The UK Forestry Standard

The governments' approach to sustainable forestry

Forestry Commission

Scottish Forestry
Coilltearachd
na h-Alba

Cyfoeth Naturiol Cymru
Natural Resources Wales

FOREST SERVICE

6. Forests and Landscape

Landscape is a uniquely broad and overarching element that provides the setting for forestry and contributes a range of design principles, techniques and processes that facilitate effective forest planning, design and management. The UKFS approach is to assess landscape character and reflect it in forestry practice through an appreciation of the landscape context and the application of forest design principles. Other guidance and information may need to be used in conjunction with the UKFS.

Conserving and enhancing landscapes

The UK has a great diversity of landscapes arising from the interaction between natural processes and human interventions. This diversity is reflected in the rich variety of forested landscapes across the UK. Landscape is well known for being appreciated for its visual contribution to our surroundings. A landscape is also a resource in its own right, requiring an understanding of the interaction between natural components, human influences and cultural values. Considering all the factors that make up a landscape and its functions provides a way of appreciating our surroundings and is a useful spatial framework for thinking about a wide range of environmental, land-use and development issues such as forestry.

The creation of new areas of resilient, multifunctional forests is a high priority for the UK so it is more important than ever to apply forest design principles and process. This will ensure forests are well-designed and managed in an efficient manner, resolving complex design issues, delivering on multiple objectives and conserving and enhancing landscape character.

Forests in the landscape

Forests are important elements in the landscape that change over time. They can enhance and enrich the environment and make a significant contribution to the character of a particular landscape. In some landscapes they are the dominant element, enclosing space, providing seasonal colour, texture and scale, masking some landscape features and views while framing others.

The UK has lost a greater proportion of its natural forest cover than most countries in Europe, because of a long history of clearance for agriculture, development, as well as demand for timber, especially in times of war. In the first half of the 20th century, creating a strategic timber reserve was a priority for the UK government and that was often characterised by large-scale blocks of non-native conifers with limited species and age diversity, laid out in geometric shapes that followed ownership boundaries. These new forests were frequently in visually prominent locations and from this time onwards landscape professionals were commissioned by the forestry authorities to provide guidance and advice, primarily about how to ameliorate visual impacts. Visual force analysis was a technique specifically designed to address this issue by using the analysis of landform to influence more natural forest shapes, enabling better landscape fit. Some of these legacy blocks are still undergoing management and adaptation but, since the 1960s, an increasing amount of attention has been given to the impact of forestry on the landscape.

In terms of visual design, forests and trees have long been appreciated in the layout of grounds of great houses, parks and sporting estates, while the idea of a romantic 'wild' landscape still influences how landscapes are appreciated. Two guiding principles set the foundation for the design of forests:

- Forest landscape design should emulate 'natural' patterns and forms.
- Principles of visual design, used by designers in other fields, should be applied to the landscape design of forests.

Although visual matters remain integral to landscape, forest design principles are also applied more broadly to address the needs and aspiration of modern forestry and woodland creation. Forest design principles cover the holistic nature of landscape character and its functionality in an integrated approach across the UKFS elements. They are relevant and effective for designing and managing the more diverse, resilient, multi-functional forests and woodlands of today.

In urban areas, there is increasing interest in the contribution that forests can make to improving health, well-being and quality of life, regenerating urban communities, restoring derelict land and improving perceptions of the area. They can be used in the landscape restoration process to help visually integrate otherwise disparate elements, as well as reducing any unwelcome visual prominence in the wider landscape of infrastructure such as roads and buildings.

Forests are often significant components of protected areas such as National Parks, National Scenic Areas and Areas of Outstanding Natural Beauty, and the landscape impacts of afforestation, clearfelling and forest roads are considered in the context of the country designation(s) and policies that apply.

Forestry and the planning system

Woodland creation and forest management activities are not defined as 'development' and so do not come within the scope of the Town and Country Planning Acts. However, some construction associated with forestry proposals such as an access track or a quarry may be subject to planning controls, particularly in areas with landscape designations.

At a local level, planning authorities have responsibility for landscape issues. They have the power to define areas of high landscape importance and to provide for their conservation and enhancement through policies in their local plans and supplementary guidance. Local planning authorities are consulted on forestry proposals, with landscape and visual impacts frequently considered as important issues.

When the scale or sensitivity of a forestry scheme warrants an EIA, the landscape might need special consideration through a Landscape and Visual Impact Assessment (LVIA). A LVIA provides a consistent and recognised method for assessing the effects of landscape change and can be tailored to the complexity of a forestry proposal and the sensitivity of the landscape.

Local authorities can apply Tree Preservation Orders and designate Conservation Areas to protect trees that are important in the landscape, and they may also apply planning conditions to protect existing trees or plant new ones as part of a development consent, entering into 'planning gain' agreements for additional woodland creation or protection.

Developed by local authorities and statutory authorities across the UK, an LCA is a recognised method to analyse the key characteristics that make landscapes distinct, and to categorise and map landscape character types. LCAs can operate at a range of scales, from broad regional studies to local areas of land. Many local authorities take a proactive role in co-ordinating registers or inventories of landscapes of design interest, and some also work with the statutory authorities on historic landscape, parks and gardens. These sources of information can help develop a comprehensive picture of the landscape context for forest design.

Forest landscape design

Forest landscape design – the design of forested landscapes – is important both for woodland creation and for redesigning existing forests at the rotation stage, when felling and restocking (or regeneration) provides management with an opportunity to reassess their design and enhance the visual contribution they make to the landscape.

The setting or 'context' in which forestry is practised today is shaped by the influences of the renowned beauty and diversity of the UK's landscapes and our long history of human settlement and land use, combining to create a strong and locally distinctive 'character', often with historical and cultural associations. Through the appreciation and analysis of landscape context, forests can be planned and designed to make a positive contribution to the character of a local area and create attractive new landscapes. Most landscapes can accommodate more trees and forests, especially where this contributes to resilience. However, in a limited number of situations, the landscape context will be such that forests and their associated infrastructure will be inappropriate or restricted, in terms of siting, extent or composition.

The UKFS approach uses both the landscape context and forest design principles, and provides a rationale to underpin the design process. By following the UKFS, landscape change relating to forestry can be developed in an informed way and communicated to a wide range of audiences. Photographs, annotated plans and three-dimensional visual representations of the forest can be useful to explain what is proposed, playing an important role in understanding and communicating the potential landscape change.

UKFS Requirements for Forests and Landscape

Landscape context

The landscape context concerns the relevant characteristics pertaining to the site, situation and local area of a proposed or existing forest. This will include the landscape character, sensitivity, distinctiveness, historical and cultural significance.

The European Landscape Convention (ELC) promotes the protection, management and planning of all European landscapes, including natural, managed, urban and peri-urban areas, and landscapes that range from special to everyday and even degraded. The UK has agreed to its core principles of:

- putting people from all cultures and communities, and their surroundings, at the heart of spatial planning and sustainable development;
- recognising that all landscapes are important, whether beautiful or degraded, and that they are an inheritance shared by everyone;
- increasing awareness and understanding of landscape and its value, as a unifying framework for all stakeholders whose activities affect it;
- promoting a more accessible, integrated and forward-looking approach to managing the landscapes we have inherited, and in shaping new ones.

Some local authorities have developed specific plans for forestry that identify opportunities and sensitivities through forestry and woodland strategies, forestry frameworks and community forest plans. In some urban areas, local strategies have been established to improve the landscape and promote regeneration through woodland creation, for example, The National Forest, Community Forests and Central Scotland Forest.

1 Forests should be designed and managed to take account of the landscape context, considering the sensitivity, character and distinctiveness of the local area in line with the European Landscape Convention.

2 Forests should be designed and managed in consultation with statutory bodies to take account of landscape designations, designed landscapes, historic landscapes and the various policies and strategies that apply.

Forest design principles

The factors that determine the landscape context provide the framework for assessing the forest site and local area, determining the sensitivities and refining the forest design objectives. Informed by this assessment, forest design principles, based on the principles of visual design, can be applied (Box 6.1). These have stood the test of time and give a proven rationale for improving the visual quality of forests.

3 Forest design principles, informed by the landscape context, should be applied to ensure landscape and visual aspects are appropriately addressed.

UKFS Guidelines on Forests and Landscape

Landscape context

Landscape character

The UK has a rich variety of landscapes, and understanding their character is fundamental to planning for landscape change and informing forest design. Landscape character in the UK has often developed over a long period of time – sometimes, as with woodland, growing subtly and imperceptibly by responding to gradual shifts in land management or climate; other times changing abruptly and dramatically, such as when new development takes place, quarries and mines are worked (or restored), when financial incentives drive rapid afforestation, or when a large area of diseased trees is clearfelled.

An LCA is an accepted approach used to identify and analyse the consistent pattern of elements (e.g. geology and geodiversity, landform, watercourses, land-use and settlement patterns) that make landscapes distinct, and to categorise and map these as landscape character types. This approach can be applied at any scale and can be used in the forest design process to gather and appraise landscape baseline information and inform forest design concept options. LCAs have become strategic landscape planning frameworks across the UK. Frequently they have developed through partnerships between local authorities and the statutory landscape agencies, where approaches may differ.

An LCA will usually include:

- A description and mapping of the landscape, including the key characteristics and special qualities of a landscape, including those relating to trees and forests.
- An evaluation of the landscape, its condition and strength of character.

An LCA may also provide guidance on a variety of issues that may result from landscape change, including potential woodland creation proposals.

Where available, formal LCA studies provide an essential starting point for forest design, and will inform how the siting, extent and composition of forests can be planned so that they make a positive contribution to the landscape. This is particularly important for significant areas of new woodland or large-scale felling and restocking (or regeneration) proposals that may impact on sensitive landscapes.

1 Refer to relevant Landscape Character Assessments and other design guidance as part of the forest planning process.

2 Study the landscape character at a local level, identifying the key characteristics of the landscape; use the analysis to inform the forest design.

3 Where woodland creation is proposed, consider the sensitivity of the landscape to accommodate change, and design it to have a positive impact on landscape character.

Landscape and visual sensitivities

Landscapes may be considered sensitive to change for a variety of reasons, such as for their valued landscape character, geological diversity, natural heritage, historic importance or scenic qualities and, on occasions, a combination of these values. Nationally and locally valued areas may be protected by designation (meaning that woodland creation might be considered inappropriate), or by guidance on how the location and type of woodland can be designed to benefit the character and sensitivities of the landscape.

The particular quality of a locality that gives it its identity and makes it unique and special to the people who live there or visit is known as local distinctiveness (Figure 6.1). The quality is the way that natural and human influences – such as landform, vegetation patterns, land-use and built structures – combine to form what is essentially a cultural landscape. Local distinctiveness contributes towards local people's identity and helps them to enjoy, remember and value particular places. Forestry proposals should both respect and build on local distinctiveness.

Figure 6.1
This dominant hill adds local distinctiveness to the landscape. Any proposals for afforestation or tree planting which could affect well-known local views should be discussed with the local community.

The creation of new forests and the felling and restocking (or regeneration) of existing ones has the potential to dramatically alter landscapes. An essential part of the forest design process is the consideration of the effect that woodland creation and forest management will have on both the character of the local landscape and visual amenity of those who will experience the changes proposed. Any proposals for afforestation or tree planting that could affect well-known local views should be discussed with the local community.

Changes should be considered and assessed in terms of:

- **Landscape sensitivity** – natural heritage and cultural or historical associations all contribute to landscape and scenic value and may be supported by designation.
- **Landscape character** – an appreciation of the description of the current key characteristics of a local or regional landscape and how this may change as a consequence of the proposals is the starting point for the design process.
- **Landscape visibility** – determined by the prominence and topography of the landscape, the number of agreed viewpoints, and the presence of elements that may screen or frame views (Figure 6.2).

Figure 6.2
This landscape is sensitive to change as it is in a National Park, visible from major roads and settlements and seen by many people – including tourists.

- **Number of viewers** – depends on the size of the local population, settlement pattern and how the landscape is used by local people, those in transit and visitors.
- **Nature of viewing experience** – influenced by factors such as whether the view is seen from a moving vehicle or a neighbouring dwelling, or provides the backdrop to a visitor attraction, or is a view glimpsed through a forest opening.

Proposals for change need to be considered for their potential effect on the character of the existing landscape, specifically the recognised key characteristics and their relationship to each other. They will also need to be considered for their potential effects on visual amenity throughout the area from which the proposals will be visible, considering the nature of the view and the potential impacts on the viewer. This is typically done from a range of representative viewpoints. The changes should then be illustrated to provide the basis for an assessment of people's responses to proposed changes, and to the overall effects on visual amenity.

The potential visual effects of forestry proposals from each selected viewpoint should be considered against six criteria:

- **Visual sensitivity** – the relative sensitivity of a landscape scene to accommodate a forestry proposal.
- **Importance of view** – a judgement on the relative value of a view with respect to the viewer and the effect of the proposals on local distinctiveness.
- **Description of effect** – the proximity of the viewer to the proposals, the extent of the effects on the view, how the visual effects may change over time and whether the effects make a positive or negative contribution to the scene.
- **Cumulative effects** – the impact of the proposals in combination with other local forestry proposals.
- **Mitigation** – any practical measures that could reduce negative visual impacts.
- **Significance** – a summary statement representing a judgement of the potential effects of the forestry proposals on visual amenity from each viewpoint, incorporating potential cumulative effects and mitigation.

For all forestry proposals, assessing the landscape context will involve an appreciation of landscape and visual sensitivities as part of the forest design process. For the more extensive and environmentally significant proposals, for example, where an EIA is required, an LVIA may also be needed, to guide the forest design and communicate the landscape change. This involves an assessment of landscape and visual sensitivities, evaluation of design options, and the impacts of the design proposal that represents the best overall solution. Where visual sensitivity and local distinctiveness are important, taking account of local opinion will help inform the development of proposals and provide assurances about the nature, scale and rate of change.

4 Analyse the local distinctiveness and visual sensitivity of the landscape; consider visibility, how people view the area, the nature of the viewing experience and the importance of views.

5 Where local distinctiveness and visual sensitivity are important, communicate the predicted visual effects of proposals to interested parties and consider local opinions in developing the best overall solution.

6 Ensure established tools are used including landscape character appraisal and Landscape and Visual Impact Assessment (LVIA) to survey and analyse landscape and visual sensitivities and to ensure forests are appropriately integrated into the landscape.

Designed landscapes

Designed landscapes are an important part of the cultural heritage of the UK, and trees and forests are often their defining components. The more prominent examples of designed and historic landscapes are usually listed in the registers or inventories maintained by government agencies and local authorities, where special policies and restrictions (such as Conservation areas) may apply. However, these lists are not always complete and in many landscapes it may be possible to identify a fading design history for conservation and restoration. Further relevant information may be obtained from Historic Land-use assessments and the Gardens Trust.

7 Check if the landscape is listed in the relevant register or inventory of designed or historic landscapes; if so, seek specialist advice to inform the development of proposals.

8 If the landscape is not listed, but there is evidence that it is part of a park or designed layout, investigate the original design intentions and use these to inform design proposals.

Forest design principles

The assessment of landscape context will inform how forest design principles should be applied to ensure that forests make a positive environmental contribution. Many existing forests were planted with little attention to landscape, but felling and restocking (or regeneration) provides an opportunity to reassess their design and enhance the visual contribution they make. Common forest design terms are defined in Box 6.1.

Box 6.1 Definitions of forest design terms

Landscape

Connectivity A key characteristic in the landscape contributing to character, resilience and natural beauty/scenic quality.

Integrated design The comprehensive, holistic approach to forest design that brings together specialisms often considered separately. It applies to the UKFS elements of sustainable forest management and enables efficient working through the integrated, spatially defined design process considering landscape context and applying the design principles.

Landscape Takes account of the overall composition, spatial structure and aesthetic values of an area, including its spirit of place and identity that communities and individuals attach to their local environment.

Landscape character The distinct combination of natural components, human elements and experiences that creates a recognisable and consistent landscape pattern. The most persistent, dominant and influential are known as 'key characteristics'.

Landscape Character Assessment and Appraisal
The process of systematic description, classification and analysis of landscape in order to identify, describe and understand its character. The scale and detail of the assessment will depend on the scope, complexity and sensitivity of the proposals. Assessments at local authority and other scale may be available. They can be applied at any scale and can be used in the forest design process.

Landscape characteristics Repeated and consistent patterns of natural components and human elements that recur across a landscape. The most persistent, dominant and influential are key characteristics.

Landscape sensitivity The degree to which specific types of land-use changes or development affect the character and qualities of the landscape. Sensitivity depends upon the type, nature and magnitude of the proposed change and the characteristics of the host landscape.

Local distinctiveness The characteristics and qualities of a particular locality that give it a spirit of place and identity that makes it unique and special to people.

Spirit of place The intangible factor that gives a specific location special character and makes it unique to people. Often it is a combination of character, features, quality, space and associations that creates the sense of identity of a location.

Visual

Foreshortening The reduction of the amount of canopy that can be seen and therefore the visible extent of a forest with the lowering of a viewpoint.

Form Describes a three-dimensional shape, such as landform and forestry.

Perception How we experience landscape; seeing combined with the thought processes of recognition, expectation and experience.

Proportion The visual relationship of landscape elements, such as forestry, to open ground. As a guideline, the proportion of thirds (one-third to two-thirds) is promoted to avoid the repetition of similar proportioned elements in the landscape.

Scale The relative size of visual elements in a landscape as perceived by the observer. Scale varies with the position and distance of the observer from the landscape and visual elements being considered.

Spatial How elements fit together and their relationship to each other. In landscape, how hills relate to valleys; how forestry relates to open ground.

Texture The visual appearance of a surface due to the size, nature and density of surface elements, coarser textures having larger elements at wider spacing and finer textures having smaller elements at closer spacing. In forestry, different ages and species of tree appear as different textures in the landscape.

Visual diversity The number of different elements in the landscape and degree of visual complexity this generates. It is an observation, not a value like biodiversity.

Visual force analysis The analysis of the ridges and gullies in landform carried out as a tool in forest landscape design to create forests that fit more naturally into pronounced topography.

Shape

Shape is a powerful factor that has a major influence on how we perceive our surroundings. The perception of a particular shape is influenced by its overall proportions, how edges are defined and the viewer's position in the landscape. Compatible shapes achieve harmony in a composition, whereas shapes that are incongruous have a visually jarring effect. Landscapes contain many shapes but there is always an underlying influence that can be used to help integrate new forest shapes.

Studies of public preferences for forest landscapes have confirmed 'shape' as one of the most important visual factors. The distinction between naturalistic (usually meaning organic) and geometric (implying human-influenced) shapes is particularly significant and plays a major part in forest design. This applies to both the overall shape of forests in the landscape and to the patterns within them made by species compartments, felling coupes, access tracks and fence lines (Figure 6.3).

Shapes in a forest design that are influenced by the landscape appear better integrated with their surroundings. The dominant landscape influence differs according to whether the landscape is upland, lowland or flat:

- In the **uplands**, the landform is the dominant influence on shapes and on the patterns of vegetation and rocky areas; the hills and terrain may be rugged and angular, or smooth and rolling. The use of irregular shapes that reflect these landforms will help integrate the forest with its surroundings.

- In the **lowlands** or on undulating farmland, the field or enclosure pattern may be more dominant than the landform. In these landscapes, forest shapes can be based more on these influences.

- In **flat** landscapes, where there are no vantage points for people to see the overall shape of a forest, its edge and internal spaces (e.g. felling coupes) are the main influences and considerations in deciding shapes.

Figure 6.3
Example of how forest shape should be influenced by the key characteristic of a landscape. On the upper and mid slopes, the shape of the forest and internal structure are organic, reflecting the underlying landform. On the lower margin, the external shape reflects the geometry of the enclosure pattern, while internal shape reflects the organic pattern of the main body of the forest.
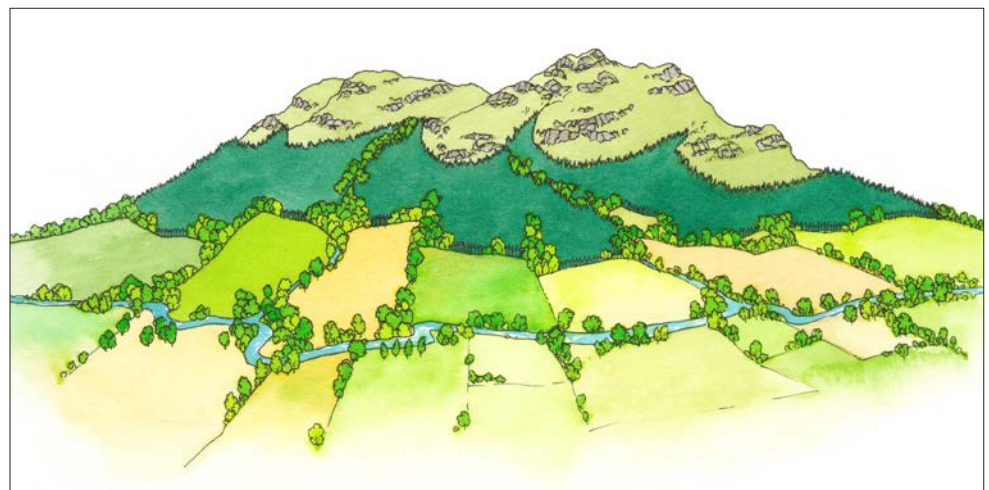
For woodland creation schemes, existing semi-natural vegetation patterns can help guide planting shapes and species choices (Figure 6.4). Vegetation responds to soil type, drainage, aspect and exposure, and these patterns are often related to the underlying landform. However, the existing vegetation may have been modified to a greater or lesser extent by enclosure and management such as fencing, re-seeding, fertilisation and drainage.

9 Analyse the main landscape influences and base forest shapes on either the landform or the enclosure pattern.

10 If the enclosure pattern is dominant, use the field pattern and links to existing hedges and woodlands to guide the design of forest shapes.

11 In landscapes where the landform dominates, design forest shapes that reflect the landform; try to avoid geometric shapes, symmetry and parallel lines.

12 On hillsides, where the landform predominates, use curving diagonals to run across slopes rather than straight, horizontal or vertical lines.

13 Use the natural or near-natural vegetation pattern to help guide new planting shapes and species patterns.

14 Consider how management practice will achieve the most appropriate forest shapes over time, including the effects of fences, felling coupes and access tracks.

Figure 6.4 Scale and forest and woodland design.

a. A landscape where the vegetation pattern is very well defined, related in part to the local landform. Vegetation often indicates soil condition.

b. Replacing the isolated woods with a single, larger area of woodland creates a better balance of scale.
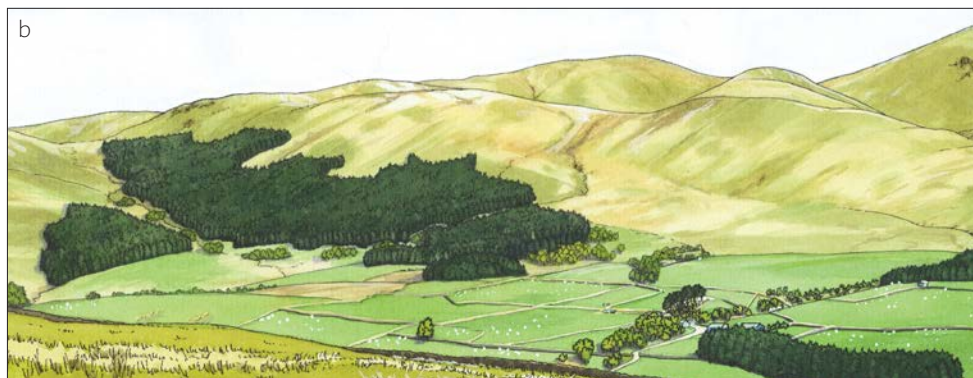
Landform

When viewing a landscape, the eye tends to look around a scene, for example, along a river or a winding road. This applies in particular where landform is the dominant landscape influence, and it has been widely recognised that there are directional forces that affect how a landform is observed. These directional forces 'flow' down the main spurs, ridges and convex landforms, and up into hollows, valleys and concave landforms. This perception of movement in landform holds true for all but the flattest landscapes where the eye is led across the horizon. Known as 'visual forces', these directions can be identified and analysed. The most prominent landform features have the strongest visual forces, and lesser forces relate to the more minor features. Identifying visual forces and using them to help shape a forest design ensures landscape coherence and a more natural looking forest (Figure 6.5).

Figure 6.5
An example to show how landform and an analysis of visual forces can be applied to the design of the forest.

a. The original landscape.

b. The visual force analysis of landform using red and green arrows to follow the ridges and hollows, respectively. The strongest arrows illustrate the largest and most pronounced forms, the smaller arrows the more subtle shapes.
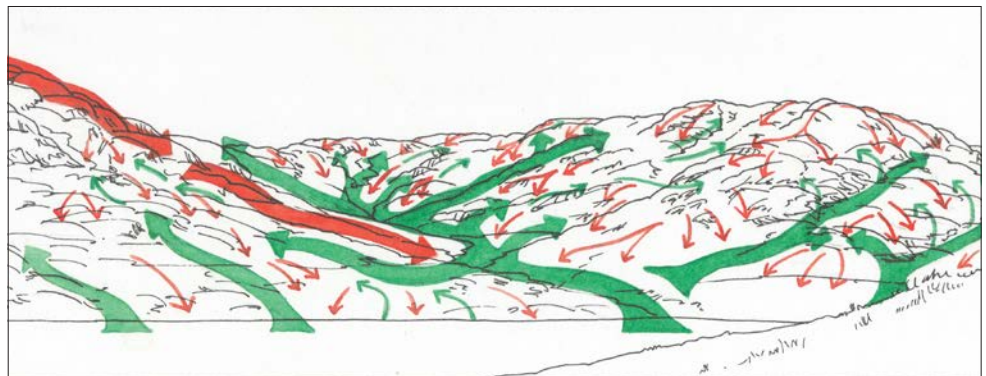
c. A woodland design based on this analysis, where the trees run up into the hollows and the open ground runs down the ridges.
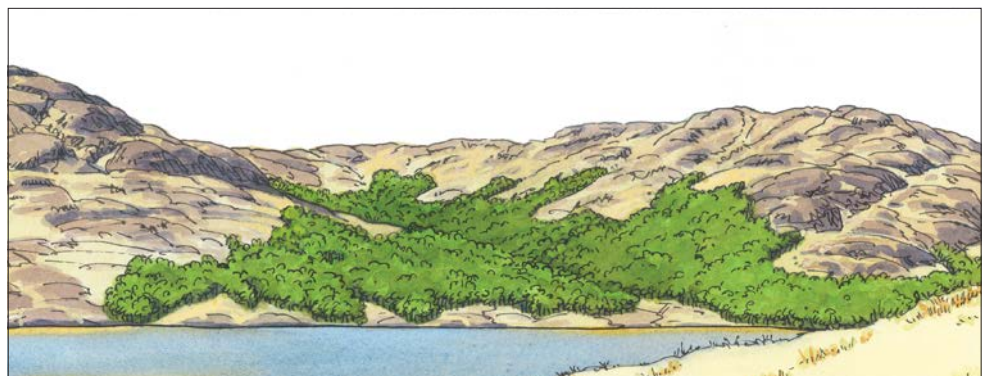
Natural forests and other vegetation patterns tend to reflect the underlying landform, with the upper tree line on exposed ridges tending to be lower and extending higher up the slope in sheltered valleys. Forests look less natural when their shape and edges cut across the flow of the landform pattern, and thereby fail to respond to visual forces. An example is where an upper forest margin follows a horizontal line (often a fence line or ownership boundary) rather than an irregular margin that natural vegetation would follow by rising up into sheltered valleys and falling back on exposed ridges.

15 Analyse the landform by identifying lines of visual force using a combination of contour maps, site observation, aerial and perspective photographs or a digital terrain model of the landscape.

16 Design the edges of forest shapes, such as planting areas or felling coupes, so that they respond to landform.

17 Vary the degree to which the shapes respond to the landform, with the main forest shapes reflecting the major landforms, and the more detailed design such as edges and internal features reflecting the minor landforms.

18 Avoid putting straight lines of forests across distinctive landforms or over skylines; where this is unavoidable, take forest margins across skylines at low points.

Pattern of enclosure

An enclosure pattern refers to the network of hedges, walls, ditches, fences and trees that define field boundaries in most of the lowlands and upland fringes of the UK. Enclosure has a historical and cultural value and is a cherished and distinctive visual feature of the countryside. Broadly, there are two main categories of enclosure (Figure 6.6):

• **Ancient countryside** enclosure can be traced back to prehistoric times and is characterised by irregular field boundary shapes, winding lanes, hedges of many species and patches of ancient woodland linked to the hedgerow pattern.

Figure 6.6 These diagrams illustrate the visual differences between 'ancient' and 'planned' countryside. (a) shows the irregular fields and winding roads while (b) shows straight field boundaries and roads.

a. Ancient countryside

b. Planned countryside
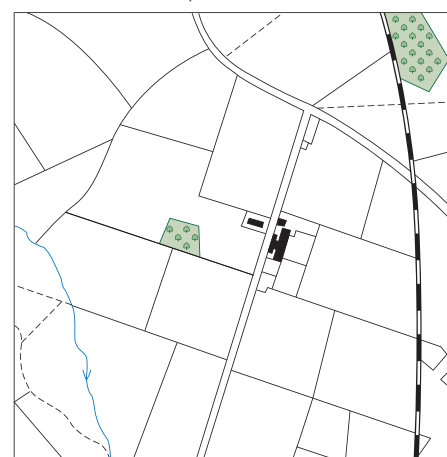
- **Planned countryside** enclosure dates from when open common fields and other land were enclosed by the Parliamentary Enclosure Acts of the 18th and 19th centuries. It is characterised by a more geometric and regular patchwork of fields, simple hedges and 'plantation' woodlands.

An important step in the forest design process is to assess whether the landform or the enclosure pattern is dominant, and which should be the main influence on the design. Where the enclosure pattern is dominant, woodland creation and forest management can help reinforce the pattern, especially where hedges have been removed and trees have been lost. The layout and proportion of forests can be designed to reflect and build on the established pattern (Figure 6.7). New forests or areas of short rotation coppice can be incorporated to reinforce and strengthen the existing pattern while conserving the key and dominant characteristic of field enclosures.

Figure 6.7 Designing woodland in landscapes with strong enclosure patterns.

a. A hillside where the enclosure pattern is strong and intact.

b. An illustration to show how extra woodland could be fitted in among the field pattern, enhancing it yet not creating a geometric woodland structure.
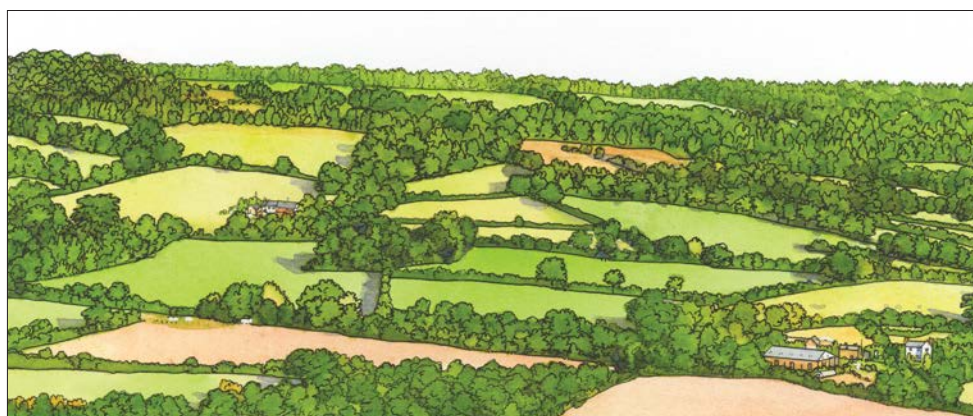
19 Survey and analyse the enclosure pattern in the landscape context and assess its contribution to landscape character; use this to guide forest design and planning.

20 Take account of the character and quality of the enclosure pattern in the forest design, positively integrating it within new woodland, conserving and enhancing local distinctiveness.

Scale

Scale has a major effect on perception. In landscape, it is defined as the relative size of one visual element to another, and the relative size of the whole landscape to the observer. The scale increases with the elevation of the observer and the expanse of the view.

Scale is an important visual factor in fitting forests into the landscape. This applies both to the forest overall and to its constituent elements, such as felling coupes, species compartments or open space. In assessing scale, the position of the viewpoint is all-important. In general, this results in small elements being appropriate in valley bottoms, on lower slopes and along lower forest edges, whereas much larger elements fit in at higher elevations and on hilltops where the scale is greater (Figure 6.8).

Problems of scale in forest design may be seen as a consequence of:

- a single felling coupe that is too extensive or a number of coupes that are perceived as a single element because previous restocking (or regeneration) of felled adjacent coupes has not yet established;

Figure 6.8 Examples of different scale landscapes.

a. A large-scale landscape. The size of the cottages at the foot of the mountain gives a measure of the scale.

b. A medium–scale landscape. The size of the trees becomes quite important relative to the size of the hills.

c. A small-scale, intimate and enclosed landscape.

- large-scale swathes of uniform forest in intimate landscapes;
- small-scale unrelated elements at higher elevation;
- thin strips of forest on skylines.

It is important to assess the scale of the landscape and to ensure that, as far as possible and within limits imposed by ownership boundaries and site fertility, the proposed forest relates to landscape scale (Figure 6.9).

Figure 6.9 Scale and forest and woodland design.

a. A large-scale landscape. The small patches of woodland seem to float and are too small for the scale.

b. Replacing the isolated woods with a single, larger area of woodland creates a better balance of scale.
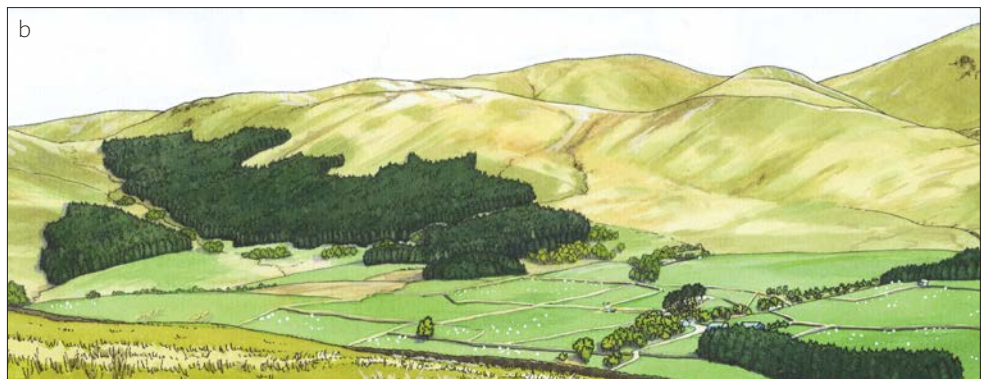
There are four aspects to scale that can help with issues of visual design:

1. The rule of thirds – a one-third to two-thirds proportion between elements can help to resolve the visual balance between elements such as forest and open ground. When a landscape, or part of it, is seen as divided into two major elements, a ratio between them of around one-third to two-thirds is usually the most satisfying visual proportion (Figure 6.10). This ratio also applies to proportions of visual elements within a forest, or the size of felling coupes – providing the resultant scale is commensurate with the landscape. The visual balance will change with the viewpoint – when applying the rule of thirds, priority should be given to the most important views.

2. Enclosure can be used to define space and break down the scale of the landscape. This applies in flatter areas where the height of trees confines the view and creates a visual separation.

**Figure 6.10** The rule of thirds.

a. The forest occupies more than two-thirds of the scene and leaves a small, poorly scaled open area at the top of the hill.
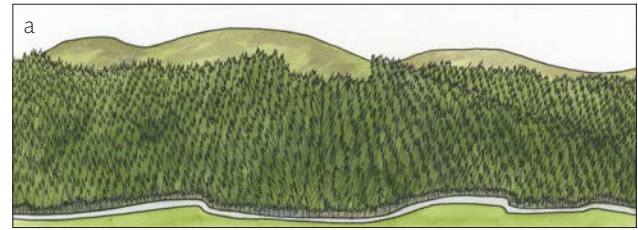
b. The forest and open ground are split 50:50 so that neither is dominant and a horizontal split occurs, despite the shape of the margin.
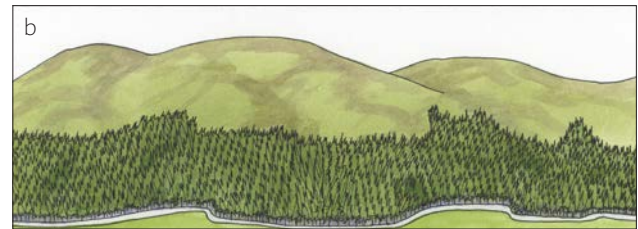
c. The forest occupies two-thirds of the visible area and the open ground one-third, which is more visually pleasing.
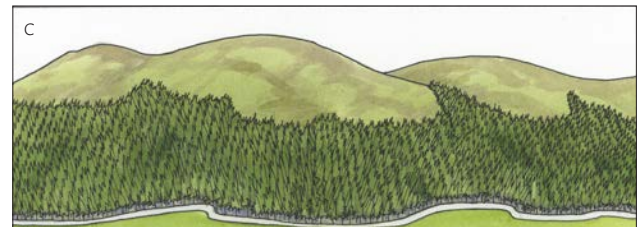
3. Nearness is a way to increase the apparent scale of small woods or clumps of trees and ensure they do not appear isolated and incongruous in a large-scale landscape. When woodland elements are positioned far apart they appear completely separate, but when relatively close together they tend to be seen as a group and the apparent scale is increased.

4. Coalescence can also be used to give the appearance of a more heavily wooded landscape than is actually the case. Small woods and trees can be positioned so that they overlap each other when seen from important viewpoints.

21 Consider the relative size of woodland elements and aim to fit with the scale of the landscape.

22 Use smaller-scale woodland elements in valleys and progressively larger elements at higher elevation.

23 On hilltops and ridges, avoid narrow slivers or patches of both trees and open ground.

24 Consider a visual proportion of one-third to two-thirds where there are two main visual elements in important forest views.

25 Make use of enclosure, nearness and coalescence to increase apparent scale and resolve design issues.

Diversity

Visual diversity refers to the number of different elements in a landscape or design. Landscapes in the UK have a high degree of diversity, which is described and classified in an LCA.

Diversity is a complex factor; it applies both to the wider landscape and to the constituent elements such as a forest. Diversity has many benefits for forest habitats and provides resilience in the face of climate change. In general, diversity creates visual interest and is welcomed, whereas a lack of diversity can result in visual monotony. However, it is not always the case that more diversity equates to a higher quality landscape; too much diversity can be visually confusing and appear cluttered, chaotic and incoherent – for example, a very diverse mixture of tree species in a uniform arable landscape would stand out rather than blend in like a natural forest. It should also be appreciated that some landscapes have an intrinsic quality based on their very simplicity.

In the wider landscape, forests introduce diversity into treeless scenery, but extensive uniform forests can hide landscape features and reduce visual diversity and habitat diversity. An assessment of landscape character will help identify the degree of diversity and the key characteristics within a given landscape type.

Within forests, public preference research shows a strong affinity for diversity. Internal diversity can be achieved by using a range of silvicultural approaches to cultivate different ages, densities and species of trees – providing these are suited to site conditions. From a distance these will appear as a visual composition of contrasting textures and colours, with subtle changes marking the passage of the seasons. Diverse and graded forest edges, together with species mixtures, can help in creating visual diversity. Other landscape elements, such as water, wetland, rocky outcrops and open spaces, also contribute to forest diversity and should be revealed and emphasised rather than hidden within the trees.

26 Consider the appropriate level of visual diversity in relation to the context, location, scale and character of the landscape.

27 Match elements of diversity to the scale of the landscape; use a greater number of small elements where the landscape is contained, such as in valleys, and progressively fewer and larger elements within simpler landscapes at higher elevations.

28 Emphasise natural features and non-woodland elements as part of the visual diversity of a forest.

29 Pay particular attention to the diversity of external and internal forest edges; vary the tree density and consider adding additional tree and shrub species.

Unity

Unity is achieved when the component parts of a design contribute harmoniously to the whole and all the visual design factors work well together. In landscape, this is achieved when the elements fit together well and relate to the site context and landscape characteristics, and nothing looks out of place or unbalanced (Figure 6.11).

Figure 6.11 These sketches illustrate the concept of unity. The various elements in **(a)** are not compatible with the landscape or each other in shape, scale, colour and position. **(b)** shows how the woodland and the building could be better unified within the landscape.
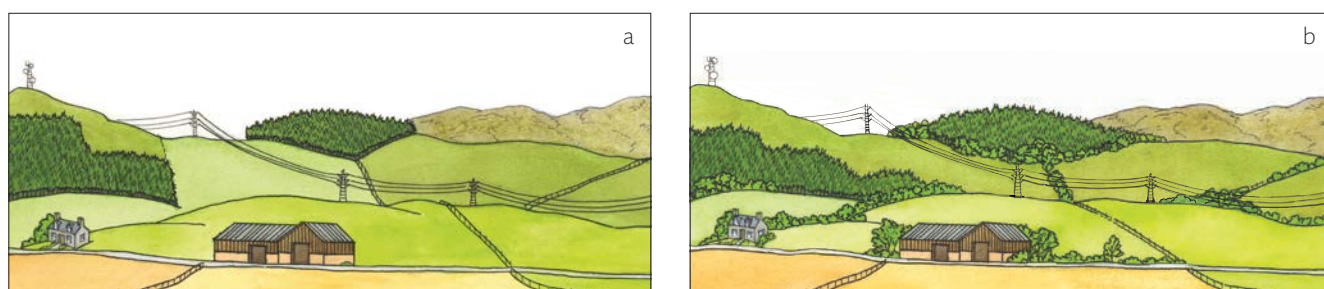

In forest design, unity means that the wooded elements should appear to be an integral part of the landscape, fitting in with or defining local character, and not standing out from it. Similarly, within a forest, the various component parts should appear to fit together.

The interlock of shapes in the landscape provides coherence to various patterns by giving them a stronger visual connection to one another (Figure 6.12).

Figure 6.12
The shapes on the left abut one another and do not interlock. The two shapes on the right interlock and appear as a single unit.
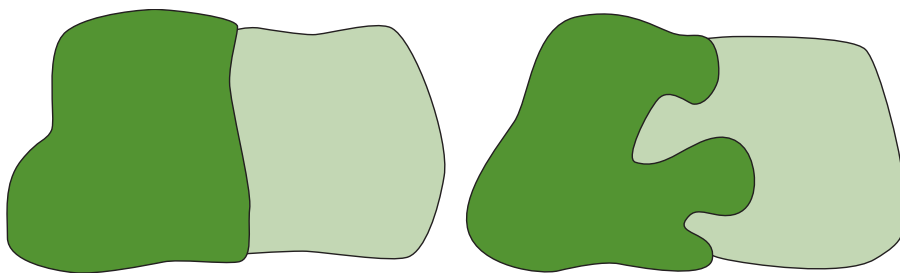
Interlock can be at a large scale, as in the broad pattern of open space and forest, or at a very small scale, for example, between two tree species. A high degree of interlock gives more unity to a design (Figure 6.13).

30 Apply the forest design principles, particularly shape, scale and diversity, to achieve unity in design proposals.

31 Design interlocking shapes with forest margins and edges to make the internal forest elements fit together and to tie the forest into the wider landscape.

Figure 6.13 **a.** The forest on this hillside has an organic shape to its upper edge which interlocks quite strongly with the open hill above.
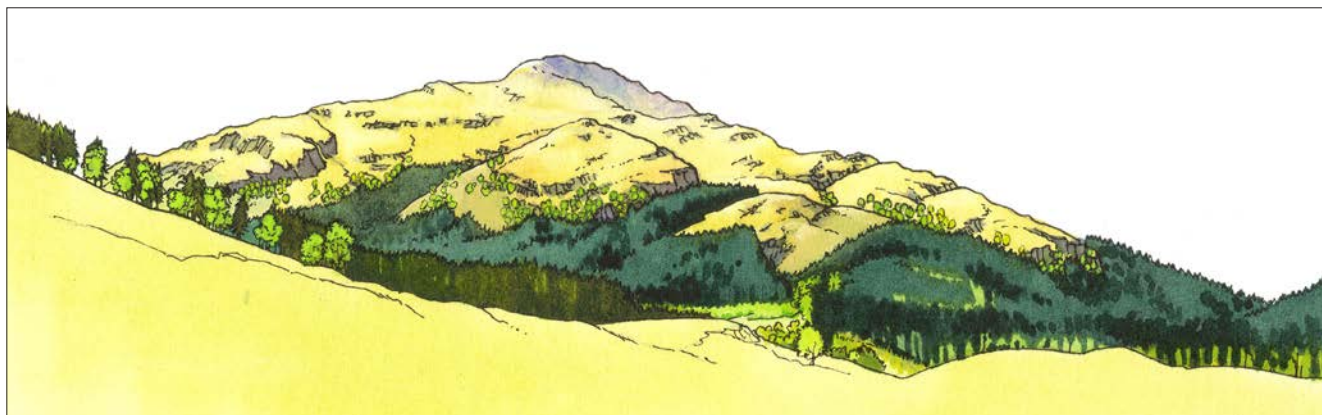
b. The patterns of different tree species in this view are organic in shape and strongly interlock with one another.

Spirit of place

Spirit of place is linked with the factors affecting landscape context but is included here as one of the well-established principles of forest design. It is a term for the intangible factor that gives a specific location special character and makes it unique to people. Often it is a combination of things, and it is important to identify what makes a place special so that this quality is not lost or damaged when changes occur. Dramatic landform or rocks, the presence of water or ancient trees, striking views, or a sense of wildness and tranquility, may all define a 'spirit of place' (Figure 6.14). Human elements, such as historical or artistic associations and archaeological elements, are also likely to contribute.

Trees can be fundamental to the spirit of place, or the forest environment may enhance the setting of other features, or the access to them. Forest design and management needs to be undertaken with sensitivity to ensure that changes enhance the special quality of a place rather than detract from it.

32 Identify what makes a place special or unique and consider how forest design can conserve and emphasise these qualities rather than detract from them.

Figure 6.14
a. Waterfalls like this frequently have a strong spirit of place.

b. These 'Ancient and Ornamental Woods' have a strong spirit of place.