a wide range of visual benefits. It is the least reflective roof material and is available in a wide range of colours. It should generally be darker in colour than the walls and in most locations; the best roof colours to use are dark, regressive colours such as dark brown or dark grey.
- Slight overhangs at the eaves can help to protect the cladding, and can also create a shadow line making the building less prominent
- Try to avoid having the building all one colour as this tends to emphasise its size. Avoid using green coloured materials, especially lighter greens, as they tend to clash with natural greens
- Rainwater goods should be pre-coloured black, dark brown or dark grey

## Rooflights

Rooflights are necessary for buildings housing livestock. However, they will make the roof more conspicuous as a regular pattern of reflective or internally lit rectangles against a dark background will draw the eye. Steps can be taken to reduce the effect:

- Rooflights should be positioned on the least publicly visible roof slope. Where a double pitched roof is employed, rooflights can be positioned within the valley created by the two roofs
- A few larger roof lights will be less conspicuous than rows of many smaller ones but will still allow natural light to penetrate the interior of the building. Ideally, there should be no more than two rooflights per bay per side. A single row of rooflights just above the eaves level will be better than multiple rows or rows higher up the roof
- Glass reinforced plastic rooflights appear less reflective than polycarbonate rooflights, after weathering
- In some buildings, depending on their position in the landscape, openings in the gable may be preferable to lots of rooflights. An overhanging roof would also help to reduce the effect of internal light from the opening



Cattle building at Cote Farm, West Burton. The owner has incorporated pre-coloured grey concrete panels for the lower walls and vertical untreated Yorkshire timber boarding for the upper walls, rainwater goods are black.

## 7.2.2 Silos, silage clamps and slurry stores

Silos, silage clamps and slurry stores can have a significant visual impact if not carefully considered. As with buildings, the key issues to get right are siting, scale and massing, and materials.

## Silos and hoppers

Animal feed silos and hoppers have a wholly modern appearance and can be particularly stark features in a natural landscape. If existing traditional buildings cannot be used to store feed, then the following should be considered:

- Silos and hoppers are best located next to other agricultural buildings within the farm complex
- Feed silos and hoppers should be pre-coloured by the manufacturer in a dark matt colour e.g. dark brown or dark grey. This is preferable to a bare metal structure or painting in-situ.



A dark brown metal feed hopper adjacent to the B6160 in Bishopdale. The hopper is poorly sited but finished in a matt dark brown colour.

## Silage clamps

Silage clamps must be designed so that the base and walls are suitable for the conditions of the site and to ensure effluent cannot escape. The following points should be considered:

- The clamp should ideally be located between other agricultural buildings and be roofed over
- Ideally they should be set into rising land as this will reduce the apparent wall height
- Native tree and shrub planting should be used to minimise the apparent wall height of the clamp. *For more information about suitable native species, see Appendix C*

Silage clamps and slurry stores must adhere to Government Guidance - Storing Silage, Slurry and Agricultural Fuel Oil, (DEFRA, 26 March 2015). See link:

https://www.gov.uk/guidance/storing-silage-slurry-and-agricultural-fuel-oil.

## Slurry stores

Slurry stores tend to be large, round, metal or concrete structures and can be unsightly and prominent features in the landscape. Steps can be taken to minimise their impact:

- Ideally they should be sited next to existing agricultural buildings within the farm complex
- They should be sunk into the land to reduce their prominence unless ground conditions prevent this
- The upper, external walls should be screened either by earth bunding, drystone walling, a native hedge or tree planting

• The external walls should be pre-coloured in a dark brown or dark green, with a matt finish



This slurry store at West End Farm, Carperby is partially below ground level. The external walls are pre-coloured dark green in a matt finish. It is also partly screened by a dry stone wall and other farm buildings.

## 7.2.3 Landscape planting

There are a number of factors that can help to reduce the visual impact of new agricultural buildings and structures in the landscape:

- It is usually not necessary to completely hide a new building behind thick screens of trees or other planting. Existing features should be used and added to if necessary. Existing trees and walls or hedges can help to break up the mass of buildings in important views
- Spoil from any excavations necessary to site the building should be used as bunding to partially screen the buildings and can be planted up with shrubs
- Planting informal groups of trees and shrubs will appear more natural than regimented formal planting. New planting should aim to reflect the character and scale of the local landscape
• Newly planted trees and shrubs will need protecting from stock, weather, and trampling. A plan of regular maintenance and replacement of dead or dying plants is recommended

For more information on landscape planting and details of appropriate native species, see Appendix C

# 7.2.4 Lighting

The dark skies and landscapes of the National Park are one of the National Park's special qualities. To protect this quality, proposals for farm development should be designed to avoid light pollution.

Adequate lighting is clearly necessary for safety, security and good animal husbandry. However, the design, number, position and intensity of light needs to be appropriate for the location and the environment.

There are a number of guidelines to minimise light pollution in the landscape that designers should follow:

- Proposals for new farm development should demonstrate where new external lighting is needed. It will need to be justified and should be the minimum necessary.
- Light pollution at night is most obvious from rooflights and open sided cattle buildings. The number of rooflights should be minimised on new buildings and open sides screened where possible by buildings, planting or topography.
- Light fittings should be directed downwards and shrouded to avoid light spill into the surrounding countryside. Avoid floodlighting
- A smaller number of well positioned, low powered lights will be better than one single, high powered light

- Sodium lights should be avoided for external lighting as they can have a yellow/orange glow that can appear out of place in the countryside
- Lighting should be set low down below the eaves height to reduce light spill and ideally limited to doorways and access points Internal lights can be suspended to reduced the number of lights needed and to avoid light spill through rooflights.
- External lighting at upland sites or in exposed positions on the valley side can be very prominent. External security lights in such positions should be avoided or landscape planting introduced to reduce their impact on wider views in the landscape
- Motion sensors or timing switches will minimise the time lighting is on.

# 7.2.5 Access tracks

New or altered access tracks for agriculture, game shooting and other acceptable uses can have a significant impact on the appearance of the landscape, archaeology and biodiversity of the area.

The following advice will help to minimise their impact:

- New access tracks should follow the contours of the land and existing field boundaries to avoid cutting across fields and the wider landscape
- Avoid removing traditional boundaries and interfering with the height and position of roadside walling
- Light coloured materials such as limestone or hardcore should be avoided as this can increase the visual prominence of the track

- Natural materials or surface dressing reflecting the colour of the local soil or stone will generally be the least intrusive and should be compatible with the surrounding character of the area. Nonpermeable surfacing such as tarmac, concrete and artificial blocks should be avoided
- Consider using surfaced tyre track widths ('twin wheelings') with a grass strip down the middle instead of using hard surfacing along the entire width of the track

# 8.0 Signs and advertisements

- 8.1 Design approach:
  - 8.1.1 Key factors
- 8.2 Design details:
  - 8.2.1 Shopfront signs
  - 8.2.2 Directional signs
  - 8.2.3 Banner signs and flags

# 8.1 Design approach

Visitors are attracted to the National Park for its scenic countryside and attractive towns and villages. It is important for businesses and the health of the local economy that these qualities are protected.

Signs have an important part to play in advertising local businesses, services and tourist attractions. This needs to be balanced with respect for the countryside and local architecture.

This chapter provides design guidance on all types of signs and advertisements that require advertisement consent. This section sets out the key factors the National Park Authority expects to be addressed in proposals for new signs.

# 8.1.1 Key factors

Advertisements and signs should function well and be sensitively designed and sited to fit into the locality. Designers should consider all of the following components of an advertisement and how they work together:

- size
- shape
- colour
- materials
- lettering

- illumination
- means of fixing
- location
- impact (including cumulative)
- public safety

Well designed and sited signs can enhance the environment whereas poor design can detract from it. Less is more, in terms of advertisements. Too many signs or signs that are too big give a cluttered and untidy appearance and detract from the appearance of the business. Insensitive signs can downgrade the visual quality of a town or village, putting off visitors and potential customers.

A balance should be struck between the level and style of signage and its impact on the wider area. One small, well designed sign can have a more positive effect than lots of mismatched signs of all different shapes and sizes. The general approach should be for subtle, high quality signs which are appropriate to the context, whether an individual building or open countryside.



Signs can add vitality and interest to the street scene but sometimes a restrained approach can be more effective. Signs in Grassington..

# 8.2 Design details

This section provides more detailed guidance for designers who are less familiar with the Park or who require more advice on the quality of design expected by the National Park Authority.

# 8.2.1 Shopfront signs

Shops and their frontages are important in making a town or village an attractive, pleasant place to visit. The quality and appearance of shopping environments can shape a visitor's experience and perception of the National Park. Historic shopfronts and well designed new ones will add to visual interest and character and encourage greater retail activity.

Historic shopfronts can be significant in their own right as well as contributing to the character and appearance of the community. They are also a diminishing resource and efforts should be made to retain them.

# **Traditional shopfronts**

A key factor is to maintain the character and proportions of traditional shopfronts. The repair and maintenance of an existing shopfront is always preferable, and more cost effective than replacing it.

Where a traditional shopfront is being replaced, the replacement should follow a traditional design, ideally constructed in painted wood and with a balanced appearance. Stall risers, columns and other significant features should ideally be retained. New or replacement advertisements including fascia and hanging signs need to be carefully considered in relation to the overall design and appearance of the shopfront, the host building and the wider streetscape.

The design of a wholly new shopfront should respect the scale and proportions of the building and the size and arrangement of existing openings. Some buildings will be able to incorporate a single, large display area whereas others may need a more considered approach.

# Fascia signs

The fascia is the part of the shopfront above the windows that is designed to be the main location for a shopfront sign. A well designed fascia sign can therefore complete the image of a high quality shopfront. To achieve this, new fascia signs should ideally:

- be of a suitable size, in proportion with the shopfront and scale of the building
- fit neatly into the fascia, clear of any framing detail
- be clear and easy to read
- consist of hand painted lettering or raised metal/timber letters with a matt finish
- have a basic level of information e.g. business name only
- consist of dark colour letters on a light background



A traditional shop front with hand painted lettering. Elijah Allen & Son, Hawes.

Designers should ideally avoid:

- obscuring the architectural detailing of the shopfront
- projecting box signs that fit over the shop window or architectural features of the host building.
- oversized lettering and too much information
- plastic or highly reflective materials
- garish colours which will present a poor quality image
- poorly designed Illumination
- images from clip art or cartoons

# Hanging signs

This type of sign is normally used to identify a shop from longer distances. It is a traditional approach which works well when the sign is designed to enhance the character of the building.

In a traditional setting, hanging signs should:

- be located above the fascia sign but below the cill of any first floor windows
- be fixed by a metal bracket secured into the mortar joints of the stone work, in a style and size appropriate to the building
- consist of traditional materials including timber and metal in a muted colour scheme
- be limited to one per shopfront/business

#### Designers should ideally avoid:

- obscuring architectural features such as windows
- oversized signs out of proportion with the shopfront
- materials such as acrylic, Perspex or other glossy finishes
- too much information
- chunky box signs
- illumination



A discreet hanging sign with an ornate bracket at Grassington.

# Signs on glazing

Window vinyls or stickers can obscure the shop window and detract from the appearance of the building to the detriment of the business. Applying too many can overemphasise the commercial character of the building or obscure views of activity inside and create a dead frontage. Ideally such advertisements should be avoided.

Instead, etched glass can be attractive and provide a more subtle form of advert which will ensure a degree of privacy to the internal shop space. Small vinyls can be used to give the effect of etching. Carefully designed individual vinyl letters or symbols applied to the glass may be acceptable if they are minimal in nature and have a high quality appearance. This can be an appropriate form of advertisement where the shopfront does not have a fascia or traditional frontage.



A good example of window etching in Reeth

# Buildings without traditional shopfronts

Some businesses may occupy different types of buildings for example, barn conversions. Traditional shopfronts would be not be suitable here, but alternative forms of advertisement, such as individually applied letters, would.

It may be necessary for national businesses with a corporate identity to tone down colour schemes and produce signs in more subtle or discreet form and materials, particularly in conservation areas or on listed buildings.



Individual lettering at the bSedbergh Spar store.

# 8.2.2 Directional signs

Directional signs come in many forms including freestanding signs, tourist information signs and A boards.

# Freestanding signs

These types of sign are used to direct traffic or pedestrians to a nearby location. They can consist of fingerpost, hanging or pole mounted signs.

These signs should be designed and located to fit in with the rural landscape and not be prominent in key views. A direct and simple approach is best and more relevant to a pedestrian or motorist.

They should contain basic information such as the business name and directional arrow and preferably be constructed of timber and erected on timber posts. A restrained colour scheme with a matt painted finish

can be subtle but effective when viewed against a backdrop such as drystone walls, trees or buildings.

Where there are a number of businesses, a single combined sign will avoid an unsightly clutter.

# Tourist information signs

Brown tourist information signs are an alternative type of discreet directional sign. These highway signs do not require consent from the National Park Authority. Further advice can be obtained from the highway authorities, North Yorkshire County Council or Cumbria County Council.

## A boards

Double sided boards (known as A boards) are usually placed on the forecourt of a business. Poorly located boards can create a negative environment for pedestrians and distract motorists. Too many can result in visual clutter when combined with other signage or street furniture.

Displaying advertisements on adopted highway land (e.g. public pavements) requires permission from the highway authority as well as the National Park Authority. The highway authority has the power to removed unauthorised items that are dangerous or distract motorists.

A hanging sign attached to the front of the relevant premises is often preferable. Otherwise, it is recommended that there should be no more than one A board per business and that it displays basic information clearly.

# 8.2.3 Banner signs and flags

Advertisement hoardings and banner signs can have a negative impact on the local environment. They can be visually intrusive and detract from the appearance of the countryside, particularly if they are large and made from materials such as plastic. Flag advertisements displayed on freestanding poles can have a similarly negative visual impact due to their height which makes them visible over large distances. It can be difficult to make out the wording on flags due to their movement and consequently, flags are a poor form of advertisement as well as detracting from the appearance of the countryside.

Banner signs and flags can be an aggressive form of advertising when used as permanent signage and are rarely appropriate in the National Park.

# **Appendix A: Materials**

- A.1 Materials in the Dales
- A.2 External walls
- A.3 Roofing
- A.4 Windows and doors
- A.5 Surfacing materials
- A.6 Boundary treatment

# A.1 Materials in the Dales

The interaction of man with nature throughout history has produced a landscape of remarkable beauty and distinctive character. Whilst geological and natural processes have initially created and shaped the Yorkshire Dales, mankind has fundamentally changed it by making use of the local stone, leaving scars behind and introducing numerous structures.

Historically, local stone was extensively used for building walls, roofs, bridges and other structures, and for paving external and internal surfaces. It is a significant contributor to the distinctive character of the built environment of the Dales. Only since the advent of the railways in the mid-19th century have imported materials been introduced into the area on any significant scale.

This appendix describes the materials and treatment of individual building elements. It is a resource for designers unfamiliar with the distinctive materials and building traditions of the National Park.

# A.2 External walls

## Stone

Most traditional buildings in the National Park are built from local sandstone and limestone. The type of stone used generally reflects the underlying geology of the area and, more than any other component, the use of local stone establishes the character of the building and its relationship to the landscape and the built environment. However, in some areas there is an occasional mix of other materials brought in historically from further afield by the railways, particularly in Wensleydale and Ribblesdale. These tend to be the exception to the prevailing material and unlikely to be suitable for new development if a local distinctiveness is to be preserved. The type of stone to be used, the coursing, the dressing or finish and pointing, together with the quoins (corners) and the door and window surrounds - cills (base of the opening), lintels (head of the opening) and jambs (sides of the opening) are all important factors which, done well, provide a consistent and quality appearance to a new building.

#### Type of building stone

Sourcing new or reclaimed stone to achieve a good finish can be a challenge. Matching reclaimed stone is an option where the stonework needs to tie into existing weathered stonework. However, reclaimed stone is not always available.

Repair works and extensions can be carried out well in newly quarried stone providing the right type of stone is sourced and the design allows for a clear visual break between old and new.

Choosing the right type, shape and the finish of the stone will be key to achieving a good match. Where practical, the use of a locally sourced stone of corresponding type to the typical stone used in the area is the right approach. Building stone is no longer quarried in the National Park but new sandstone, gritstone and limestone are still available from working quarries just outside its boundary. Imported foreign stone, whose consistency, longevity and performance is unknown, is likely to weather very differently from local stone and should not be used.

#### Walling materials



#### Sandstone



#### Limestone





Ragstone

Lime washed stone



Lime washed stonework

Lime washed stone or render has both functional and aesthetic tasks to fulfil. As with the mortars, the choice of product is dependent on the type of construction. Whereas modern cavity walling usually involves cement-based or gypsum-based products, it is essential that for traditional solid wall construction, lime-based materials are used. In contrast to modern products, which generally have a flat appearance, lime-based finishes are aesthetically more pleasing and organically in keeping with traditional dales houses. In the past, such materials were employed externally not only to protect the stonework from the elements, but also to make an architectural statement. Houses were white/lime washed to become landmark buildings or in more densely settled towns and villages, such as Dent, so that daylight was more effectively reflected from the narrow alleys into the interiors. Furthermore, houses with a render – some even with ashlar lines – denoted a higher social status than those with exposed rubble masonry, as the owners could afford to cover the inferior stonework and therefore provide the building with a neat overall design.

Unfortunately, since the Victorian times, the removal of lime wash, plaster and render in order to display the stonework underneath has become fashionable, and in many cases this has not only resulted in a loss of historic lime finishes and inferior appearances, but also damp issues as the now exposed, poor quality walling was never designed to deal effectively with moisture movement. The most obvious solution is to reinstate the breathability of the structure by re-introducing lime pointing and plaster and, where appropriate, lime wash and/or render. Intrusive modern methods, such as tanking the interior, are likely to only cause further problems elsewhere in the structure and accelerate decay there, and are therefore not recommended.

# Coursing

There are many ways of laying stone but they can generally be separated into three categories of walling:

**Random rubble** (uncoursed walls built from irregular shapes and sizes of stone). This is common in limestone prevalent areas such as Malhamdale, but there are examples of sandstone and gritstone buildings throughout the Dales.

**Brought to course** (similar to random rubble but is roughly levelled to courses usually corresponding to the height of the quoins) This is possibly the most common form of walling of sandstone and gritstone buildings within the Dales

**Coursed** (each stone is laid to a course but each course can be constant or variable). Coursed stonework is commonly found on more 'polite' or Victorian town-style architecture.



#### Random rubble walling



New masonry brought to course



Coursed masonry

#### Watershot masonry -

This style was popular in Victorian times and involved squared, dressed stone laid sloping slightly downward to allow water to run off the masonry. Usually only applied to the front (public) elevation.





Watershot masonry viewed from the side (left) and front (right).

# Stone dressing

Dressing is the detailed hand tooling of a stone surface to give it a certain surface texture. This can range from fine parallel lines to being so pronounced with a deeply chiselled profile (vermiculated) that it provides a relief. Traditionally, stone dressing was carried out by stonemasons using hand tools, but with industrialisation, machine tooling was introduced. Today the dressing of stone surfaces is still done by hand, but with power tools, such as pneumatic chisels.

New stone is also readily available as quarry dressed where the quarried stone has been roughly shaped but the exposed face left uncut and rough, which can be a good match to the hand-quarried stone seen on traditional dales buildings and bridges. Where a more refined stone finish is appropriate, a sawn-edged machine surface rarely gives a good finish and further hand dressing is usually required.



Stone door surround with hand tooled finish

# **Pointing/mortar**

Pointing is the finish of the joints between the stones, after the stonework has been completed or during maintenance works to repair old pointing that has failed or eroded. The choice of mortar used for both setting and pointing is dependent on the type of construction.

Whereas modern cavity walling usually involves the employment of cement-based products, it is essential for traditional solid wall construction that lime mortars are used (see 'Lime' below). The style of pointing is dependent on the type of masonry: Whereas rubble stonework generally has a less accurate or even purposefully 'slobbered' appearance, it is important that coursed masonry is neatly pointed to emphasise the linear pattern(s) created by the coursing.

The colour of the mortar to be used should conform with that of the stone, although this is less easy to achieve where there are significant variations in the colour of the stone. The sand/lime/cement mix of the mortar can achieve the appropriate colour. For example, a pale grey limestone wall requires a light grey mortar, achievable through the use of silver sand and lime within the mortar mix. A buff sandstone wall requires a darker brown or buff coloured mortar with a proportion of yellow or brown sand within the mortar mix. The incorporation of course sand in the mortar mix provides subtle variation in colour and texture.



A darker mortar might have been more appropriate for this sandstone wall. A rougher finish, to tie in with rough faced stonework, can be achieved through the addition of river sand within the mortar mix



A rough mortar matched with rough faced stone.

Different mixes are appropriate to different buildings, for example lime mortars were historically used in traditional buildings. On all stone (and brick) buildings, the mortar needs to be softer than the stone or brick so that the former erodes (and can be repointed) rather than the latter.

Historic buildings are solid wall structures and need to be breathable to prevent trapped moisture and consequently stone erosion and internal damp. Modern buildings work under a completely different system being watertight cavity wall structures. Problems arise when both construction methods are mixed as they are incompatible.

Mortar used in new builds is usually cement-based although it is possible and often desirable to use lime-based mortars to achieve a good finish. Lime mortars do not need movement joints.

#### Lime

Virtually all historic buildings were constructed using lime mortars, allowing both breathability and movement of the structures, which means that damp evaporated harmlessly from the interior and buildings were able to settle over time without causing structural cracks.

From the mid-19th century onwards, the use of cement and gypsum became more common, making it possible to build much faster, which is why their use became so widespread. However, these materials are unsuitable for traditional solid wall construction, as they set very hard and are impervious to moisture; consequently, damp can enter the interior through external (often hairline) cracks caused by the movement of the building and/or moisture will evaporate through the softer stone (instead of the sacrificial mortar joints), potentially causing long term damage to the stonework.

In the past, lime was not only used for mortars but also renders, plasters, and lime washes so moisture could be more effectively wicked out of the building, as well as for aesthetic purposes.

Lime-based products in the Dales were often locally produced, thus there are variations in appearance which are also of historic interest. Consequently, when working on old structures, it is paramount that lime is used, to match the historic mixes, if possible. Modern lime products include most commonly putties, natural hydraulic limes (NHLs) and 'hot' limes.

A common ratio for lime mortars/plasters/renders is **1 lime: 2 sharp sand: 1 soft sand**, and, for plasters, an additional ¼ to ¼ goat hairs, depending on the coat. Lime wash is diluted 1 lime: 2 water. For setting mortars of non-hydraulic limes, brick dust or other pozzolanic additives may be included to help setting deep inside the wall. It is important that all lime products only contain additives that are compatible with the properties on an historic structure, which means that cement, gypsum and other water-repelling materials must not be included.

Whilst using lime is not more difficult than cement, it does require a craftsperson who is experienced and skilled in its use, as wrong application will ultimately result in its failure.

There are different methods of pointing stonework appropriate to the Dales.

**Flush pointing**. This is bringing the mortar to the stone face then brushing it to give it a rough finish. Flush pointing is traditionally used for pointing, or repointing traditional stonework in the Dales. The joints or gaps between the stones should be relatively narrow (no more than 10-15mm) so that the stone face is the predominant feature of the wall.



Flush pointed masonry

**Slobbered mortar**. This is commonly used on historic buildings in the Dales to disguise uneven stonework.



This wall has slobbered mortar across the stone to the right but has the mortar raked out for re-pointing to the left.

Whilst there are examples of recessed pointing to more refined buildings, it is not typical of dales buildings. Ribbon pointing is also not a traditional technique and should be avoided. Drystone buildings are not uncommon in the National Park but they tend to be functional buildings like barns or workshops. However there are many typical Cumbrian drystone slate houses in the western parts of the Park.



Drystone masonry

# **Quoins and surrounds**

Quoins are masonry blocks at the corner of a wall. They provide strength to the vulnerable corner of the wall but are often developed as a decorative feature, creating an impression of permanence and strength, and reinforcing the onlooker's sense of a structure's presence. In typical dales buildings the quoins wrap around the wall with their longest sides oriented horizontally, first left, then right about the corner.



Quoins can come in different shapes and sizes.

Window and door surrounds throughout the National Park include the use of mullions, cut stone cills, lintels and jambs, flag cills and lintels and quoined jambs.

Both quoins and surrounds will often be of a more durable material than the walling, such as a gritstone, although they can be of the same stone type as the external walls. There are, however, examples throughout the Dales of limestone buildings with sandstone quoins and surrounds and vice versa.

New stone quoins and surrounds can appear in harsh contrast to the stonework if they are machine cut with no tooling. Tooling the face of

the masonry by hand, using either powered or non-powered tools, depending on the context, can give a good finish.



Machined stone lintel and cill on a modern house. A textured or tooled stone might give a better finish.

## **Other materials**

The use of high quality alternative materials to stone can be an option for new construction particularly in non-vernacular designed buildings and extensions, provided they respect the special qualities of the National Park. There are no barriers to the use of any material provided it is used appropriately with the aim of harmonising with the existing built environment of the Dales. There is a wealth of materials that could be considered; this guide concentrates on only a few materials that have been used successfully in the Dales:

#### **Timber cladding**

Durable, locally sourced timber cladding or shingles can be a sustainable external walling material for lightweight additions. Timber shingles are made from split logs and have an appearance more like timber tiles than boards. As a cladding material, timber can blend well with both traditional and contemporary design depending on how it is incorporated and finished. The following points should be considered:

- Design for durability by using naturally durable local timber species including oak, European larch and Douglas fir
- 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
- Unstained timber boarding and shingles will naturally weather with age to a silver-grey colour which can blend in well with the weathered local natural stone of the Dales



New classrooms at The Boyle and Petyt Primary School Beamsley. Architect:J Wharton.

#### Glass

Structural glass can be incorporated into new structures and extensions to give light and airy interiors. Light pollution and reflection from large expanses of glass can be reduced by deeply recessing the glazing and using non-reflective or opaque glass.



Glass and steel with stone and slate at Grassington Bus Shelter

#### Metal

More commonly used in roofing, there is a variety of metals available, with different attribute. Steel and aluminium have high strength and low density properties which make them suitable for use in lightweight glazed additions to buildings. They have a natural, built-in durability and are also usually treated to further withstand weathering. This coating can be in a range of colours which can enhance the appearance of the material.

fig. x Structural steel framed extension



Steel framed entrance to YDNPA offices.

Metal can also be used as a cladding material; once weathered producing attractive finishes such as the bluish patina of zinc or the light green patina of copper. It is durable, corrosion-resistant and has the ability to form complex shapes.

Weathering steel, such as COR-TEN, is a weather-resistant steel originally developed to negate the need for painting. Left exposed to weather for several years, the steel takes on a rust-like appearance that can blend well with the muted tones of the landscape.

#### Render

Render has been extensively used in post-war housing and is found in some of the towns and villages in the National Park. However, it is largely the exception to the prevailing stone and as such is discouraged, particularly in proposals for multiple houses. Where it is appropriate, a roughcast render on blockwork will give a more rustic finish than smooth render, although natural stone-lime based renders and mortars are preferable. Bellcasts over windows and doors and drip beading on large areas of rendered walls should be avoided.

There are examples in the Dales of historic render and imitation ashlar finishes which still survive and should be retained.



Restrained use of render on Sedbergh Medical Centre

Limewashed stonework has a distinctive character which cannot be replicated by rendered blockwork. Where the finish is proposed to match or tie in with limewashed stonework, new limewashed stonework should be used.

# A.3 Roofing

Since the 16<sup>th</sup> century, roofing slates have been used extensively in the Dales. The predominant roofing slate in the Yorkshire Dales is carboniferous sandstone flags, known locally as stone slates. Stone slates within the Dales are not true slate such as the Welsh or Westmorland slate in that they are sedimentary rather than metamorphic. Small areas of true slate do occur such as Ingletonian

slate found around Ingleton on the western side of the National Park but these are localised, geological pockets.

Although interspersed with the blue and grey true slate, stone slate remains the prevailing roofing material, resulting in a strong homogenous roofscape; a major defining characteristic of the built environment in the Dales.



Natural local sandstone flags.

## Natural flags and slates

The supply of local stone slates is limited, with few working quarries remaining. The availability of reclaimed stone slates is also limited and an expensive option for larger developments. Sourcing reclaimed slates is also questionable and there is evidence of poaching from roofs of dales barns.

Historically blue, green or grey slates were imported to the area from elsewhere in the country, mainly Wales and Cumbria (Cumberland and Westmorland), and are particularly found in areas closely linked to the railway, such as Wensleydale and Ribblesdale, and with the Cumbrian part of the National Park. Working quarries in Cumbria and Wales still produce slate.



Traditional blue slate roof (Sedbergh).

All slate roofs should be laid in diminishing courses with the narrower, lighter ones near the ridge and the wider, heaviest ones at the eaves. There are also examples within the Dales of blue or grey slate roofs with a course of stone slates at the eaves.



Diminishing courses on a traditional stone slate roof

Slates imported from around the world are also widely available, although they are not usually an appropriate substitute. They are

geologically different from dales stone, often producing a poor match to the colour, finish, texture and size of traditional flags and slates. They can also be less durable and the colour can wash out or bleed. The principle of using imported building materials is also questionable on environmental sustainability grounds.

# **Artificial stone flags**

In recent years, concrete and reconstituted stone tiles have been used with varying degrees of success. Pressure for alternatives to the traditional stone flag has improved the range, quality and appearance of the artificial stone flag considerably and several manufacturers have designed products specifically tailored to mimic the Yorkshire sandstone flag. These include colouration to give an aged appearance. On larger developments, where sourcing a natural stone flag would be unviable, these modern imitations are a practical solution.



Artificial stone flags laid in diminishing courses

## **Timber shingles**

Timber shingles are a sustainable roofing material generally available in cedar or oak. Timber is a renewable resource which creates little or no pollution and is very lightweight and easy to handle. Life expectancy is thought to be up to 50 years, although some maintenance works would probably be required throughout the lifetime, and durability could be affected by the wet climate of the Dales. The life expectancy of the timber also depends on the quality of the wood and the fitting of the shingles.

There is no post-medieval precedent in the Dales for a product of this type, but the low reflectivity of the material and the grey colour of weathered shingles make it a potentially suitable option.



Scargill Chapel, Kettlewell. A Grade II\* Listed Building designed in the 1950s by ecclesiastical architect W G Pace. The expansive roof is covered with cedar shingles which have weathered to a grey tone that harmonises with the limestone screes and walls of the landscape.

### **Green roofs**

Green roofs have become more common in recent years and are a good option where conventional roofs may be problematic, such as sites in open, undeveloped landscapes; where rainwater run-off needs to be attenuated, or as an alternative to large roof expanses on commercial buildings.

Green roofs are generally built from metal sheeting or concrete, which is then covered with soil, and low growing, self-regenerating plants which will produce a natural carpet effect. This finish is only suitable on flat or very low pitched roofs, and can significantly reduce rainwater run-off. Supporting structures need to be strong enough to cope with the increased weight from water and snow in and on the soil covering.



The YDNPA office at Yoredale, Bainbridge incorporates an earth bunded or 'underground' element. Meeting rooms, storage facility, kitchen and toilets are accommodated underneath the 'hay meadow' roof. Natural light is provided through a domed skylight.



Innovative proposals for Wensleydale Creamery. The green roof is designed to reflect the rolling hills.Williams Architects Ltd.

A traditional roofing material such as thatch can also successfully be used in contemporary design. Historically in the Dales ling (heather) thatching was used to roof buildings before stone roofing slates became ubiquitous in the 17<sup>th</sup> and 18<sup>th</sup> centuries. The rugged but soft finish can complement the natural beauty of the landscape.

## **Metal roofs**

The use of corrugated iron sheets to roof larger agricultural buildings was common throughout the 20<sup>th</sup> century. Powder coated metal of an appropriate colour (such as anthracite grey) may be an acceptable substitute on agricultural or some larger industrial buildings, depending on their context. The impact of light coloured roofs when viewed from higher ground should be carefully considered. Generally a darker roof will help to anchor the building in the landscape. Pale coloured or shiny finishes should be avoided as they reflect sunlight and make the building stand out. Fibre cement roofing sheets have the advantage of having a textured matt finish.

Other sheet roofing materials such as steel, zinc, copper or lead can be successful if used in moderation. Many of these metal roofs weather quickly to give an appearance of being long established on the building, but then remain inert without substantial further degradation for a long period.



Sheet roofing material at Malham Youth Hostel

# A.4 Windows and doors

# Wood

Most windows and doors in the Dales are traditionally made of timber, although there are examples throughout the National Park of leaded windows.

#### **Visual appearance**

The visual appeal of timber cannot be imitated. Timber is a natural, sustainable resource - many original Georgian and Victorian windows are still being used today. Well maintained and well made timber windows can last the lifetime of the building in which they are installed.



A Georgian 12 pane sash window.

#### Maintenance

The practical benefits of using timber by far outweigh any other material; timber is repairable, adaptable and durable. A timber window is relatively easy to repair at a low cost. Although timber windows

need regular maintenance, a high quality wood and the craftsmanship of the joinery will increase the durability of the timber. Good quality, well maintained timber windows can last indefinitely. Developments in timber finishing products and modern coating systems means that maintenance is quick and simple. However, some paints can give an impermeable finish which, if damaged, can trap moisture in the wood leading to hidden rot. The choice of paint is therefore important. Treated and maintained correctly, timber windows can last up to three times longer than other materials, possibly even longer.

#### **Thermal efficiency**

Timber is one of the best natural insulators. With a very low thermal conductivity, timber windows are extremely thermally efficient minimising heat lost through the window frame. Timber doors and windows are comparable with other materials in terms of energy efficiency.

#### **Sustainability**

Timber has the lowest environmental impact of any window or door material. It has the lowest embodied energy of all such materials; the total energy used to manufacture timber windows and doors is significantly lower than that of other materials, making timber the most sustainable material. Not only is timber a renewable resource, it is recyclable and easily disposed of and therefore poses little cost to the environment overall.

## **Plastic**

The use of plastic ( uPVC) is generally discouraged as it has several significant drawbacks.

#### **Visual appearance**

The use of uPVC for windows and doors is discouraged primarily due to the visual impact of the material. uPVC window units have thicker and bulkier proportions than timber frames and the uniform shiny, smooth plastic quality of the material compares poorly with the textures and subtleties that give timber windows their unique character and appearance.

#### Maintenance

Plastic windows have the benefit of not requiring painting. However, the lifespan of this material is not clear and low quality products have degraded or discoloured over time. If a fault occurs with the unit, often the only option is to replace the whole window.

#### **Thermal efficiency**

The thermal efficiency of plastic windows is usually comparable with timber and aluminium windows and will depend on the construction of the window.

#### **Sustainability**

The manufacture of uPVC windows is an energy-intensive process resulting in high embodied energy. Unlike timber windows, uPVC windows are difficult to repair and normally have a shorter lifespan. They are difficult to recycle and generally end up as landfill waste.



A poor uPVC imitation multi-pane sash window with stuck-on glazing bars and thick frame.



A good quality modern uPVC sash window with narrow glazing bars and slim frame

# **Metal**

Metals such as iron, mild steel, copper alloys, zinc and aluminium have been used since the 19<sup>th</sup> century in the manufacture of windows, doors and rooflights.

Aluminium frames can be used for modern highly glazed structures such as conservatories and patio doors where there is a requirement for a durable yet lightweight frame. Aluminium has the advantage of being recyclable and re-usable (if carefully disassembled), and is durable and very low maintenance. However, aluminium frames have a high embodied energy and are manufactured from a non-renewable material.

The colour of finish used will contribute to how successfully it is incorporated into a development. Powder coated greys or muted colours can complement the colours of natural stone.

# Windows in historic buildings

Traditional glazing is commonly considered draughty or thermally inefficient. From a conservation perspective, the original window frames and original handmade glass are usually an important feature of the building, the character and age of which, once lost, cannot be replicated. Consent will therefore always be required to replace historic windows in listed buildings. Double glazing can also be very different in appearance from the original windows, even where the window frame pattern has been copied. Double glazing will usually have a thicker frame to accommodate two panes of glass. These panes will usually be separated by a visible spacer bar, often in a contrasting colour to the framework, and modern glass is highly reflective, with a double reflection from two panes.

Steps can be taken to improve the thermal efficiency of the original single glazed windows, including adding draught proofing, ensuring the window frames are well maintained for a good fit or adding secondary glazing fitted internally.

It may be appropriate to replace the glass only with a double glazed unit using slim-profile glazing. Most double glazing has a deep gap (up to 24mm) between the two panes of glass and requires deeper glazing bars than those of traditional windows. Slim-profile double glazing has a much smaller gap between the panes, typically 3-6mm deep. Although this is slightly less effective in reducing heat losses, it allows the exact dimensions of the original glazing bars to be retained. The spacer bar between the two panes of glass can also be coloured to match the painted window frame.



#### Secondary glazing.

# A.5 Surfacing materials

The treatment of the external areas of a development through the choice of surfacing materials, boundary treatment and soft landscape can do much soften the impact of new development and give a sense of place to a collection of buildings. Drawing on the traditional materials already prevalent in the surrounding landscape will help to ensure a development fits in with the local environment.

# Natural stone surfacing

Where hard surfacing is necessary to create access, parking and pedestrian routes, natural stone is a good material to link a site to its surroundings. Different stone finishes will be suitable for a variety of uses. For example, cobbles and flags are expensive but give a high quality and traditional finish which may be more suitable for a traditional setting or to define areas. Locally sourced gravels and chippings are a softer and more permeable alternative to tarmac or paved accesses.

#### Cobbles, setts and flags

Cobbles have been used to surface roads and footpaths for hundreds of years and comprise cobblestones, either set in sand or bound together with mortar. They should be at least twice as deep as they are in width and length and laid on edge. They should have a tightly knit appearance with thin joints.

Cobbles are an effective solid, yet semi-permeable, surface. However, they are not always ideal for parking areas as they can become dislodged.



Parking for Ghyllside, Dent

Setts, usually sandstone or granite, are distinct from cobbles by being quarried or shaped to a regular form, whereas cobblestone is generally of a naturally occurring form.

Natural stone flags are a common and traditional surfacing material for paths and yards throughout the Dales. New sandstone flags are available, both locally quarried and imported from countries such as India, China and Argentina. The difference in cost between locally quarried flagstones and imported flagstones differs significantly. However, care should be taken when using imported flagstones as the finish and colour variations can contrast significantly with local material. The sustainability of sourcing imported flagstones is also questionable.

Cobbles, setts and flagstones are used to great effect on their own or in combination with other materials, such as an aggregate, to break up and demarcate large expanses of hard surfacing. Sandstone or granite setts can also be used as kerbstones and as dropped kerbs, so avoiding the use of unattractive concrete kerbs.



Cobbles and flags at The Wine Cellar, Angel Inn, Hetton

#### **Gravels and chippings**

Local gravel or aggregate can be an appropriate material for tracks and small parking areas where vehicle use is moderate. As a general guide, the finished colour and type of stone used should match that of the underlying soil or rock.

# **Modern materials**

#### Tarmac and concrete

It may be necessary to use tarmac and concrete in certain circumstances, for example where the vehicular use is heavy or an access road is to be adopted by the local highway authority. The uncompromising appearance of large areas of tarmac can have an urbanising effect and ways of softening the visual impact through the use of top dressing or chippings which can break up the colour and add texture should be considered.



Tarmac with stone chippings

#### Manufactured setts and flags

Artificial block paving and flags are generally less suitable for a rural environment and should be avoided. However, in larger developments where the use of natural stone flags, setts or cobbles would not be feasible, the use of conservation-type paving blocks, which replicate the aesthetics of granite or sandstone setts, may be a more attractive and softer alternative to tarmac.



Thoughtful use of surface materials at Primrose Glen, Embsay

#### **Reinforced grass systems**

The durability of a grass surface can be increased through the use of a reinforcing system. Plastic or concrete systems allow low volumes of car traffic to drive over without damaging or eroding the grass surface so maintaining the appearance of a natural grass surface. The species of grass should be specified by the manufacturer of the system to ensure it is suitable for the intended location. Specific low growing grass that does not need a lot of mowing can be used. Plastic systems are usually more effective than concrete systems as the structure is lighter and green in colour, so lessening its impact. Plastic systems can also be used with gravel.

# A.6 Boundary treatment

The enclosure of external areas, such as car parks and gardens, can be an effective means of integrating a site with its surroundings, visually enhancing a development and can screen activity and parked cars. Boundaries are also used to contain activity, protect privacy and provide security.

The type of boundary treatment, whether it be stone walling, fencing or hedging, should be informed by considering what forms the local distinctiveness of an area and what the boundary treatment is aiming to do, for example, screen car parking, provide shelter or provide privacy.

#### Stone walling

Drystone walls are so called because no mortar or other bonding material is used to keep the stones together.

Sandstone and limestone are a local resource, extensively used in walling and gateposts. The type of stone used should match the prevalent material in the area. Building a drystone wall is a labour intensive skill and as such, the initial cost of construction is much higher than other forms of enclosure. However, with ongoing maintenance, a drystone wall can last hundreds of years.



Construction of a typical dry stone wall.

A typical wall consists of a foundation course, generally of larger stones or boulders known as footings, and two wall faces of large stones. The cavity between the faces is filled with smaller stones or hearting. The wall is capped by a layer of larger stones, often laid partly on edge, known as top stones or coping stones. In most walls in the Dales the two wall faces taper slightly towards the top of the wall and are bound together with one or more rows of through stones or 'throughs' which span the full width of the wall.

Drystone walls use local skills and materials, are durable, relatively easy to maintain and can significantly enhance the setting of a building whilst providing good screening of activity, car parking and other paraphernalia. Drystone walls can also be of some biodiversity value, providing shelter for many different species including flowers, mosses, lichens, birds, butterflies and insects.



Dry-stone returns

#### Hedging

The National Park is typically associated with drystone walls. However hedgerows are the dominant field boundary in Dentdale and in the Howgills near Sedbergh and are localised in Bishopdale, Malhamdale, Thornton in Lonsdale, and some areas of upper Wharfedale and lower Swaledale.

Hedging can be used to underplant fencing as an alternative to drystone wall boundaries, where they are present elsewhere in the local landscape. For more information about suitable hedging species, see Appendix C.

For hedgerows to continue to thrive and serve as stock-proof boundaries, they need to be regularly and sensitively maintained. With regular trimming and occasional layering, hedgerows can be maintained in a functional, vigorous state indefinitely. Hedge laying is the traditional form of hedgerow management.

#### Fencing

Timber fencing is not a common enclosure in the Dales although timber farm style gates in villages and rural settings are generally the most appropriate. Where the use of timber fencing is unavoidable, close boarded fencing should be avoided in preference to post-andrail, which can be under planted with native hedge species. Postand-wire fencing can be less intrusive where there are similar uses of the land either side and the boundary is for demarcation purposes only.

Ironwork, such as iron rails and gates, is less common in the Dales than in urban areas. However, it is present, particularly around estate land. There are historic iron rails in the Dales which are part of the character and appearance of the area. Ironwork can be appropriate in some contexts. Bespoke handmade ironwork from local blacksmiths should be used over poor quality, machine made ironwork.

# Appendix B: Planning for wildlife

- B.1 Wildlife in the Dales
- B.2 Scale of development
- B.3 Bats and birds
- **B.4** Further information
- B.5 Specification list nest and roosting
- boxes

# **B.1 Wildlife in the Dales**

The Local Biodiversity Action Plan for the National Park, 'Nature in the Dales: 2020 Vision', sets out how the Authority intends to realise its aspiration to make the National Park home to the finest variety of wildlife in England.

The aims of the Action Plan include getting 95% of the area covered by priority habitats into good condition by 2020 and to stabilise or increase 95% of the populations of priority species. Many of these habitats and species are rare or scarce nationally and the National Park is their last stronghold. New development has an impact on wildlife as even small incremental losses of wildlife habitat can over time affect the function of an ecological network. Development has an important role to play in conserving and improving habitats and this is reflected in the wildlife policies in the Local Plan. The guidance in this appendix is intended to help designers tackle this key aspect of sustainable design.

An important first step will be to find out whether the development site or adjoining land hosts habitats or species that should be protected, or, if affected by the development, how the impact can be mitigated or compensated for.

This appendix includes general advice on simple measures that can be incorporated into designs that will enhance the value of development for wildlife and should help to produce proposals that will comply with the requirements of the wildlife policies set out in Chapter 7 of the Yorkshire Dales Local Plan 2015.



Red Squirrel



Curlew



Northern Brown Argus butterfly



Dormouse

# **B.2 Scale of development**

The National Park Authority acknowledges that the contribution new development should make to conserving wildlife needs to be both proportionate and reasonable for the type and scale of development proposed. A house extension should not need to make the same contribution as a larger scale industrial development or housing scheme. Creating space for wildlife in development is often simple and inexpensive.

# Small scale development

Extensions, garages and outbuildings, small scale improvements to business sites or farms, upgrading utilities and other small developments all offer opportunities for benefiting wildlife. The following measures should be considered.

## Retention of natural features

Natural features such as native hedges, traditional walls, watercourses, trees and natural grassland should be retained, as they are likely to provide wildlife habitat. It is beneficial to retain even small features as they can be added to with landscape planting and they cannot be retained afterwards. Retaining wild areas will benefit wildlife and reduce the sterile appearance that makes new development stand out in a traditional village or countryside location.

# Landscape planting

Planting is a key element of sustainable design and serves a number of purposes. See Appendix C. In addition, it can provide valuable space for plants and animals and reinforce existing ecological networks. The Authority can give advice on the native species that are best matched to the site and which offer the best potential for wildlife. New planting will need appropriate management to ensure that it thrives and matures.

# Nesting and roosting

Providing artificial nest sites for birds that are reliant on buildings (e.g. swifts, swallows and house martins) is a simple and effective way of supporting this type of bird as they are often directly threatened by new development.

Nesting boxes should be incorporated into the design of the building and illustrated on the planning application plans. A range of bird boxes for garden birds (blue tits, chaffinch and house sparrow) should also be considered. Birds are not the only creatures to use domestic gardens or landscaped spaces; other species such as hedgehogs, badgers, bats and bees may also visit in search of food and shelter. A well designed site layout should set aside wild areas and access corridors for these animals.



A wooden bird box is a simple and inexpensive measure that can easily be installed. The photograph shows 8 swift boxes on the gable of Bainbridge Court in Sedbergh. Photo: Sedbergh Swift Group.

# Medium scale development

A housing development, large farm building, community building or commercial premises are examples of medium scale development that will affect wildlife and also provide opportunities for mitigation and improvement. The three measures outlined for small scale development apply equally to medium scale proposals but added to them are the following five measures.

# Bat friendly development

Integral bat slates can be included in a new roof and external lighting minimised to create dark corridors along which bats fly. Including water features or insect friendly native planting (e.g. wildflower meadow species) will encourage bats to forage over the site.

# Boundary treatments

Consider using drystone walls or planting hedges rather than fences to create roosting or foraging habitat for wildlife. It is also important to avoid erecting barriers to wildlife that could benefit from accessing the site, e.g. badgers, hedgehogs and deer. Ensure walls or fences include gaps or, better still, create wildlife corridors allowing access from surrounding land into the site.

# Water and drainage

Designers are encouraged to incorporate sustainable drainage systems into their designs and site layouts. These systems can benefit wildlife if rainwater is collected and stored in ponds, rills or wet areas where a diverse range of plants, insects, frogs or toads, can be supported.



A water feature incorporated into landscaping can provide a rich habitat.

# Green roofs

Green roofs or earth bunded buildings may be a good solution in landscape terms and they can also benefit wildlife. The type of planting employed on the roof should be considered with wildlife in mind. Large roof slopes can sustain wildflower meadow species, which attract insects, and, in turn, bats and birds. Planting climbing species to create living walls can also provide habitat for insects as well as nesting opportunities for garden birds.

## Plant trees

Medium scale sites will generally provide an opportunity for native tree planting. Trees can support a wide range of wildlife as well as giving other benefits such as providing shade, screening, a landscape setting, and a way of treating poorly drained parts of the site. Choosing native species such as oak, hazel and mountain ash means they will be better able to flourish in local conditions and support a wider variety of wildlife. Trees and shrubs are of greater benefit to wildlife if planted in groups or belts rather than individually. Domestic gardens should ideally be designed to connect with nearby habitats and include native planting and permeable surfaces.

# Large scale development

The National Park Authority expects major development proposals to make a significant contribution to enhance wildlife habitat. This may include a contribution to improving habitat off-site but the aim of the designer should be to get the best out of the site for wildlife.

All the preceding measures will apply equally to larger developments, albeit on a bigger scale.

# Wildlife friendly landscaping

A more comprehensive landscaping plan will be required for large development but it should not focus solely on mitigating the visual impact of the development. Landscape planting schemes should be designed with the sustainable drainage system for the site and wildlife enhancement measures incorporated. A larger site will also require more structural planting with space for larger trees, wild areas and wildlife corridors.

The plan should include measures that are achievable and appropriate for the site. It should include appropriate vegetation that will be beneficial for wildlife, retain existing habitats, create new habitats, account for wildlife during and after construction, include artificial nesting and roosting boxes for bats and birds, native tree planting, permeable surfacing and the creation of natural green space.

A larger site will allow space for flower-rich grassland planting which should be left undisturbed and cut only after wild flowers have seeded (from late July). Longer grass, wild flowers and hedgerow plants will encourage invertebrates and provide forage (seeds and fruit) and shelter for small mammals such as mice, voles, shrews and hedgehogs. Hedgerows should be planted with native species such as dog rose, hawthorn, hazel, holly and blackthorn.

Landscape layouts for larger sites should try to connect the site with existing wildlife habitats in adjoining or nearby land. This can be achieved by providing a wildlife corridor through linear features like watercourses, hedges, drystone walls and having larger wild areas on the site boundary comprising trees and hedgerow plants.

For further information on landscape planting with native species see Appendix C.

# **B.3 Bats and birds**

Bats and birds that are reliant on buildings for nesting or roosting are particularly vulnerable to development. Converting old buildings or improving existing buildings can include works that either remove roosting/nesting places or prevent access to them.

Bats are a protected species under European law and barn owls and breeding birds are protected under UK national law. The deliberate

disturbance or destruction of their roosting or nesting places is a criminal offence. Further advice from the Authority's Planning Section or Natural England should be sought before proceeding with any development likely to affect these species.

In the majority of cases, the presence of bats and breeding birds at a site does not mean that planning permission is refused. If adequate survey information is provided with the planning application, measures to prevent or to mitigate against an effect on these species can be adopted e.g. ensuring development takes place outside breeding, roosting or hibernating periods. Proposals can also be designed to include measures to compensate for the loss of roosting or nesting places by providing manmade alternatives such as bat, owl or bird boxes.

### **Bats**

### Bat boxes and slates

Integrated bat boxes and slates can be built into the walls and roof of a building. They have the advantage of offering a permanent space for bats with little maintenance and potentially better thermal properties.

Bat boxes can be embedded so that they do not impair the airtightness of the building and so are commonly used in new build. Many designs are available including some that have bespoke facades that can match the building's external finish. Only the entrance hole is visible once the building is complete.

It is important to ensure that the design and appearance of the bat box/tube complements the host material in colour and finish.



A bat slate can be fitted during construction. Advice on bat slates and boxes is available from Natural England which is the Government agency responsible for nature conservation. Illustration: Natural England.

An alternative to the integral box is an external bat box, similar to a bird box and suitable for roosting and hibernating. Bat slates can also be inserted into a new roof during construction or re-roofing.



An external bat box type that can be fixed to trees or walls close to eaves or soffits.

#### Access points

Bats are particularly vulnerable to works involved in converting traditional buildings. If bats use the building, conversion, restoration or improvement works should ensure that they can continue to access their roosting or hibernating areas. Access points are usually small cracks or crevices in walls or gaps under slates or ridge tiles and gaps at the eaves or verges. Even very small recesses or cracks can provide sufficient space for a colony to roost and hibernate.

The repointing of the external walls of a traditional building should be undertaken with care and some small gaps between the stones should be retained rather than making the building completely air tight. A small gap can provide an opportunity for hole nesting species of bat, or small birds, to use the voids behind.



The builder restoring this traditional barn at Gammersgill in Coverdale has deliberately left a small gap un-pointed to allow access for bats.

### Insulation

The installation or upgrading of loft insulation should not prevent bats gaining access at the eaves level providing the insulation material does not obstruct the point of entry. Breathable Roofing Membranes (BRMs) have been shown to be hazardous to bats which can become entangled in the long fibres that make up BRMs. The advice from Natural England is that bituminous roofing felt is a better alternative as it has a rough surface that bats can grip on to. BRMs are not obligatory under the Building Regulations.

# **Timber treatments**

Fumes from some roof timber preservatives can kill bats however Natural England maintains a list of chemicals that it considers appropriate for use in situtaions where bats or bat roosts are present or likely to occur. See link below:

https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-productsand-timber-treatments-in-or-near-them#treating-timber-to-protect-against-insectsfungal-growth-or-weathering

Even if 'approved' chemicals are used the timing of treatment is crucial. Treatment between September and March is generally

preferable but only if there are no bats hibernating in the space to be treated. The best approach is to take specific advice from your bat surveyor on this point.

# Lighting

Bats are nocturnal animals and have adapted to low light conditions. New or replacement lighting should be the minimum necessary to provide safety or security and should be shrouded or angled downwards and not installed near bat access points and flight paths.

# **Birds**

## Integral bird boxes

These are specifically designed so that they can be incorporated into the external walls of the building during construction. They can provide ideal nest sites for swifts and should be incorporated into the top layer of the external wall of the building during construction. The design and appearance of the box should ideally complement the host building in colour and finish.



Intergral swift bricks on Sedbergh Community Gym. Photo: Sedbergh Swfit Group.

# External nest boxes

Adding a house sparrow terrace or prefabricated artificial nest box to the exterior of the building is a simple and affordable way to create new nest sites. There is a variety of readymade nest boxes specifically designed for birds that are reliant on buildings for nesting (e.g. house sparrows, swifts and house martins). These need to be placed underneath the eaves level of the building on the north elevation away from direct sunlight. Artificial nests should be located away from windows and external doorways.



Left: a terrace nest box and Right: a type of artificial next box suitable for house martins. It should be fitted just under eaves level.

#### **Access points**

Existing access points for birds such as swifts should be retained during conversion works. Ideally work should be carried out between November and March to avoid disturbing any nesting birds.

# **B.4 Further Information**

Barn owls - The Barn Owl Trust - http://www.barnowltrust.org.uk/

Bats - Bat Conservation Trust http://www.bats.org.uk/pages/bats\_and\_buildings.html

Bird boxes - Royal Society for the Protection of Birds (RSPB) http://www.rspb.org.uk/advice/helpingbirds/nestboxes/smallbirds/making.aspx

House martins - Royal Society for the Protection of Birds (RSPB) http://www.rspb.org.uk/advice/helpingbirds/nestboxes/attracthousemartins/

Starlings - British Trust for Ornithology (BTO) http://www.bto.org/nnbw/nesting\_birds/starling.htm

Swifts - Swift Conservation - www.swift-conservation.org/
### **B.5 Specification list - nest and roosting boxes**

TYPE OF SPECIES	WHERE IN DEVELOPMENT	WHERE IN BUILDING	HEIGHT	DIMENSIONS	ACCESS/ROOST DETAILS	COMMENTS
Barn owls	A suitable building on the edge of a development which has an access point facing open countryside.	A dedicated part of a cold roof space.	Access hole and nesting area no less than 3 m above ground level	The floor area of the nest chamber needs to be 1 square m, with a minimum height of 600 mm and a minimum drop from bottom of entrance hole to floor of 460 mm.	Entrance hole: 130 mm (w) x 250 mm (h)	Perches should be constructed from wood rather than metal or stone.
Bats (crevice dwelling e.g. pipistrelle bats)	Anywhere providing the access is not illuminated by artificial lighting	Summer nursery roosts tend to be in southerly or westerly aspects as this provides thermal stability. Male roosts and winter hibernation roosts tend to be on northerly aspects.	2-7 m above ground level	Any size providing some of the area includes crevices which are around 20 -30 mm wide.	Entrance hole: 20-50 mm (w) x 15-20 mm (h).	Area should have a rough surface to allow the species to grip. The area should have suitable thermal properties to avoid temperature fluctuations. Ensure that any thermal insulation is specifically designed to be bat friendly. The access point should not be lit by artificial lighting.

TYPE OF SPECIES	WHERE IN DEVELOPMENT	WHERE IN BUILDING	HEIGHT	DIMENSIONS	ACCESS/ROOST DETAILS	COMMENTS
Bats (that need a flying area e.g. brown, long eared bats)	Anywhere providing the access in not illuminated by artificial lighting.	The crevice roosting provision within the roost is to be located on the south or west side for thermal stability. The flying area needs to relate to the roost.	Over 2 m above ground level	Flight area 5 m (w) x 2.8 (h) x 5 m (d).	Access point dimensions 20 – 50 mm (w) x 15-20 mm (h). Incorporate roof crevices with dimensions of any size as long as some of the components of the area are crevices in the region of 20-30 mm. An area in excess of 1square m is recommended for summer nursery roosts.	Area should have a rough surface to allow the species to grip. Boxes should be toxin-free. The area should have suitable thermal properties to avoid temperature fluctuations. Ensure that any thermal insulation is specifically designed to be bat friendly. Avoid any artificial lighting near the access point. Ensure that the internal space is dark and not trussed to ensure sufficient flight space.

TYPE OF SPECIES	WHERE IN DEVELOPMENT	WHERE IN BUILDING	HEIGHT	DIMENSIONS	ACCESS/ROOST DETAILS	COMMENTS
House martins	Under overhanging eaves with unobstructed access	Artificial boxes are usually mounted on a board which can be fixed under the eaves. Nests are best placed in groups on north and north-east facing walls.	At least 3 m above ground away from obstructions, windows and external ground floor doorways.	180 mm in diameter	A semi-circular hole of 60-65 mm wide and 25 mm high is recommended.	The nest should be under the eaves or an overhang to protect it from the weather. Nests should be fixed in groups to increase the likelihood of use. Place the nests away from areas where droppings may be a nuisance but close to suitable habitat and grazing where the birds can obtain sufficient insects.
House sparrow	Any suitable building	Ideally at eaves level. Out of direct sunlight, preferably on an eastern aspect.	2 m above ground level	150 mm (w) x 350 mm (h) x 150 mm (d).	A 32 mm round hole is required in the box. The bottom of the hole must be no less than 150 mm from base of box.	House sparrows nest in loose colonies of 10-20 pairs. Locate nests near to deciduous shrubs which may be used as cover, roosting and feeding with areas of grass which are an important source of insects and seed.

TYPE OF SPECIES	WHERE IN DEVELOPMENT	WHERE IN BUILDING	НЕІСНТ	DIMENSIONS	ACCESS/ROOST DETAILS	COMMENTS
Starlings	Any suitable building	Ideally at eaves level. Out of direct sunlight. Preferably an easterly aspect.	3 m above ground level	180 mm (w) x 400 mm (h) x 180 mm (d). Bottom of hole must be no less than 180 mm from base of box.	45 mm round hole located at 125 mm above the base of the box. Bottom of hole needs to be no less than 180mm from base of box.	Nests can be as little as 1.5 m apart. Locate near open grassland. Ensure there are deciduous shrubs such as hedges nearby which will provide insects and seeds.

TYPE OF SPECIES	WHERE IN DEVELOPMENT	WHERE IN BUILDING	HEIGHT	DIMENSIONS	ACCESS/ROOST DETAILS	COMMENTS
Swifts	Anywhere high, shaded and away from disturbance and obstructions to their flight paths.	Out of direct sunlight, such as under deep eaves. Preferably integral to the building but, where this is not possible, then artificial boxes should be placed externally under the eaves, or near to the roof edge or gable. Several potential nest sites should be provided in one area.	At least 5 m above ground and away from obstructions.	400 mm (w) x 175 mm (h) x 200 mm (d).	Access hole at least 65 mm (w) x 30 mm (h) oval or rectangular. The bottom of the hole should be no more than 50 mm from the base of the box.	Swifts are colonial nesters, so where room allows it is preferable to have more than one swift nest incorporated into a building. As a guide: 1 to 4 nests on a house. 4 to 10 on a small block of flats. 10 to 20 on a larger building. The above figures may vary on depending on site specifics.

# **Appendix C: Landscaping**

- C.1 Design Approach
- C.2 Landscape planting
- C.3 Hard landscaping
- C.4 Technical Advice Trees and shrubs

# C.1 Design approach

In almost all types of new build development landscaping will be a key factor in judging whether the proposal is sustainable or not. Landscaping is important because it can have a beneficial influence on a range of factors: the visual quality of the development, its effect on its surroundings and the wider landscape, as well as improving wildlife habitat, shelter, shade, drainage, security and even insulation. It should be an intrinsic part of the overall design and be considered at the first stages of the process rather than as an afterthought.

The scope and detail of landscape design solutions will depend on the scale and type of development in relation to its landscape context.

Designers are encouraged in the first instance, to work with the existing landscape of the site including established land levels (contours), ridges and features such as mature trees, hedgerows and dry stone walling. These features add both character and maturity to a new development and help the development to look part of the landscape immediately.

In relation to existing trees and hedgerows, a survey will be required at the planning application stage to clearly identify species, size and position along with measures to protect them during construction. It is recommended that proposed works follow the recommendations in British Standard 5837 which provides advice on, "Trees in Relation to Construction." Mitigation for any trees or hedgerows removed prior to the submission of an application will be required.

In addition to the retention of existing planting, new landscaping will provide the opportunity to enhance the setting and feel of a site.

Spaces between buildings should be positively designed and not be left over awkward corners.

### **C.2 Soft landscaping**

The term 'soft landscaping' is often used to refer to all 'growing' landscape features including soil and grass, trees and shrubs but it also extends to open spaces, streams, ponds, ditches and wetlands.



Effective landscape planting at Scott Hill, Bianbridge.

Landscape planting will can benefit a new development by adding interest and by giving definition to spaces and boundaries, enhancing the street and providing green corridors that support nature conservation. Open space should be attractively designed as a focal point for a new development. It also provides opportunities for the integration of sustainable urban drainage systems.

Trees and planting can also serve to frame views, reduce traffic speeds, provide shade and soften the appearance of buildings. Planting should be sympathetic and make a positive contribution to the existing local landscape character and surrounding vegetation. Planting should never be used as a tool to screen or remedy poor design.

The choice of plants should include exclusively native species which reflect the function, purpose and location of the landscaping (see planting data). Trees, hedging and shrub planting should be carried out between October and March, the earlier in the season the better.

### **C.3 Hard landscaping**

Hard landscaping encompasses all hard surfaces to be retained or formed within the site including paved areas, car parking surfaces, driveways, steps, boundary walls, fences and pathways.

Hard landscaping provides an opportunity to enhance the quality of the immediate surrounding of a site. Natural materials such as stone or gravel often last longer, weather better and suit localities more than artificial materials (See Appendix B: Materials). Asphalt surfaces such as tarmac can often be used in an insensitive way and can have an urban appearance.

In most circumstances a permeable surface material should be used. Allowing rainwater to leach through the surface rather than run-off to a drain helps to slow the flow of water into rivers and streams and reduce the impact of flooding. Getting the right boundary treatment in the right location is a particularly important aspect of landscaping proposals. Boundaries serve to define ownership, provide security and screening or provide a new edge to a settlement. Dry-stone walls are the preferred boundary treatment as they reflect the historic tradition whilst providing attractive robust, long-lasting boundaries which require little maintenance. Close boarded fences tend to have a suburban appearance and would not be appropriate in forming boundaries which are publically visible. Post and rail or hit and miss timber fencing may be more acceptable depending on the context.



A good mix of materials is more visually stimulating.

## **C.4 Technical Advice – Tree planting**

Tree names	Growth rate	<mark>Mature</mark> height	Shelter belts	Exposure	Shade	Wet sites	<b>Deciduous</b>	Evergreen	Wildlife benefits	Comments
Alder	Medium	>10 m	x	x	V	V	V	x	Catkins are early source of pollen for bees. Cones are good food source for wildlife.	Can grow in standing water and is good for combating river bank erosion. Found in wet woodland.
Ash	Fast	>10 m	x	X	$\checkmark$	V	V	X	Seeds are good food source for birds	Major component of native woodlands. Planting is currently prohibited due to Ash Die Back disease. Can be used as an individual specimen tree.
Aspen	Fast	>15-30m	$\mathbb{V}$	V	X	V	V	X	Leaves are good food source for insects and butterflies.	Aspen can send up suckers and become invasive. Can be used as an individual specimen tree. Can be used in woodland.

Tree names	Growth rate	<mark>Mature</mark> height	Shelter belts	Exposure	<mark>Shade</mark>	Wet sites	Deciduous	Evergreen	Wildlife benefits	Comments
Bird Cherry	Medium	>15m	X	X	X	V	V	X	Blossom is good source of pollen for bees and butterflies. Fruit is good food source for birds and mammals.	Suitable for roadside planting. Can be used in woodland.
Crab Apple	Medium	>3-10m	X	V	X	X	V	X	Spring blossom is good for bees. Fruit is good food source for birds and mammals.	Suitable for mixed hedgerows. Can be used as an individual specimen tree. Can be used in woodlands. Often found in orchards
Crack Willow	Medium	>20m	x	X	x	V	V	x	Catkins offer early source of pollen for bees.	For use in predominantly wet areas.

Tree names	wth rate	ght	elter belts	osure	ade	t <mark>sites</mark>	<mark>ciduous</mark>	ergreen	Wildlife benefits	Comments
Downy Birch	Medium	Heie Heie Heie Heie Heie Heie Heie Heie	×	FXp ↓	× Sha	✓ Wet	Dec √	× Eve	Catkins offer early source of pollen for	Can be used in woodland.
									bees. Offers shelter for birds in exposed locations.	Suitable for sheller belts.
Field Maple	Medium	>10 m	X	X	$\checkmark$	X	V	X	Fruit is good food source for birds and mammals.	Non-native in the Dales. Doesn't do well in light limestone soils. Suitable for boundary hedges.
Grey Willow	Medium	>10m	x	x	V	V	V	x	Catkins offer an early source of pollen for bees.	Good for combating river bank erosion.

Tree names	wth rate	ure Jht	Iter belts	<mark>osure</mark>	de	sites.	iduous	<mark>rgreen</mark>	Wildlife benefits	Comments
	Gro	Mati heig	She	Exp	<mark>Sha</mark>	Wet	Dec	Eve		
Holly	Slow	>10m	X	x	V	$\checkmark$	x	$\checkmark$	Berries are a good food source for birds. Provides Winter browsing for farm stock. Therefore care is required to protect them.	Can be used in woodlands and gardens Suitable for stock proof boundary hedges Can be used in intruder proof boundary hedges as the leaves have spines. Suitable for shelter belts.
Osier	Medium	>5m	X	X	X	V	V	V	Catkins offer an early source of pollen for bees.	Osier is a native willow that is suitable for preventing riverbank erosion. Suitable for riverbanks. Can be coppiced.

Tree nomes	ate		<mark>belts</mark>	U		S	SN	u	Wildlife benefits	Comments
Tree names	Growth r	<mark>Mature</mark> height	Shelter t	Exposur	Shade	Wet sites	Deciduo	Evergree		
Pendunculate Oak	Slow	>10m	X	X	X	X	V	X	Acorns are good food source for birds and small mammals.	Grows poorly in light limestone soils. Can be used in woodlands Suitable as an individual specimen tree.
Purple Willow	Medium	>1-5m	x	x	N	V	N	x	Catkins offer an early source of pollen for bees and insects.	Suitable for riverbanks.
Rowan	Medium	>3-10m	V	V	x	X	V	X	Berries are a good food source for birds.	Provides landscape amenity interest as well as wildlife support throughout the year. Good as a garden tree or as part of a landscaping scheme.
Sallow	Fast	>3-10m	x	x	V	V	N	X	Catkins are an early source of pollen for bees.	Suitable for riverbanks. Can be coppiced.

	e		lts						Wildlife benefits	Comments
Tree names	Growth rat	<mark>Mature</mark> height	Shelter be	Exposure	<mark>Shade</mark>	<mark>Wet sites</mark>	Deciduous	<mark>Evergreen</mark>		
Sessile Oak	Slow	>10m	X	V	X	X	V	X	Acorns are good food source for wildlife.	Copes with light limestone soils better than Pendunculate Oak. But may struggle. Suitable for woodlands. Suitable as an individual specimen tree.
Silver Birch	Fast	>10 m	X	X	V	V	V	X	Light canopy allows wide range of plants to grow beneath it.	Non-native tree. Downy birch is more suited to the National Park. Can be used in woodlands. Suitable for shelter belts.
Small Leaf Lime	Medium	>10m	X	x	V	x	V	x	Flower clusters are good food source for insects. Berries are good source of food for birds and mammals.	A very small component of native woodland. Impressive field grown tree.
Whitebeam	Medium	>10m	x	x	V	x	$\checkmark$	x	Berries are good food source for wildlife.	Good for shelter and groups of trees.

Tree names	Growth rate	Mature height	Shelter belts	Exposure	<mark>Shade</mark>	Wet sites	Deciduous	Evergreen	Wildlife benefits	Comments
Wild Cherry	Medium	>10m	$\checkmark$	x	x	$\checkmark$	$\checkmark$	x	Berries are good food source for birds and mammals.	Can be used in woodlands. Suitable for mixed hedges.
Willow (white)	Fast	>10m	x	x	x	$\checkmark$	V	x	Leaves and flowers are good food source for bees and butterflies.	Can be used in woodlands. Good for combating riverbank erosion. Good specimen tree.
Wych Elm	Medium	>10m	X	V	V	V	V	X	Flowers are a good food source for bees and insects. Winged fruit is good for birds.	Rarely seen as a fully grown tree due to Dutch elm disease. However, frequently grows as part of a hedgerow after being cut down.

## **C.4 Technical Advice – Shrub planting**

Shrub Names	<mark>Growth rate</mark>	Mature height	Shelter belts	Exposure	<mark>Shade</mark>	Wet sites	<mark>Deciduous</mark>	<mark>Evergreen</mark>	Wildlife benefits	Comments
Blackthorn	Medium	>1-3m	x	$\checkmark$	$\checkmark$	x	V	X	Blossom offers early pollen source for bees. Berries are a good food source for birds.	Suitable for mixed boundary hedges. Can form impenetrable thickets if left unmanaged. Can be used for intruder proof boundary hedges as it has thorny stems.
Broom	Fast	>1-3m	x	$\checkmark$	x	x	x	$\checkmark$	Flowers are a good source of pollen for bees and insects.	Often used as an ornamental shrub in gardens.
Dog Rose	Fast	>1-3m	x	V	x	x	V	X	Flowers are a good source of pollen for bees and insects. Rose hips are a good food source for birds.	Suitable for mixed boundary hedges. Can be used for intruder proof boundary hedges as it has thorny stems. Attractive flower.

Dog Wood	Medium	>1-3m	x	x	N	x	V	x	Flowers are a good source of pollen for bees and insects.	Suitable for mixed boundary hedges. Attractive flowers in summer. In winter it has red twigs.
Shrub Names	<mark>Growth</mark> rate	<mark>Mature</mark> height	<mark>Shelter</mark> belts	<mark>Exposure</mark>	<mark>Shade</mark>	Wet sites	<mark>Deciduous</mark>	<mark>Evergreen</mark>	Wildlife benefits	Comments
Elder	Medium	>3-8m	$\checkmark$	x	$\checkmark$	x	V	x	Flowers offer early pollen source for bees and insects. Berries are good food source for birds.	Not a strong tree, so not recommended for exposed locations.
Gorse	Slow	>1-3m	X	V	x	x	x	V	Flowers are attractive to bees and insects.	Provides good winter browsing for farm stock.
Guelder Rose	Medium	>1-3m	X	X	$\overline{\mathbf{v}}$	V	V	x	Flowers are attractive to bees and insects. Rose hips are a good food source birds.	Suitable for mixed boundary hedges.

Hawthorn	Medium	>10m	 $\checkmark$	 х	$\checkmark$	Х	Blossom is attractive to	Suitable for mixed boundary
							bees and insects.	hedges.
							Berries are good food source for birds.	Can be used for intruder proof boundary hedges as it has thorny stems.
								Suitable for stock proof field boundary hedges.

Shrub Names	Growth ate	Mature neight	Shelter oelts	Exposure	Shade	<mark>Net sites</mark>	<mark>Deciduous</mark>	<mark>Evergreen</mark>	Wildlife benefits	Comments
Hazel	Medium	>3-10m	x	x	N	x	V	x	Catkins offer early pollen source for bees and insects. Nuts attract grey squirrels so should not be planted in areas where red squirrel populations exist.	A native component of Ash woodlands. Suitable for mixed boundary hedges.
Honeysuckle	Medium	>3-8m	$\checkmark$	x	V		V	x	Scented flowers are attractive to bees and insects.	Suitable for mixed boundary hedges. Good climbing shrub.
Wild Privet	Medium	>3m	$\checkmark$	x	x	x	x	V	Blossom is early pollen source for bees and insects. Fruit is good food source for birds. Provides a safe nesting site for birds.	Suitable as a boundary hedge. Fast growing. Year round leaves but will lose some in cold winters. Can help reduce noise levels.

# **Appendix D: Renewable energy**

D.1 Design approach

- D.2 Biomass
- D.3 Heat pumps
- D.4 Hydro power
- D.5 Solar energy
- D.6 Wind energy

# **D.1 Design approach**

The National Planning Policy Framework has set out the purpose of the planning system, which is "to contribute to the achievement of sustainable development" (para.6).

It has been estimated that the construction industry can influence over 40% of UK carbon dioxide emissions<sup>1</sup>. The main areas of influence are from construction materials and from the energy used in buildings.

The National Park Authority expects designers to take all practical opportunities for making their proposals environmentally sustainable.

There is considerable scope for incorporating renewable energy technology into new development in the National Park as well as retro-fitting in existing buildings. However, the need to protect the visual quality of the landscape means that a considered approach is required. The most successful developments are generally the result of thinking about renewables early in the design process rather than being an add-on once the design has been finalised.

This appendix provides general advice on the opportunities for renewable energy installation with more particular advice for different developments being in Chapter 4 Householder development (para 4.1.2) Chapter 6 Converting a traditional building (para 6.1.2), and Chapter 7 Agricultural buildings (para 7.1.2).

1 Dept Business, Innovation & Skills report 2010

#### **D.2 Biomass**

Biomass boilers that burn wood pellets, wood chips or logs can be utilised at different scales for individual domestic heating as well as on the commercial or institutional scale. The main considerations are the appearance of structures for housing the boiler and storage for sufficient quantities of fuel. Biomass boilers can be large structures and therefore need to blend with the surrounding area. Extraction flues should, where possible, be incorporated within the roof or in the building itself, with exposed sections painted a dark matt colour such as dark brown or black.



Biomass boiler building at Scargill House, Kettlewell. The building is positioned on land adjacent to the access road it has also been dug in. The external timber boarding is a dark brown which assists in blending the building into its setting.

#### **D.3 Heat pumps**

Ground source heat pumps are largely underground installations that collect heat from the earth and pump it into an underfloor heating system. They do not usually require planning permission. They are particularly suitable for new commercial, institutional or community buildings where the heat collecting installation can be accommodated under a car parking area. Air source heat pumps extract warmth from the air which is pumped into the building to warm the air or to heat water. The unit is usually fitted to an outside wall or mounted on the ground.

The installation is rather like an air conditioning unit and can be unsightly. However, it can easily be housed within a small stone or timber clad structure, or better still, in the case of new build development, built into the fabric of the building.

#### **D.4 Hydropower**

The upland topography and climate of the National Park is particularly suited to harnessing water power.

Any part of a watercourse, which includes a significant fall in level, can be used to produce hydro-electricity. This fall is used to create a head by pressurising part of the water flow by diverting it through a pipe or narrow channel down to a turbine and back to the watercourse.

Hydropower systems have the advantage of consistent electricity production, limited visual impact and very low maintenance requirements. However, they often require significant engineering works in and close to watercourses that can cause noise problems and can have an adverse effect on the ecology of the watercourse and water levels.

There are different types of hydro schemes. The type most likely to be appropriate in the National Park is a high head scheme in which a relatively small quantity of water is piped down a steep gradient. A typical high head hydro scheme involves water being taken from a river or stream and diverting it through an intake at a weir, along a pressurised pipe called a penstock, which can be buried. The water then runs through the turbine, which is enclosed in a powerhouse that contains a generator and control equipment. The water is then allowed to flow back to the river down via a tail race which takes water away from the turbine.



A small scale hydro turbine housed in a small farm building at Tennant Gill, Malham.

In designing small scale hydropower schemes, the following points should be considered.

- Avoid disturbance to natural features of the landscape, including cultural heritage, riverbanks and beds. Pipelines should avoid natural landscape features and make the best use of existing contours. They do not have to descend in straight lines or descend continuously throughout their length
- All elements of construction within or adjacent to the watercourse should be assimilated into the character of the site, for example, by cladding construction materials with natural stone
- Existing buildings should be used where possible to house machinery. New buildings should fit in with the appearance of existing buildings in the locality

- Metal structures should be kept to a minimum and painted in appropriate colours
- If a new access track is necessary, it should be constructed of materials that will allow partial re-vegetation
- Aim to avoid the loss of trees and consider opportunities for new landscaping
- Breached walls should be rebuilt and not replaced with fences

Designers considering a hydropower scheme should consult the British Hydropower Association for further information and contact the Environment Agency for advice on water abstraction and the ecological impact of their proposals.

#### **D.5 Solar**

Solar panels for heating water and photovoltaic cells for generating electricity are now a relatively common and easily accessible technology. The Government has introduced permitted development rights to allow solar panels to be installed without planning permission. These rights have limitations but they still apply within the National Park. Contact the National Park Authority in advance of purchase and installation to find out whether your proposals need planning permission.

Solar panels can make an important contribution to reducing energy costs and energy consumption but, if they are sited in the wrong place, or if care is not taken in selecting the right product, they can harm the appearance of traditional buildings and stand out in the landscape.

Proposals for solar panels on a house, farm, commercial building or as part of a housing development, should address the following points:

- Panels need to be sited within 45° of south for optimum efficiency
- Panels can be ground mounted and hidden behind boundary walls or placed in a tiered array against the walls of a modern farm building. Ground mounted panels are much less noticeable in the landscape and do not spoil the appearance of traditional buildings
- Garages and outbuildings are often good places for siting solar panels as they are single storey buildings that are less prominent and the appearance of the main house is not affected

Choose panels that have a matt black, non-reflective finish, with the metal frame finished in matt black, and which utilise a method of fixing which has a low profile, or better still incorporate panels into the building design so that they sit within the roof plane.



Solar panels at West Barn Malham

The key to successfully incorporating solar panels is to consider them early in the design process rather than add them after the layout and building designs have been finalised. The orientation and design of buildings, particularly ancillary buildings, and open spaces, can be influenced by the opportunity for incorporating solar panels.

### **D.6 Wind energy**

The exposed upland topography of the National Park can seem like an ideal location for wind turbines given its higher wind speeds and open landscape. However, wind turbine installations in remote and beautiful locations can harm the scenic quality of the landscape.

The capacity of the National Park landscape to absorb large scale wind turbine installations without harming its natural beauty is extremely limited. Smaller scale installations that are a similar height to established landscape features, such as mature trees or buildings, offer more scope, providing they are sensitively sited. This is the domestic scale wind turbine that is commonly about 15m in height.

Small and micro scale wind turbine technology has become well established and highly efficient in comparison with other renewable technologies. It can be most efficient in winter and therefore can be a good back up for solar panels.

Choosing the right location for a small scale wind turbine is likely to be the key factor in the success of the proposal. The following points should be considered:

• Find a site that is next to existing landscape features of a similar height, such as houses, trees, farm buildings etc. Wind turbines are less noticeable in the landscape if they are located within or next to a group of buildings or trees rather than standing alone.

- Look at the shape of the land to ensure that the turbine sits well within it. Avoid locations where the turbine will break the skyline.
- Consider local views or vantage points from where the turbine will be seen to help choose a location where it will not be prominent.

Other factors that need to be considered include the following.

- Will the turbine blend in better if it is painted a matt dark brown, dark grey, dark green or black colour?
- Ensure that the turbine will not generate noise that would disturb a neighbour.
- Avoid affecting the habitat of vulnerable species such as bats and birds, including bat flight paths



Wind turbine in Arkengarthdale

### **Appendix E: Glossary**

**Advertisement:** For planning purposes, an advertisement is defined in section 336(1) of the Town and Country Planning Act 1990 (as amended) as: "any word, letter, model, sign, placard, board, notice, awning, blind, device or representation, whether illuminated or not, in the nature of, and employed wholly or partly for the purposes of, advertisement, announcement or direction, and (without prejudice to the previous provisions of this definition) includes any hoarding or similar structure used or designed, or adapted for use and anything else principally used, or designed or adapted principally for use, for the display of advertisements." The term 'advertisement' is provided in the current Advertising Regulations (*The Town and Country Planning (Control of Advertisements) Regulations 2007*).

**Affordable housing:** Social rented, affordable rented and intermediate housing, provided to eligible householders whose needs are not met by the market. Eligibility is determined with regard to local incomes and local house prices. Affordable housing should include provisions to remain at an affordable price for future eligible households or for the subsidy to be recycled for alternative affordable provision. (*P50, Annex 2: Glossary, NPPF*).

**Amenity:** The physical and social features of a site and its surroundings which contribute to a comfortable and desirable living environment.

**Annexe:** Accommodation which is ancillary to the main residential dwelling and used for this purpose. It may be interconnecting within the property as a whole (for instance via doorways) or it may be accessed via a separate external entrance but, if it forms separate and additional accommodation for the main house, it will be viewed as an annexe.

Ash die back (*Chalara Fraxinus*)): A chronic fungal disease of ash trees in Europe characterised by leaf loss and crown dieback in infected trees.

**Bargeboard:** A fixed structure normally constructed from timber that is positioned on the gable end of a building and is a feature that aims to protect the junction of the roof and wall.

**Biodiversity:** The variety of life on earth. It is the interaction between all living things and their environment.

**Birds and Habitats Directives:** European Directives to conserve natural habitats and wild fauna and flora.

**Brownfield:** Land that has already been developed for a use other than agriculture, forestry, mineral extraction, waste disposal or private residential garden.

**Bunding:** An artificial mound or embankment used to screen a site from view or reduce noise emissions.

Byre: A traditional farm building used to keep cattle.

**Camping barn:** A place that provides basic bothy-style accommodation such as a communal sleeping area. This type of accommodation Is often referred to as a stone tent.

**Cat slide roof:** A roof that projects down from the eaves and is a continuation of the roof plane to cover an outshut/offshut.

**Competent person:** A person with a recognised relevant qualification, who has sufficient experience in dealing with a specialist aspect of development and who is a member of a relevant professional organisation.

**Conservation area**: An area designated for its special architectural or historic interest. Local planning authorities have a general duty in respect of conservation areas in the exercise of planning functions and have to pay special attention to the desirability of preserving or enhancing the character or appearance of such areas. (Section 72. The Planning (Listed Buildings and Conservation Areas) Act 1990).

**Conservation rooflights:** A type of roof window that is specifically designed to complement traditional buildings. The frame is normally finished in matt black, has a vertical emphasis and incorporates a slender glazing bar. The frame and fittings sit flush with the roof plane. This type of opening has traditional dimensions.

**Conversion:** The adaptation of a building or part of a building for a new use.

**Corbel:** A projecting block, usually of stone, supporting a beam or other horizontal roof timber.

**COR-TEN steel:** A weather resistant steel product that has been developed to eliminate the need for painting. It has a rusty appearance if exposed to weather.

**Curtilage:** Usually an area containing or closely associated to, and used in connection with, a house or building.

In relation to a listed building, the curtilage is an important element in determining the extent of the designation, but it is also a complex legal concept. Advice should always be sought from the National Park Authority.

**DEFRA:** The Department of Environment, Food and Rural Affairs is the Government department responsible for safeguarding the natural environment, supporting the food and farming industry, and sustaining a thriving rural economy.

**Dutch elm disease:** A disease of elm trees characterised by wilting, yellowing, and leave fall. The disease is caused by a fungus and is transmitted by bark beetles.

**Embodied energy:** The sum of all the energy required to produce any goods or services incorporated or embodied in the product itself.

**European site:** This includes Special Areas of Conservation, Sites of Community Importance and Special Protection Areas. (*Regulation 8, Conservation of Habitats and Species Regulations 2010).* 

**Exceptions site:** Small housing sites for affordable housing, adjacent to the housing development boundaries of Local Service Centres and Services Villages identified on the Local Plan 2015-2030 Policies Map.

**Farm diversification:** A business activity carried out on a farm holding that is ancillary and supports the main farm business.

**Fascia board:** The area above the shop window on a building, which traditionally takes the form of a wooden board, used to display an advertisement.

**Forking holes:** An opening at first floor level in a traditional farm building that was originally used to gain access for storage and retrieval of hay.

**Graduated or diminishing courses:** A traditional style of laying a roof. The largest slates are at the bottom of the roof with the smaller slates at the top. Thicker slates are often used at the bottom of the roof.

**Habitats Directive:** The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe's nature conservation policy. The directive protects over 1,000 animals and plant species

and over 200 so called habitat types (e.g. special types of forests, meadows, wetlands, etc.), which are of European importance.

**Hanging sign:** A type of sign used to advertise a business or product. It is normally suspended beneath a supporting bracket that is able to swing.

**Hemp lime plaster**: Plaster is made from high calcium lime blended with hemp fibre. It is breathable, flexible, offers good insulation and is suitablefor restoration of internal, solid walls.

**Heritage asset:** A building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. Heritage assets are the valued components of the historic environment. They include but are not limited to conservation areas, listed buildings and ancient monuments.

**Historic Environment Record (HER)**: Information service that provides access to resources relating to the historic environment of a defined geographic area for public benefit and use.

**Hopper:** An agricultural storage structure that contains animal feed in an elevated position that is gravity fed.

**Infill plots:** The infilling of a small gap within an otherwise built-up frontage or group of houses.

**Intruder-proof hedges:** Shrubs and trees that have spikes and spines that help to keep animal and human intruders away.

**Kneelers (shaped):** Stone at the bottom end of the coping at the gable end of a roof that projects over the wall below. Usually moulded or carved.

**Landscaping scheme:** This aims to help fit development into the landscape. Schemes may include hard and soft landscaping and often include tree and shrub planting.

**Limecrete flooring**: A flooring product consisting of a combination of natural hydraulic lime and lightweight aggregate which can be used as an alternative to concrete. This creates a breathable flexible floor surface.

**Listed building:** A building or structure designated as being of special architectural or historic interest. The designation extends to any structure or object fixed to the building or within its curtilage where it forms part of the land and has done so since 1948. Demolitions, extensions or alterations that are likely to affect their special character will require approval from the local planning authority.

**Live-work unit:** Bespoke building for business use with ancillary living accommodation.

**Massing:** The arrangement of architectural components that determine the bulk and mass of a building.

**Mitigation:** Works carried out during or after development to reduce the environmental impact of development.

**Muck hole:** A hole at ground floor level in the external fabric of an agricultural building designed to allow the removal of animal waste.

**Natural England:** The Government agency for advising on the natural environment in England, helping to protect England's nature and landscapes for people to enjoy and for the services they provide.

**NPPF:** The National Planning Policy Framework. It includes the Government's planning policies for England and how these are expected to be applied.

**National Park Management Plan:** A plan that sets out the collective aspirations for the future of the National Park. All National Park Authorities have a duty under Section 62(1) of the Environment Act to take forward national park purposes and to seek to foster the economic well-being of local communities within the National Park. There is a statutory duty to review the National Park Management Plan at intervals of not more than five years.

**Open upland:** Land defined in the local plan as upland heath, grass moor, blanket peat, bare rock, and mineral soils plus areas of rough pasture and moorland allotments where they have similar qualities of remote wilderness. Much of the land is managed for game shooting and grazing. It is distinct from more intensively farmed and enclosed land at a lower altitude.

**Outshut/offshut:** A traditional local term to describe an extension that projects from the main building often with a cat slide roof.

**Overdevelopment**: An amount of development (for example, the quantity of buildings or intensity of use) that is excessive in terms of demands on infrastructure and services, or impact on local amenity and character.

**Owl holes:** A structural entrance built into buildings such as barns to allow predatory birds such as barn owls to enter. This type of bird will prey on vermin and is therefore of benefit to the landowner.

**Portal frame:** An internal construction method that is used in the building and designing of modern agricultural buildings. The frame is normally made of steel or reinforced pre-cast concrete.

**Putlock holes:** Small holes in the walls of structures to receive the ends of poles (small round logs) or beams, called putlogs or putlocks, to form scaffolding. Putlog holes may extend through a wall to provide staging on both sides of the wall.

**Priority habitats and species**: Species and habitats of principal importance included in the England Biodiversity List (Section 41, Natural Environment and Rural Communities Act 2006).

**Projecting sign:** A sign that is attached to the face of a building extending outwards.

**Protected species:** A species of animal or plant that is protected by the Habitats Directive from any harm.

**Rainwater goods:** Pipework and guttering designed to carry rainwater off and away from a building.

**Renewable energy:** Energy derived from wind, water or the combustion or decomposition of waste materials.

**Rill:** A small shallow channel or gulley that carries flowing water.

**Rise and fall brackets:** A traditional method of support for rainwater guttering. The brackets are fixed directly to the masonry and can be adjusted along the length of the guttering.

**Rotational coppicing:** A method of harvesting energy crops. The harvest can be used to fuel biomass boilers.

**Sheepfold:** A drystone wall enclosure or pen that offers shelter for sheep.

**Silo:** A vertical agricultural storage structure that contains animal feed.

Silage clamp: A storage area for conserved grass on farm holdings.

**Slurry store:** A concrete structure used for the storage of animal waste together with other unusable organic matter.

**Soakaway:** A pit filled with hard core, where waste water is piped so that it drains slowly into the surrounding soil.

**Sodium light**: A yellow light, typically used in street lighting.

**Solar gain:** The increase in temperature in a space, object or structure that results from solar radiation. The amount of solar gain increases with the strength of the sunlight, and with the ability of any intervening material to transmit or resist the radiation.

**Solid-to-void ratio:** The proportion of window and door openings to wall surface area in the exterior wall of a building.

**Special qualities**: They make up the National Park's unique sense of place. They are a combination of visual qualities of the landscape, the qualities of the natural environment and the cultural heritage giving the added dimensions of a sense of time, depth and history. They also include more intangible qualities such as tranquillity, solitude, wildness, space and inspiration. *(P14-16, Yorkshire Dales National Park, Management Plan, 2013-18).* 

**Storm casement:** A type of window that was introduced post-war. The edge of the window is wider than the opening and forms a protective lip over the frame to protect it against bad weather.

**Sun-path diagram**: A diagram that demonstrates the shading effect of a building or structure. The diagram refers to the seasonal and hourly positional changes of the sun and length of daylight as the earth rotates and orbits around the sun. The relative position of the sun is a major factor in the heat gain of buildings and in the performance of solar energy systems. **Sustainable drainage systems (SUDs):** They are designed to reduce the potential impact of new and existing developments on surface water drainage discharges.

**Through stones:** They increase the strength of a wall. They span both faces of a wall and often project from the face.

**Traditional building:** Buildings constructed at any time prior to the early to mid 20<sup>th</sup> century. During the first half of the 20<sup>th</sup> century the use of mass manufactured materials began to reach the National Park, but traditional methods of construction still persisted. They are typically of solid stone wall construction with flagged or slated roofs incorporating natural and predominantly locally sourced materials.

**Traditional Farm Buildings Toolkit:** Guidance for designers, developers and decision makers that is supplementary to local plan policies. It provides further guidance about assessing buildings and their capacity for change. It can be viewed using this link:

http://www.yorkshiredales.org.uk/\_\_data/assets/pdf\_file/0004/938173/Traditional-Farm-Buildings-Toolkit-v4.5-Lo-Res.pdf

**Ventilation slits:** Narrow vertical openings which allow air to circulate inside a traditional farm building.

**Vernacular:** A term used to describe architecture based on local needs, construction materials and reflecting local traditions.

**Wildlife corridor:** A link of wildlife habitat, generally native vegetation, which joins two or more larger areas of similar wildlife habitat. Corridors are critical for the maintenance of ecological processes including allowing for the movement of animals and the continuation of viable populations.

**Winter browsing:** Natural vegetation for animals that feed on leaves, twigs, or other high growing shrubs during the winter months when grass is not available.

**Yorkshire sliding sash window:** A sash window that is made of one or more movable panels where the glazed panels are opened by sliding horizontally.

**Yorkshire timber boarding:** Vertical timbers that are used to clad the upper walls of agricultural buildings. This method of cladding allows good airflow into the building, improving internal conditions for livestock.