

## Blackdown Hills Area of Outstanding Natural Beauty

# Design guide for houses

A guide explaining how buildings and settlements contribute to the character of the Blackdown Hills landscape





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# Introduction

This design guide is intended to be of use and interest to anyone involved in the planning, design and construction or alteration of houses in the Blackdown Hills Area of Outstanding Natural Beauty (AONB). It provides guidance on how buildings can be designed to conserve or enhance the distinctive character of the Blackdown Hills.

The traditional buildings and settlements of the Blackdown Hills are an essential and distinctive part of its landscape. To preserve local distinctiveness, the



*The traditional buildings and settlements of the Blackdown Hills are an essential and distinctive part of its landscape*

design of any new building needs to draw on the construction traditions of the area. This does not mean slavishly copying the appearance of traditional buildings, but applying the principles of construction traditions to new and altered buildings - including innovative, contemporary solutions where appropriate. These traditions can be understood by appreciating the area's distinctive buildings and settlements and how they relate to their setting in the landscape.

## Purpose

The buildings of the villages, hamlets and farms of the Blackdown Hills are as much a part of the character of the landscape as the area's hedges, woodlands and field patterns. It is the occupants of the buildings and their predecessors that created the landscape that we see today. The location, construction and detailing of their buildings is an integral part of the beauty of the area.

If the beauty of the area is to be protected for future generations, it is essential that the character of the Blackdown Hill's traditional, vernacular buildings is understood and respected in both the care of historic buildings and the construction of new buildings.

In this document we have identified the primary features and characteristics which have helped to create the distinctive qualities of the built environment in the Blackdown Hills. From this, design principles can be applied for new buildings, conversions, extensions and alterations.

We hope therefore that the guidance will inform and inspire both those undertaking works and those making decisions about development, as well as encourage a greater interest in the built environment and appreciation of the special qualities of the Blackdown Hills AONB.

In summary, the objectives of this design guide are to:

- **Raise awareness of the quality of the traditional built character of the Blackdown Hills AONB**
- **Help identify and protect the distinctive traditional built character of the Blackdown Hills AONB and promote local identity**
- **Inspire high quality design in new developments which respect the traditional built character and wider landscape of the AONB**
- **Provide a co-ordinated and integrated approach for design advice throughout the AONB**
- **Promote sustainability in design and use of resources, particularly locally produced building materials**

## The Blackdown Hills AONB designation

The Blackdown Hills AONB is one of a family of AONBs established in England and Wales under the National Parks and Access to the Countryside Act 1949. Along with National Parks, AONBs are 'protected landscapes' formally recognised as representing the finest countryside in England and Wales, where special policies should apply to safeguard and manage the countryside for the benefit of this and future generations.

The Blackdown Hills were designated as an AONB in 1991. The primary purpose of the designation is to conserve and enhance the natural beauty of the landscape; 'natural beauty' is not just the look of the landscape, but includes landform and geology, plants and animals, landscape features and the rich history of human settlements over the centuries.

The Blackdown Hills AONB lies across two counties and four districts. One of the tasks of the Blackdown Hills AONB Partnership is therefore to ensure the effort to conserve and enhance the AONB does not vary from one part to another, and between constituent local planning authorities. One of the reasons for producing this guide is to assist these authorities in promoting elements of good design and characteristics of buildings that are commonly found across the Blackdown Hills.

## Planning context

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National planning policy to conserve and enhance the special qualities of AONBs and local distinctiveness is reflected in national planning policy and the development plan documents that make up local development frameworks produced by local councils.

This design guide is intended to supplement and complement the local development plans and other design guidance produced by local planning

authorities, and does not replace these policies and guidance. Adherence to the design guide does not mean that development proposals will necessarily be approved. Other planning policy considerations may make a proposal unacceptable.

Before considering any work concerning buildings in the AONB contact the local planning department to confirm whether planning permission or other consents such as listed building consent, or conservation area consent are required. The building control section will be able to advise on building regulations. Contact details are given at the end of the guide.

## Village design statements and parish plans

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Many local communities have produced their own village design statements and parish plans. These describe the distinctive character of individual villages and the surrounding countryside, and identify design principles which should influence future development in individual settlements. This design guide provides a wider context for the preparation of these local village- or parish-based documents, and will also be very relevant to any communities embarking on a Neighbourhood Plan.



*A new house in the background which draws on the characteristics of its traditional neighbour*

# Landscape and setting

## Geology

The unique geology of the Blackdown Hills is one of the main reasons for its protected status, and is central to the landscape's appearance and character.

Geology is the key to the area's vegetation, farming patterns, settlement patterns and traditional building materials.

The bedrock of the hills is an extensive outcrop of Upper Greensand. A hard, sedimentary rock, it contains the mineral glauconite which gives it its greenish colour. It also contains nodules of chert, a creamy-coloured quartz stone.

Water percolates through the greensand and emerges along a spring line where it meets less permeable rock below, making springs a feature of the Blackdown Hills.

The slope of the bedrock dictates the course of the rivers, which over time have cut deep valleys into the hills.

Settlements tend to be nestled in the river valleys where there is shelter from extreme weather, a ready supply of water, and more fertile soils than on the hilltops.

The overlying sediments create the soils, which in turn dictate the natural vegetation and the types of farming which are successful in the area.

A deposit of clay-with-flint on top of the greensand forms the soil of the plateau. Below the greensand are Marl mudstones, used in cob construction. Flints, greensand and chert are all commonly used in traditional local buildings.

The simplified geological cross-section below illustrates how many settlements are located above the spring lines on the valley sides below the greensand hills with their clay-with-flint capping.

## Landscape features

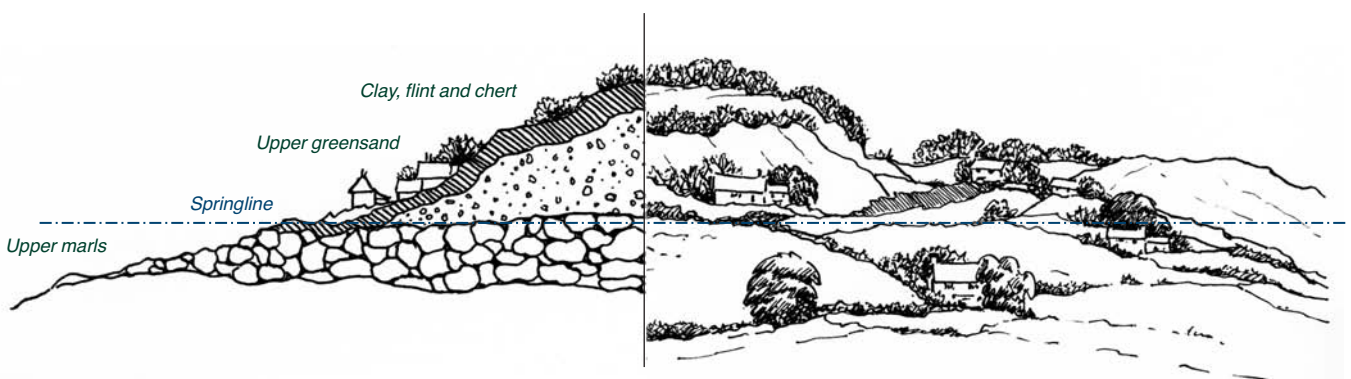
The Blackdown Hills Area of Outstanding Natural Beauty (AONB) is a tranquil, rural, and relatively remote landscape. Elevated, windswept plateaux and ridges give way to steep wooded escarpments to the north and west and broad, deep valleys laid to pasture in the south and east.

The plateaux and ridges are sparsely populated. The area's isolated farms, scattered hamlets and villages are connected by quiet country lanes bounded by hedgebanks.

The Blackdown Hills was designated as an Area of Outstanding Natural Beauty in 1991 for four main reasons:

- **Isolated, unspoilt rural area**
- **Diversity of landscape patterns**
- **Unique geology**
- **Landscape with architectural appeal**

Respecting, conserving and enhancing the built environment are therefore key elements in protecting the AONB.



*A simplified geological cross-section through a Blackdown Hill*



*Typical landscape in the Blackdown Hills*

## Settlement pattern

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The area's largest villages are found near river crossings, for example, Stockland, Chardstock, Dalwood and Hemyock.

Above the valley bottoms, villages and hamlets are located on the slopes along spring lines.

Elsewhere hamlets and isolated farms have been built where there is ready access to water, some shelter and good soils for farming.

Villages at river or road crossings have developed in a nucleated form, clustered around the focal point of the

village, for example Hemyock, Stockland and Churchinford. The existence of an obvious centre such as a crossroads, church or village green, give the village a distinctive character.

Villages that developed along a trade route, river or spring line are linear in form, for example Yarcombe and Luppitt.

Both types of village have their oldest buildings at their core and often focus on their parish church. Buildings near the village centre tend to be tightly packed together with the density of buildings decreasing away from the centre.



*Luppitt, a village that has developed in linear form*



*Churchinford, a nucleated village*

# Built heritage

## Building materials

Traditional houses have a functional simplicity, built from locally available materials to serve the needs of the agricultural community. The most characteristic construction material in the Blackdown Hills is chert. The extent to which it is used is unique in the UK.

Generally laid randomly rather than in courses, it gives buildings a creamy coloured, rough textured appearance.

Beerstone and Hamstone from nearby quarries are most commonly used to provide defined features for chert buildings, for example window mullions, door jambs, chimney stacks and gate piers.

Beerstone, from the village of Beer on the East Devon coast, tends to be found as a detail on buildings in the south and east of the area.

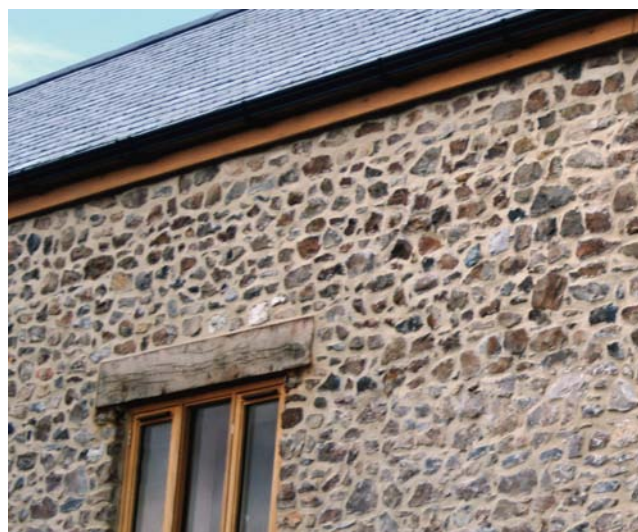
Hamstone from Ham Hill near Yeovil in Somerset, is found generally in the east and north of the area.

Blue Lias, once quarried locally but now from north of Yeovil, is a soft stone that can be cut but which decays quite rapidly so it tends to be used for simple building blocks rather than carved details and it is found as a principal construction material on the east and north side of the area.

Greensand is used where it can be readily quarried, but it is used less often than might be expected because of the comparative simplicity of gathering chert from the fields rather than have to quarry stone.

Finally, cob is a building material made of local soils. Soil is trampled and turned with straw, then piled up and tamped down to create mass construction walls. Traditionally it was trampled by cattle in a yard but today a tractor with a lifting bucket is usually used. On the Blackdown Hills cob tends to be a brown-red colour due to the use of Marl mudstone soils in the mix. Cob is found everywhere in the area but is most common on the area's west side.

Up until the mid-nineteenth century, the local materials described above were generally used for all buildings in the Blackdown Hills. There are remarkably few examples of any alternatives.



*The most characteristic construction material in the Blackdown Hills is chert*

Roofs were thatched. Stone walls were generally built of rubblestone, rather than cut stone, and the stones were laid randomly rather than in courses. Randomly laid rubblestone was the quickest and cheapest way of building a wall.

Occasionally a wealthy property owner would pay for stones to be cut and laid in courses or for rubblestone to be coursed. This indicates a high status building.

Cob walls, and sometimes stone walls, were rendered with lime render and limewashed. Limewash was usually off-white as it was coloured by the minerals in the impure lime. Cream or pink rendered walls are characteristic for the area. There is no tradition of brightly coloured limewashes as found, for example, in East Anglia.

Brick, clay roof tiles and roofing slates were not readily available in the area until the arrival of the railways and the Bridgwater Canal. Prior to this, some bricks may have been made locally and a few wealthy property owners may have been able to afford to import slate by packhorse, but they were not commonly used.

Mass-produced construction materials became increasingly available and affordable from the mid-nineteenth century. An extension of the Bridgwater Canal reached Chard and began operation in 1842. This opened up a supply line for clay roofing tiles and bricks made in Bridgwater, and slates from South

Wales. The London & South Western Railway reached Honiton in 1860 and the Bristol & Exeter Railway reached Wellington in 1866.

Brick or slate features found in the Blackdown Hills can therefore be dated with some confidence as post-1842.

## Positioning and form

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The scale, shape and detailing of traditional buildings are controlled by the need to provide shelter from the prevailing weather and by the building materials that are readily available. In the Blackdown Hills the prevailing weather is moderate rainfall, comparatively mild temperatures and south westerly winds. Buildings tended to be constructed in locations sheltered from south westerly winds, orientated towards the sun with steeply pitched roofs to shed rain.

Historically, it was the length of timber available for floor beams which controlled the depth of buildings. Traditional buildings in the Blackdown Hills tend therefore to be only four to five metres deep.

## Historic houses

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*Medieval cottages at Broadhembury*

### Medieval period to eighteenth century

Houses in the Blackdown Hills built before about 1700 have a narrow, long plan, referred to as a 3-room-with-cross-passage plan. This is common across most of the West Country. Exceptions would have been grand manor houses and very basic dwellings that have not have survived.

It is a plan of three rooms in a line with a front and back door in the long elevations. The doors were directly

opposite each other, linked by a passageway through the depth of the house, referred to as the cross-passage.

On one side of the passage was a one room service area and on the other side of the passage was a main room, called the hall. Beyond this was an inner, more private room for the family.

The two outer rooms generally had a first floor but the hall was open to the roof. Until about 1600 the hall of the house was open to the roof because there was no chimney. Smoke rose into the roof from a fireplace in the centre of the hall floor and escaped from vents in the hipped, gable ends of the roof.

Houses were improved from about 1600 onwards by the introduction of chimneystacks. The chimney was located to heat the hall as it was the main room of the house. Most often the chimneystack was built in the hall backing on to the cross-passage as shown in the diagram below.

An alternative location however was to place it on the front elevation of the house. This was done to show the neighbourhood that the owner could afford a new chimneystack.

The insertion of chimneystacks to control the emission of smoke meant that it was now possible to build a first floor over the hall.

Early houses are therefore often recognisable by their long, narrow plan, the position of their chimneys and by their hipped or half hipped roofs.

Medieval houses had small, timber frame windows with shutters rather than glass. The purpose was of these was to balance the need to let in light and to conserve heat. Early glazed windows generally had a timber frame with side hung iron casements fitted with leaded lights.

High status houses might have stone mullions and lintels in place of a timber window frame, made from Beer stone or Hamstone.

Later windows had timber frames and casements with timber glazing bars in place of leaded lights.

The basic 3-room-cross-passage plan was frequently extended with a lean-to structure at the rear or side of the house, called a catslide or outshut extension. This tradition has continued with buildings of later periods. Less often, an extra two storey extension was added to one or both of the gable ends, or as a rear wing.



*Nineteenth century houses in Upottery that combine Victorian detailing with local building stone*

### **Georgian and Victorian houses (1700 – 1900)**

From the 1700s, houses were built with chimneys as an integral part of their construction. With building stone readily available in the area, hipped roofs were abandoned in place of full height, stone built gable ends that incorporated a chimney stack.

The European fashion at this time was for architecture based on classical proportions. This approach was mixed with the local building style, resulting in the emergence of the highly distinctive Blackdown Hills form of house.

The characteristic Blackdown Hills' house from 1700 until the nineteenth century had a symmetrical front elevation, consisting of a central front door, one window either side of the door on the ground floor, and three windows to light the first floor. It was most often constructed of chert, possibly with Hamstone or Beer stone dressings. It would have originally had a thatch roof but is now more likely to be under a slate roof.

Another house type that developed in the Georgian period, for higher status properties such as rectories and estate farmhouses, was the double pile house. This is effectively two narrow house plans placed back to back.

Georgian houses were often rendered to give the smooth surface finish that was fashionable at the time.

The orientation of windows changed from landscape to portrait to accommodate the vertical sliding sash windows that were introduced to grand houses in the area in the eighteenth century. By the end of the



*Characteristic 18th century Blackdown Hills symmetrical house, built of chert with gable ends*

nineteenth century these were found even in workers cottages.

As explained in the section about building materials, the Victorian period saw the arrival of new building materials and building styles that could be readily imported through improved communications and transport systems. From the mid 1800's through in to the twentieth century, fashions and style of architecture were drawn upon, yet still fit with the local building traditions through form and materials.



*Modern houses, Smallridge reflecting local building styles and materials*

### **Twentieth century houses**

The rich tapestry of the built heritage was added to throughout the last century by individual dwellings, new farmhouses and small housing developments in villages. Although having a style that reveals their date,



*Historic farmsteads are a key part of the AONB's heritage*

in many cases these continued to maintain the local character through scale, simple form and use of materials.

In the second part of the twentieth century though houses were often designed without reference to local traditions and constructed using standard detailing and imported materials such as engineered bricks and concrete roof tiles. Houses of different scales and shapes were built, and along with the houses came new layouts such as cul-de-sacs and roads with wide, splayed junctions.

These types of house often did not relate to the area in terms of plan form, scale, location, or materials, weakening the strength of the AONB's distinctive character.

## Farm buildings

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Historic farmsteads are a key part of the AONB's architectural, agricultural and social heritage. An understanding of a farm building's history and original function will help to achieve a successful conversion or re-use proposal. The setting and group as a whole is often an essential part of the individual building's character.

As well as the farmhouse, farmsteads had a minimum of a storage barn which could also house animals. A large barn is often the oldest building in a farmstead.

As with houses, pre-nineteenth century buildings were constructed of local stone or cob. Some were rendered, some were not. They were a maximum of five metres deep and had thatch roofs.

As farms developed more buildings were often added. Over time, brick, slate and imported stone from neighbouring areas began to be used, and larger buildings were made possible by advances in technology.

# Building today

The Blackdown Hills AONB Partnership encourages development which draws inspiration from the distinctive architectural heritage of the area to create something new.

This section provides information on the materials, construction techniques and design attributes and considerations which help a new house to fit harmoniously into its surroundings, whether modern or traditional in style.

These guidelines are also intended to help in the restoration, alteration or extension of existing properties.



*Restoration of an existing house in the Blackdown Hills*

## Planning and building regulations

Building work which takes places within an Area of Outstanding Natural Beauty is subject to the same planning legislation and building regulations as elsewhere in England.

Unlike National Parks, AONBs do not have dedicated planning authorities. The planning authority is the relevant district or borough council. Before embarking on any building or alteration project, contact the local planning department for advice.

Building regulations apply to the construction of all new buildings, extensions and some types of alteration work. Compliance is normally the responsibility of the builder. Contact the building control department at the district council for more information.

The following guidance is intended to encourage sensitive development in the Blackdown Hills AONB. It

does not constitute formal planning policy or replace building regulations.

There are contact details for all the relevant authorities at the end of this guide.

## Some general design principles

- **Whether new build or alterations, good detailing, appropriate materials and sensitive treatment of the spaces around buildings are essential elements in achieving a successful and sympathetic scheme.**
- **Locations for new buildings and development should follow the traditional settlement pattern and respect the integrity of historical settlement forms.**
- **Layouts for new development sites should reflect the road patterns and plot forms of the surrounding traditional settlement. It is important to create the same sense of enclosure, traditional proportions and massing of buildings: for example continuing a distinct building line along a street.**
- **Building forms and materials should reflect the local traditions.**
- **New extensions and additions to traditional buildings should respect the character and setting of the original building. Where new buildings are adjacent to traditional ones, consider the group as a whole, using scale, form, colour, and materials to link new and old.**
- **Sensitive design of the spaces around buildings is essential to preserve local character: The most harmoniously designed building can look 'out of place' if it is not properly integrated into its setting.**

## Sustainable construction

Construction projects should aim for minimal negative impact on the environment.

When choosing materials and products, consideration should be given to the amount of energy used in manufacture and transport (known as embodied energy), and pollution caused at extraction and processing sites. Ways of addressing this include using local and reclaimed materials wherever possible,

using local labour, and choosing materials that are environmentally certified, such as FSC timber. For example, traditional building materials such as chert, cob and timber, which contribute so much to the quality of Blackdown Hills buildings, tend to have low levels of embodied energy since they often involve minimal processing and are sourced locally.

Energy use is considered further in the section on Domestic Energy.

The building process should be planned to cause the least possible damage to the immediate environment. This may mean carrying out work at certain times of the year to avoid disturbing nesting birds or damaging trees for example.

## Nature Conservation

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New developments should look for opportunities to make a positive contribution to the natural environment. As well as any steps that may be required to protect certain species, proposals should aim to encourage wildlife. Features to encourage birds and bats can be easily installed on new or existing buildings; hedgerows and trees provide shelter, feeding and nesting sites for a variety of species and act as wildlife corridors. Stone walls also provide valuable wildlife habitats.



*Stone walls provide valuable wildlife habitats*

## Orientation and passive solar gain

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Prior to the twentieth century houses were designed to conserve energy. They tended to be orientated towards the sun and to have small windows to keep in what heat was being generated by an open fire or range. Today, the importance of reducing carbon output means that these old design principles are relevant once again.

Capturing warmth from sunlight to help heat a building is known as passive solar gain. This should be exploited wherever possible within an appropriate design.

Where practical, the longer elevations of a house should be orientated towards the sun and the principal rooms placed on the sunny side of the house. In a development of more than one house, there needs to be a balance between optimal positioning for passive solar gain, and a layout which fits in with the character of the area.

In keeping with the building traditions of the area, small to medium sized windows should be placed on south facing elevations. An advantage of this is that houses with slightly smaller windows tend not to overheat in warm weather.

A design with a significant amount of south facing glass should only be proposed if the appearance is in keeping with the character of the area and if the heat dynamics are fully understood. Over-heating can result in excessive energy consumption because of the need for air conditioning.



*The gable ends of houses are frequently extended to become low garden walls giving a characteristic sense of enclosure along lanes and in villages and hamlets*

## Position

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The majority of traditional houses on the Blackdown Hills are set close to the road, either parallel to the road or gable end on. The gable ends of houses are frequently extended to become low garden walls giving a characteristic sense of enclosure along lanes and in villages and hamlets.

New buildings should have a similar relationship to the road as their neighbours, to avoid gaps in the village street-scene or an uncharacteristic set-back. It is possible with careful design to position a new house in the traditional way, and still provide parking.

## Size and scale

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A two storey house design with a narrow plan and gable ends is most likely to fit in with the character of the area.

Houses in the Blackdown Hills tend to be relatively small in scale. It is important that the overall mass of a new property does not overpower its neighbours. One way of achieving this is to break up the form of the building with a one or two storey wing additional to the main body of the house. This could take the form of the traditional catslide extension.

A new property should have similar ridge and eaves heights to its neighbours, and windows and doors should be of a similar size.

## Building materials and methods

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As set out in the Built Heritage section, typical building materials are greensand, chert, flint and cob, any of which might be rendered and limewashed. These are augmented by stone from neighbouring areas.

Using the palette of Blackdown Hills' materials can help new houses to stay in keeping with the character of the area. It is also more fuel efficient to use local materials in construction.

Modern insulation and damp proofing standards require up-to-date building methods, but these can be combined with traditional materials to create buildings with character.

Local stone may be used to face a timber frame or blockwork house. Blockwork can be rendered with traditional lime.

Concrete blocks with in-set flint or chert are readily available but must be carefully chosen and handled to avoid a heavily-banded appearance, which is not a local characteristic. The random rubble appearance of a traditionally constructed building is desirable.

Cob is a versatile material and can be used for new buildings and extensions.

All traditional materials tend to be repairable and recyclable and take less energy to produce than plastic or cement-based alternatives. Although traditional materials can be expensive, they generally have greater longevity if maintained properly. It is recommended that builders and craftspeople with specialist experience are always employed when working with traditional materials.

## Render and mortar

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The pointing of rubble stone buildings has as great an impact upon the appearance of the building as the stone itself. The mortar colour and profile should match closely that of neighbouring vernacular buildings, with careful consideration given to the ratio of mortar to stone and joint widths.

Lime mortars and renders are reusable, less environmentally damaging in their production than cement, and can be sourced locally. They allow a building to breathe and do not crack with movement.

Lime render is a characteristic finish for both cob and rubblestone walls. In the Blackdown Hills, lime render should be applied in soft shades of cream and pink.

*Flint with stone detailing, typical building materials in the Blackdown Hills, in this example laid in courses*



## Windows

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The appearance of a building is strongly influenced by the positioning, size and design of the windows. Blackdown Hills' houses tend to have comparatively small windows with multi-paned frames. Window styles and sizes should be designed appropriately in the setting of neighbouring houses.

Side-hung casements work best for small, square windows and landscape aspect windows. Taller windows of portrait aspect may be better fitted with vertical sliding sashes.

Timber is a more traditional and sustainable material than metal or PVCu that provides a more characteristic and balanced appearance. Both windows and doors are traditionally painted, rather than using wood stain.

The setting of the window within the depth of the wall is also important. The setting of the frame within the window reveal should be based on neighbouring vernacular houses.

## Roofs

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Steeply pitched, gable end roof structures are the most common form. Slate, pantiles, occasionally plain tiles and thatched roofs are the typical roofing materials. The shape, size, pitch and colour of the roof are important elements of a building, the street scene and wider landscape setting, and an important factor to consider if the building is very visible.

## Guttering, downpipes and bargeboards

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Eaves details should be plain and simple with a thin fascia board flush to the wall. Traditionally, gutters are supported on wall mounted brackets rather than attached to a timber fascia board. Traditional gutters and downpipes are made of cast iron. Powder-coated aluminium is a cheaper alternative and is more similar in appearance to cast iron than PVCu. Dark coloured gutters and downpipes are generally less obtrusive.

During the nineteenth century bargeboards were introduced as a design feature, often with ornate styling. They are appropriate for some Victorian buildings but are not generally a typically characteristic feature.



*Blackdown Hills' houses tend to have comparatively small windows with multi-paned frames*



*Characteristic gable end roof under modern slate*



*Plain and simple fascia board with dark coloured gutters and downpipes are generally less obtrusive*



*This terrace in Kilmington shows that chimney stacks can be interesting features in their own right*

## Chimneys

Chimneys are usually internal at the gable end of houses. In the case of an historical building, the chimney stack is likely to be an integral part of the design and attractive features in their own right. New houses can be provided with working chimneys so that it is possible to install a heating system which burns wood or wood fuel. Chimneys can be used as a convenient location for boiler flues or for ventilation intakes and extracts; however it is better to avoid false chimneys without a function.

## Extensions to existing houses

Generally extensions should fit in with the character of the existing building and should not overpower it. The roof structure, eaves and ridges of the extension should complement the existing building. Construction materials may be the same or may complement the existing structure. For example, render or weather



*Complementary materials such as render or weather boarding may be suitable for extensions*

boarding could be placed next to rubblestone, or slate next to thatch. Windows should generally be of similar size and proportion to the existing house.

## Conversions

Some old farm buildings have become redundant as farming practice has changed. Even though they may not be specifically protected, most traditional farm buildings are historic assets, particularly the many intact small farmsteads of the Blackdown Hills. The setting is often an essential part of the building's character.

Most traditional farm buildings are simple, functional structures built from local materials with small window openings and minimal decoration. Successful conversions respect and reflect the building's original functions and maintain the agricultural character and historic elements on the outside and inside. The layout of the existing building will impose limits on what is achievable.



*Successful conversions respect and reflect the building's original functions*

## Hedges and boundaries

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Boundaries around properties in the Blackdown Hills are traditionally demarcated with rubblestone walls or hedges and hedgebanks planted with species commonly found in the area such as oak, ash, beech, hazel, hawthorn and blackthorn. Cob walls and iron railings are also occasionally used. Mass-produced fencing and decorative concrete blocks are not typical and have a disproportionate impact on character.

While the traditional methods of enclosing space may initially be more costly or take longer to establish, they have greater longevity and are fundamental in helping to maintain the character of an area, and will help to 'anchor' new development into its surroundings.

The maintenance and repair of boundary walls or the erection of new ones has very similar considerations to the walls of buildings. The style of capping used on a wall can contribute much to local distinctiveness.



*The style of capping used on a wall can contribute much to local distinctiveness*

## Driveways and external spaces

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A well-designed drive blends into the setting and helps a house to look appropriate in the landscape. Wide entrances, sweeping corners, and large areas of tarmac or block-paving can result in an appearance which is out of character.

New drives must meet highway planning requirements. However, there is some flexibility within the legislation for non-standard layouts to be adopted, as long as it can be shown that vehicles can negotiate the access without an unsafe level of risk.

Through careful design and discussion with highway advisors, it is possible to come up with a sensitive design which features, for example, a narrower driveway or tighter curves.



*A well-designed drive blends into the setting and helps a house to look appropriate in the landscape*

## Lighting

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If external lighting is installed it should only light a specific area such as a drive or parking area and not the wider countryside. Directional cowls should be fitted to stop or limit light spillage, lights should be directed downwards not upwards, lower wattage bulbs can be used and lights should be fitted with timers and passive infra-red detectors to ensure that they are only on when needed. These steps will help to preserve the AONB's dark starry skies, and avoid disturbance to wildlife and neighbours. Information to help minimise light pollution from homes is available on the Blackdown Hills AONB website.

# Domestic energy

## Energy conservation measures

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A key consideration for the maintenance, management and alteration of existing properties and the construction of new properties is energy and resource consumption. Changes to old buildings and the construction of new ones should be carried out in materials that have as low as possible impact upon the environment and introduce features that help occupiers of the buildings to minimise their consumption of energy, particularly energy from carbon emitting, finite, fossil fuels.

The use of microgeneration energy installations: photovoltaic units, solar thermal units, wind turbines and ground, water and air heat source units are ways in which property owners can seek to reduce their consumption of fossil fuels. However, these installations can be highly visible in the landscape and streetscene, sometimes quite changing the appearance of a building or its setting.

As a first step it is advisable to consider measures to reduce energy use and improve energy efficiency before thinking about renewable energy installations.



*Sheep's wool makes ideal insulation material*

## Traditional versus modern building construction

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A significant number of the buildings on the Blackdown Hills were constructed before 1900. These houses would not have been built with cavity walls, damp proof courses, insulation, central heating systems or double

glazed windows. They are buildings that function closely with the environment in that they allow a little damp in but, by virtue of the draughts that also get in, the damp is generally dispersed into the atmosphere and no significant damp problem should arise.

Modern buildings with insulation, damp proof courses, and other methods work in a different manner, their aim is to exclude damp and cold and to have very little connection with the external environment. Modern buildings are required to operate on a near airtight basis. To attempt to make a traditional building function as a modern building by trying to make it impermeable to damp and cold can result in huge damp problems.

It is virtually impossible to keep damp from penetrating through the walls of a solid rubblestone, cob or brick building. If damp does inevitably get in and then cannot escape because of newly fitted double glazed windows, draught proofing and the loss of the open fire, then it will remain as damp within the building.

A good understanding of the way that a traditional building works is therefore required before any intervention is made. This may include rainwater goods efficiently discharging run-off away from the house so avoiding the house sitting in a 'puddle', avoiding insulation that traps damp in walls and doors and windows that entirely eliminate air movement.

It is highly advisable to discuss matters such as damp proofing and insulation with a surveyor experienced in the care of traditional buildings prior to implementing any changes to ensure that the changes will achieve the end goal rather than adding to any problem.

Nevertheless, there are some simple measures that can be taken to help conserve energy in all houses.

## Methods of conserving energy

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### Insulation

The loss of heat through the roof is significant and the laying of insulation material in the roofspace between the ceiling joists is a simple procedure as long as the eaves ventilation to the roof is not blocked off. In traditional buildings it is desirable for the insulating

material to be vapour permeable to allow any damp that has got in from outside and vapour from activities in the building such as cooking and washing, to be able to pass through the insulation material. Hemp and sheep's wool insulation are ideal for this.

It is a straight forward procedure to insulate cavity walls too, and wooden floors can be insulated where appropriate.

### **Draught proofing**

Draught proofing of doors and windows and openings such as letter boxes will go a long way to help remove the chill feeling caused by draughts. Shutters and thick curtains are a traditional and effective way of draught proofing. There are specialist companies that repair and draught proof, for example, sash windows so that they still operate effectively but let in a lot less unwanted air.

If vapour producing rooms such as kitchens and bathrooms are effectively draught proofed then mechanical ventilation in the form of a fan may be required to remove the damp air from the room.

### **Windows**

In older houses built with single glazed windows, their replacement with double or triple glazing will undoubtedly make the house feel warmer and reduce energy loss but it may not always be a viable option in historic buildings or on cost grounds. Thick curtains, shutters and secondary glazing are alternative, cheaper, energy conservation measures that could be considered.

### **Pipework insulation**

Insulate all pipes to ensure that heat gets to where it is wanted rather than being lost under floors or in roofspaces.

### **Efficiency of existing heating system and household appliances**

Check the existing heating system to see whether it is working as efficiently as possible, or look at the cost of fitting a more fuel efficient boiler. Change to low energy bulbs, and energy efficient household appliances.

### **Domestic renewable energy**

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Separate guidance is available which assesses the constraints and opportunities for renewable energy in the Blackdown Hills. It contains a description of

different technologies and consideration of costs and carbon saving. It also provides an overall assessment of the potential landscape impact. It is available at [www.blackdownhillsaonb.org.uk](http://www.blackdownhillsaonb.org.uk).

This guidance therefore focuses on providing some simple advice on ways to reduce any impacts from household microgeneration installations in relation to the immediate built environment.

You should contact your local planning authority to discuss whether planning permission or listed building consent is required for your specific proposal and seek advice on building regulations requirements.

### **Photovoltaic and solar hot water**

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There are two types of solar panel. Photovoltaic (PV) panels or tiles generate electricity from the sun's energy. Solar panels or collectors use the sun's radiation to heat water. [Note that reference here to panel is intended to refer to the technology and covers the increasingly wide choice of products including PV tiles and slates.] Both work best facing south at an angle of 30-40° and located to avoid shadowing from chimneys, trees or neighbouring properties for example.



*PV and solar panels installed on an older property*

In new developments solar panels should be integral to the overall design. PV panels are available in different colours and a range of designs that can be used to provide a contemporary design or match more traditional materials and finishes. Increasingly solar heating collectors are becoming available that can be incorporated into a new or existing roof in much the same way as rooflights. Panels should be flush with the roof to minimise contrast.

Consideration of the positioning of panels can help to minimise any visual impact by retaining the balance and appearance of a house, for example by lining the panels up with windows and matching the size of the panels to existing features.

Outbuildings or extensions can provide good locations that have minimal effect on the overall building, or free standing panels within the garden may offer a good solution, especially in the case of older vernacular buildings.



*Visual impact can be minimised if a turbine is set against a backdrop of trees*

## Wind energy

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Even small wind turbines can have visual impacts on sensitive landscapes. There may be important views to consider from settlements, public access land, public rights of way and other public vantage points.

Developments that break skylines can have more significant landscape impacts, so consider siting a turbine on lower slopes rather than on hill tops. Impacts can also be minimised if a turbine is set against a backdrop of trees or group of buildings.

Landscape impacts can be reduced by the choice of a suitable colour for the turbine and its pole. Examples are the use of semi-matt off white or light grey to blend with the sky or dark grey or black to blend with hills and trees. If possible cables connecting a turbine to the dwelling or grid should be put underground.

Consider the likely noise that a turbine will make so that any impacts on the tranquillity of neighbouring properties and surrounding countryside can be

assessed. Check to make sure that the turbine shadow will not cause a flicker effect on neighbouring windows.

Consider the height of the turbine in relation to any adjoining buildings and try to ensure that it is in proportion and consider design issues such as colour, reflectivity and size. If mounted on a building a turbine fixed to the gable end will minimise the length of the pole.

The main species likely to be affected by turbines are birds and bats. Many species of bird and all species of bat are protected by law. Specialist advice should be sought if bats are known to be present and it may be that a wind turbine is not the best option. Bats tend to occupy old buildings and trees and will often fly along hedgerows and other natural corridors and this should be considered in choosing an appropriate location for a turbine.

## Heat pumps

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Ground source heat pumps use a buried ground loop which transfers heat from the ground into a building to provide space heating, generally with under floor heating, and sometimes to pre-heat hot water. Water source heat pumps use temperature differences in a similar way to extract heat via a heat exchanger. Air source heat pumps are mounted directly on an external wall to make use of the ambient air as a heat source.

Before digging trenches to install ground source heat pumps, check with the county council archaeology service to ensure there are not likely to be any archaeological remains that would be damaged by the works. Consider also whether the work may cause damage to a habitat that is of high wildlife value. In such cases it could be better to install the pipes vertically using a borehole.

Using heat exchangers in water bodies such as ponds and lakes could lead to ecological impacts through localised temperature changes and specialist advice should be sought.

The main issue with the installation of air source heat pumps is the siting of a heat exchanger on the outside of the building. It should be positioned carefully to avoid detrimental impacts on the building, particularly if it is listed or is in a conservation area. It is worth considering detailed design issues such as fixings, colour, reflectivity and size.

## Glossary

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**Bargeboard** – a timber piece fitted to the outer edge of a gable to protect roof timbers from the weather, sometimes carved for decorative effect

**Casement** – A window frame hinged on one side so that it swings out or in to open

**Catslide** – A roof with a break in pitch, the lower section being a lower angle than the upper. This might be found where a roof line is extended from a two storey building down over a single storey extension

**Chimney stack** – the part of the chimney breast visible above the roof

**Cob** – a traditional mixture of earth, sand, straw and water pressed together to form the walls of a building

**Cut stone** – building stone that has been chiselled or worked into a desired size and shape

**Door jambs** – a pair of vertical posts or pieces forming the sides of a door frame

**Eaves** – the eaves of a roof are its lower edges, usually projecting beyond the walls of the building to provide weather protection

**Embodied energy** – the energy used (and therefore the CO<sub>2</sub> emissions) in manufacturing, packaging and transporting a product, material or service

**Fascia** – the vertical board under the lower end of the roof to which the guttering can be fixed

**Gable end** – the triangular portion of walling between the edges of a sloping (pitched) roof and the wall below it at the end of a ridge roof

**Gate piers** – a column or pillar of brick or masonry to which the hinges of a gate are attached

**Half hipped roof** - a roof finishing at a gable end where a small section of the top part is angled or hipped, the rest vertical

**Hipped roof** – a roof without gable ends so it slopes at the ends as well as the sides

**Landscape** – the character and appearance of land, including its shape, form, ecology, natural features, colours and elements and the way these components combine

**Lime mortar** – one of the oldest forms of mortar, used to bind construction blocks, composed of lime, an aggregate such as sand, and water. Unlike modern cement, it is breathable and slightly flexible, making it particularly suitable for buildings of traditional construction

**Lime render** – a lime based cement-like mortar applied to the external walls of stone buildings. In contrast to modern cement based mixes, it is porous and allows the masonry to breathe

**Lime wash** – a traditional low cost paint, based upon lime and water

**Lintel** – a horizontal beam over a door or window opening that is carrying the weight of masonry or brickwork

**Local distinctiveness** – the positive features of a place and its communities which contribute to its special character and sense of place

**Mass construction walls** – a method of constructing a stone, brick, or cob wall where the weight of the roof is transmitted to the ground continuously along the length of the wall. In comparison, with frame construction the weight is focused on posts positioned along the length of the wall

**Pointing** – mortar joints between masonry blocks or bricks

**Ridge height** – the highest part of the roof structure

**Rubblestone** – irregular, variable sized and shaped building stone

**Scale** – the impression of a building when seen in relation to its surroundings, or the size of parts of a building or its details, particularly as experienced in relation to the size of a person

**Soffit** – the underside of eaves or other projection

**Spring line** – a line of springs along the sides of a valley, as a result of a change in the underlying geology

**Vernacular** – the way in which ordinary buildings were built in a particular place, making use of local styles, techniques and materials and responding to local economic and social conditions

**Wall capping** – weatherproof finish along the top of a wall, often decorative and formed of stone, slate, tile or brick

**Window mullion** – vertical dividing structure in a window frame

# Contacts and further information

## Local authorities

For Planning, Building Control and Building Conservation:

### East Devon

#### District Council

Council Offices  
The Knowle  
Sidmouth  
Devon EX10 8HL  
Telephone: 01395 516551  
[www.eastdevon.gov.uk](http://www.eastdevon.gov.uk)

### Mid Devon

#### District Council

Phoenix House  
Phoenix Lane  
Tiverton  
Devon EX16 6PP  
Telephone: 01884 255255  
[www.middevon.gov.uk](http://www.middevon.gov.uk)

### South Somerset

#### District Council

Council Offices  
Brympton Way  
Yeovil  
Somerset BA20 2HT  
Telephone: 01935 462462  
[www.southsomerset.gov.uk](http://www.southsomerset.gov.uk)

### Taunton Deane

#### Borough Council

The Deane House  
Belvedere Road  
Taunton  
Somerset TA1 1HE  
Telephone: 01823 356356  
[www.tauntondeane.gov.uk](http://www.tauntondeane.gov.uk)

## Blackdown Hills AONB Partnership

### Useful references:

AONB Management Plan 2009 – 2014 (2009)

East Devon and Blackdown Hills Areas of Outstanding Natural Beauty and East Devon District Landscape Character Assessment and Management Guidelines (2008)

Light pollution in the Blackdown Hills and Light Pollution Action for householders (2009)

Renewable Energy in the Blackdown Hills Area of Outstanding Natural Beauty (2010)

## English Heritage

[www.english-heritage.org.uk/your-property](http://www.english-heritage.org.uk/your-property)

[www.helm.org.uk](http://www.helm.org.uk)

[English Heritage website providing case studies, guidance and publications]

## Other design guides

Planning Design Guide for Mid Devon (undated)

Extensions and alterations to houses – a design guide.  
South Somerset District Council, 2010

Landscape Design - a Guide to Good Practice.  
South Somerset District Council, 2006

Design Guide for Taunton Deane (1998)

## Reference books and useful websites

Buildings of England: Devon. Nikolaus Pevsner, revised edition 1989

Buildings of England: South and West Somerset. Nikolaus Pevsner, new edition 2002

Devon building, an introduction to local traditions. P Beacham (ed), 1990

The traditional houses of Somerset. Jane Penoyre, 2005

Traditional buildings in the parish of Combe St Nicholas.  
Somerset Vernacular Building Research Group, 2009

[www.devonbuildingsgroup.org.uk](http://www.devonbuildingsgroup.org.uk)

[a group whose aim is to encourage awareness of all aspects of the wealth of historic buildings in Devon]

[www.devonearthbuilding.com](http://www.devonearthbuilding.com)

[an association whose aim is to sustain the ancient and traditional practice of building in earth or 'cob' in the South-West of England]

[www.svbrg.org.uk](http://www.svbrg.org.uk)

[website of the Somerset Vernacular Building Research Group]

## Domestic energy

[www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

[www.climatechangeandyourhome.org.uk](http://www.climatechangeandyourhome.org.uk)

[English Heritage website for those with older houses]





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