

Using Local Timber - Contributing to Sustainable Construction

Guidance for North Scotland



This guidance has been produced by Susan Dean, Planning and Sustainable Development Consultant (contact: littlecourthill@btinternet.com) on behalf of a North Scotland Partnership comprising the Forestry Commission Scotland (Grampian and Highland and Islands Conservancies), Aberdeenshire Council, Aberdeen City Council, the Cairngorms National Park Authority, The Highland Council, and The Moray Council.

Date: October 2010

Executive Summary

(i) Status of this guidance

This guidance has been prepared as the basis for planning advice on the use of local timber in sustainable construction in North Scotland. It has been produced on behalf of a North Scotland Partnership comprising the Forestry Commission Scotland (Grampian and Highland and Islands Conservancies), Aberdeenshire Council, Aberdeen City Council, the Cairngorms National Park Authority, The Highland Council, and The Moray Council.

- Partners may choose to formally adopt the guidance as Supplementary Guidance under the relevant Development Plan and as such it will become a material consideration in the assessment of future planning applications under that development plan.
- As it stands the guidance should be regarded as a promotional advice note to encourage the use of more sustainable and locally sourced timber as a construction material. As such it forms an important part of the suite of sustainability policy and guidance to which all partners subscribe.

(ii) Purpose of this guidance

The purpose of this guidance is to help promote the use of local timber in order to deliver more sustainable future development projects.

(iii) Who is this guidance for?

This guidance document is for all those with an interest in the development industry including: architects and agents, developers, builders, planning and building standards officers, members of planning committees, and the general public who may be considering building or extending a home, an office or workspace.

All those involved in development processes, whatever the scale, have choices to make in terms of design and materials. Increasingly clients, designers and architects are looking to make more sustainable choices. This is supported by current Building Regulations which also help to point development professionals in a more sustainable direction.

Sourcing construction materials in most instances is left to the builder. Unless the use of local timber has been specified before the point of sourcing materials it is practically impossible to insist upon local materials from this stage onwards, especially if the development is to proceed in a timely and cost-efficient manner.

The client therefore has a key role to play in highlighting the desire to use local timber in the development – this applies to all scales from a small scale extension to an existing home to

major commercial or domestic developments. This guidance should help those specifying and sourcing construction materials to make more informed and sustainable choices.

This guidance identifies some of the key sources of local timber and the uses to which they can be put, demonstrating that it is possible to specify local timber for development projects and achieve a good quality, sustainable building.

(iv) What does this guidance cover?

The guidance addresses the following issues:

- The local timber resource;
- Designing with local timber;
- Procuring local timber and timber certification;
- Benefits of using timber;
- Building Regulations for using timber; and
- Sources of further information and advice.

(v) A North Scotland partnership approach

Government policy at a national level supports, and in turn is supported by, the use of local timber as a sustainable construction material. The local timber resource plays a vital role in delivery of the Government's twin aims of a sustainable economy and a low carbon future.

All partners to this guidance have made commitments to address the overarching issues of climate change and sustainable development. This guidance aims to support partners in their endeavours in this respect, and to provide practical advice to those involved in the construction industry and the built environment to deliver more sustainable buildings in the local area.

EXECUTIVE SUMMARY

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1. Introduction

1.1 Purpose of this guidance

The role of this guidance is to help promote the use of local timber in future development proposals. The guidance addresses the following issues:

- The local timber resource;
- Designing with local timber;
- Procuring local timber and timber certification;
- Benefits of using timber;
- Building Regulations for using timber; and
- Sources of further information and advice.

1.2 Overview of the use of timber in construction

Timber is a primary construction material, and in terms of sustainability it is one of the best. It is renewable, it requires little in the way of energy to make the transformation from living tree to usable timber, and in North Scotland it is grown and processed locally. The timber industry has always been a key part of the economy of northern Scotland. This is reflected in construction techniques dating back centuries. Timber is now being used in contemporary situations and a number of local companies involved in construction are already familiar with the benefits of using timber, and possess the skills needed to make best use of timber as a construction material.



Lauder College, Dunfermline

As more consideration is given to environmental concerns, especially associated with climate change, interest in the use of timber as a construction material is experiencing a renaissance. Already 75% of all new homes in Scotland are timber-framed. If more of this timber was sourced from local forests and processed by local sawmills the consequent benefits would be economic, social and environmental. The growing interest in timber as a construction material is an opportunity to continue to support local jobs and skills in peripheral areas, as well as provide a high quality and sustainable range of construction materials.

Frequently the use of timber in construction goes unnoticed, for example in the hidden structural elements of a timber-framed building. Timber cladding is a more obvious and visible use, as are window and door frames. The internal timber in construction is a valuable way of reducing

reliance on other construction materials such as steel and concrete which require a lot of energy to transform into usable construction materials. Further energy is required to transport these materials from the site of extraction, to manufacture and on to the construction site. All these activities contribute to greenhouse gas emissions and climate change.

Timber is a local resource. As the cost of transportation fluctuates with the price of oil, so the value of self-sufficiency becomes apparent. The availability of local construction materials will facilitate affordable and sustainable development and generate knock-on effects for the local economy and its ability to support a diverse and viable community.

1.3 National policy and context

The Government's current twin focus on a sustainable economy and a low carbon future to combat climate change is neatly encompassed by the use of local timber as a sustainable construction material. The role of forests in sequestering carbon to mitigate the causes of climate change is now considered an important part of a sustainable national economy. The potential impacts at the local level are also significant.

Specific targets for the forestry industry have been set by Government in order to address climate change. Further information is available from the following sources:

Scottish Climate Change Delivery Plan

www.scotland.gov.uk/Publications/2009/06/18103720/0

Climate Change (Scotland) Act 2009

www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact

The role of the timber industry is also recognised as a key driver (especially in rural areas) for the Government's other key priority – a sustainable economy. The ability to add value to the raw timber through processing and manufacturing of composite materials, kits and structures, through to design, build and maintenance, requires a diverse set of skills and helps to sustain local jobs, and create training opportunities.

The key aspects of national policy which support, and in turn are supported by, the use of local timber as a sustainable construction material are:

- A low carbon building standards strategy for Scotland
- Scottish Forestry Strategy
- UK shared framework for sustainable development
- Scottish Planning Policy and Guidance
- Climate Change (Scotland) Act 2009

Further details on these aspects of national policy can be found in Section 4.

1.4 Local policy and context

The partners involved in the production of this guidance support the use of sustainable timber resources for future development projects in the area.

This guidance supports existing local policies and through it the partners aim to encourage the use of locally sourced timber as a means to achieve a number of sustainable development goals including those related to planning, climate change, a sustainable economy, and forestry.

All partners Development Plans contain policies aimed at a more sustainable approach to the built environment. This guidance is one of a suite of complementary and mutually reinforcing documents setting out policy, technical advice and general guidance on the wide range of issues associated with sustainable development.

North Scotland is likely to continue to experience considerable development activity in the coming years. This is reflected in the partner's individual development plans in response to the need for more housing and also commercial and industrial development.

Further details can be found in Section 5.

2. The timber resource

2.1 The timber resource

In 2008 5.9Mm³ (million cubic metres) of sawnwood was imported into the UK whilst UK production of sawnwood was 2.8Mm³. During this period the UK also produced 2.6Mm³ of wood based panels and imported 3.4Mm³ of wood based panels (source: UK Wood Production and Trade (provisional figures) FC May 2009). The majority of UK home grown timber is produced in Scotland, but sold to the English markets. Timber production is limited by the amount of forest cover that we have, so we are unable to meet this total demand domestically.

Scotland's wooded area is 1,342,000 hectares (ha). Private ownership accounts for 66% of this woodland, the remainder is under public ownership through the National Forest Estate (NFE). Conifers (softwood) account for 68% of this (916,000ha); Scots Pine makes up 15% of the conifer area.

(a) What is the local timber resource?

The timber resource in Scotland is substantial; about 7.1Mm³ of softwood timber is produced annually from the National Forest Estate and private woodland combined. Hardwood production is 38,000m³. The production estimate for North Scotland (the areas covered by the Grampian and Highland and Islands Conservancies) for 2007/08 is 2.4Mm³.

The distribution of the Scottish forestry resource has been mapped by the Forestry Commission and is shown in the *Scottish Forestry Strategy* (2006):
[www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/\\$FILE/SFS2006fcfc101.pdf](http://www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/$FILE/SFS2006fcfc101.pdf)

For this timber resource to be sustainable a programme of replanting and planting of new woodlands must be maintained. Most felling in Scotland requires a licence from the Forestry Commission. A condition of a felling licence is the requirement to replant, thereby helping to maintain the country's timber production levels.

Sawn timber production from Scotland's mills will increase further in line with the increasing output of timber from Scotland's forests. Achievement of the Scottish Forestry Strategy and Climate Change Delivery Plan aspirations will require new woodland creation at 10,000 to 15,000ha

per year. It is envisaged that 60% of this would be softwood production forests.



Seafield Estate, Cullen

Sitka Spruce, Scots Pine and Larch are the dominant species grown for timber in North Scotland. Norway Spruce and Douglas Fir can also make an important contribution to construction.

Fitness for purpose is a fundamental requirement for construction-grade timber, irrespective of its country of origin. Continuity of supply and confidence in the supply chain are also key

concerns. Forestry Commission Scotland's inventory forecast for 2011 includes for the first time predictions of future timber quality. This will help to build confidence in the local timber market by addressing issues of long-term access to suitable quality timber.

The timber output of North Scotland is substantial. The forest production is split almost equally between that of the National Forest Estate (NFE) and privately owned and managed woodlands. Timber production is set to rise in North Scotland over the next ten years.

The NFE production in Grampian will increase to within 400,000m³ to 425,000m³. There is also set to be an increase in timber output from private woodlands, rising to 719,000m³ in ten years time.

Forestry production is also set to rise in the Highland and Islands Conservancy area in the next ten years to an annual production of 1.72Mm³.

There is quite literally a growing timber resource in the local area, but it is important to remember that whilst timber may be processed locally, it may not be used locally for a variety of reasons. Specifying local timber at the design stage will help to stimulate the local market.

Timber Output 2007/08

| | |
|--|---------------------|
| Highland & Islands Conservancy (forecast figures) | 1.18Mm ³ |
| Grampian Conservancy* | 0.9Mm ³ |

*Moray: 298,780m³, Aberdeenshire/City 585,365m³

Timber Production Forecast 2017

| | |
|----------------------------------|---------------------|
| Highland and Islands Conservancy | 1.72Mm ³ |
| Grampian Conservancy | 1.1Mm ³ |

Source: Forestry Commission Scotland

Recent research into the Scots Pine timber resource in North Scotland has been undertaken in partnership by Forest Research, Forestry Commission Scotland, Scottish Enterprise and Highlands and Islands Enterprise.

The purpose of this project is to increase the value to the rural economy of the Scots Pine resource. Almost 80% of the total area of Scots Pine high forest is within the Highland and Islands and Grampian conservancy areas. Scots Pine timber production provides important economic benefits to the area.

The quality of Scots Pine timber has been assessed in the forest and much has been found to be able to meet the requirements for construction grade timber.

(b) What can local timber be used for?

The main uses of UK timber are explored in detail in the publication *Sustainable Construction Timber: sourcing and specifying local timber* by Ivor Davies (Centre for Timber Engineering 2009). For ease of reference this information is reproduced below.

| Trade name / common name | | Machine graded timber | Visually graded timber | Panel products | External cladding | Decking | Fencing & landscaping | Windows | Internal flooring | Other internal joinery |
|--------------------------|---|-----------------------|------------------------|----------------|-------------------|---------|-----------------------|---------|-------------------|------------------------|
| Softwood | Corsican Pine | | | O | | | O | | | |
| | Lodgepole Pine | | | O | | | | | | |
| | Scots Pine | O | O | M | | M* | O* | | O | |
| | Douglas Fir | O | M | | O* | O* | O* | | O | |
| | Larch (European, Japanese, & Hybrid) | O | O | | M | O | O | | O | |
| | Whitewood (Sitka & Norway Spruce) | M | | M | O* | | O* | | | |
| Hardwood | European oak (Sessile & Pendunculate oak) | | M | | M | | O | O | O | O |
| | Sweet chestnut | | O | | O | | O | O | O | O |
| | European ash | | | | | | | | O | O |
| | European beech | | | | | | | | O | O |
| | Sycamore | | | | | | | | O | O |

M - Major / regular use O - Occasional / minor use

* normally requires preservative for use in this application

Larger and better quality logs are used for sawnwood; small diameter and poorer quality logs are put to other uses. Four main groups of UK processed timber which are used in construction are identified in the publication *Sustainable Construction Timber* as:

- **Sawnwood** – softwood is used for structural applications, pallets, fencing and decking; hardwood for post and beam structures, furniture and flooring;
- **Wood-based panels** – small logs and recycled timber are reduced to woodchip or sawdust then glued together to form large sheets. Three types are made in the UK: particle board, medium density fibre board (MDF) and oriented strand board (OSB);
- **Engineered wood products (EWP)** – sawn timber and wood-based panels are combined in the manufacture of large structural elements such as; glue laminated timber beams (glulam); cross laminated timber panels (massive timber and brettstapel construction); and structurally insulated panels (SIPs);
- **Other wood products** – telegraph poles, log buildings and insulation products such as cellulose fibre and soft-board insulation.

UK timber is also used for paper and cardboard. Wood for fuel, in the form of logs, chips and pellets, is becoming an increasingly important market for UK timber.

Locally, small round wood for use in wood-based panels, particularly OSB, is an important product. OSB is used in the majority of construction projects.

(c) What is the local processing resource?

The major timber processing sites in Scotland have been mapped by the FCS. This is available at: [www.forestry.gov.uk/pdf/processingsites.pdf/\\$FILE/processingsites.pdf](http://www.forestry.gov.uk/pdf/processingsites.pdf/$FILE/processingsites.pdf).

In 2008 there were 21 active sawmills in North Scotland:

- Around 449,000m³ of sawn softwood was produced by these mills in 2008. 46% of this is used in construction. The rest is used for fencing, packaging and pallets.
- A dozen of these mills account for practically all the softwood (coniferous timber) consumed in the area. All softwood consumed by these mills originates from Scotland.
- The intake of green timber by the mills in the area is currently around 70% Sitka Spruce, 15% Scots Pine and some Larch.
- Very little hardwood is consumed by these mills – less than 1,100m³ green hardwood timber, compared to the 1,015,000m³ green round softwood which was consumed in 2008.
- The smaller-scale operators, for example the hardwood sawmills, tend to specialise in niche products.

A list of processors and stockists and their contact details is provided in Section 7. Those listed stock home grown timber. Some timber kit manufacturers use home-grown rather than imported timber. In many instances timber kits will contain elements of home-grown timber as a matter of course, but usually there is no distinction made between home-grown and imported timber in such kits. Indeed much timber from North Scotland ends up in timber frame kits used for housing south of the border, while a large proportion of the timber used for timber frame homes in Scotland is imported.



James Jones Sawmill, Aboyne

The development plans for North Scotland identify the need for further homes, commercial and industrial buildings to support a viable and diverse community. This need for development presents a very large potential market for local timber.

However, if home-grown timber is preferred it will need to be specified and the building designed accordingly. This will mean working closely with the architect, designer, and specifier and the sawmill or timber supplier to identify suitable products.

(d) What products are available?

The use to which timber can be put in modern buildings is extensive. An idea of some of the main products that are available from local timber is given below. A supplier should be able to indicate whether these products are derived from local timber, or the proportion of local timber used in production.

- Interior joinery - skirtings, architrave, stairs.
- Interior lining - solid timber profiles, boards and panels.
- Furniture and fittings - kitchens, shelves, cupboards, furniture.
- Exterior cladding - walls, roofs and sarking.
- Sheathing - Oriented Strand Board (OSB), Medium Density Fibreboard (MDF)
- Flooring
- Outbuildings, fences, gates, decking.
- Whole and machined logs, post and beam construction.

Case Study – Albyn Housing Society, Glenmore, Aviemore

These two timber houses, designed by John Gilbert Architects for Albyn Housing Society Ltd, have been built as a pilot scheme in line with the approach outlined in the publication *Designing housing with Scottish timber* (2009), a research project undertaken by John Gilbert Architects for the Forestry Commission into using local timber. The brief stated that the aim of the project was to build functional and robust social housing, with maximum use of Scottish timber and which minimised the amount of energy and carbon emissions throughout construction and occupation.

All the structural, framing and cladding timbers are from homegrown forests. The house design incorporates ecological features such as high-level insulation, multi-fuel stove heating for main rooms and rainwater harvesting. In addition, the windows are positioned to make the best use of natural sunlight and the view of surrounding woodland area. New, native trees are mixed with the existing mature trees to create a cohesive canopy around the clearing, thus maintaining the forest setting.

The houses have been built in keeping with the architecture of the Glenmore area and are specifically designed in the context of the location. There are high aspirations for them to become a benchmark for design and sustainability in the Cairngorms National Park.

The development won Sustainable Smaller Social Housing Project of the Year at Inside Housing's Sustainable Housing Awards 2009, and a bronze award for sustainable design at the Roses Design Awards.



Not all of these products will be immediately available from locally-grown and processed timber. However, the vast majority will be available from home-grown timber (ie: Scottish or UK) which local suppliers should be able to access, provided that the preference for home-grown timber is specified. This may take additional time to secure – bear this in mind for build-times. Also remember that timber is processed into standard sizes. Timber of non-standard size, either in length or section can also be difficult to source and may take considerable time to track down.

Unless the preference for local timber is clearly specified, it is likely that the products supplied will be derived from a combination of local, UK and imported timber.

(e) Is local timber fit for purpose?

Local perceptions of the local timber resource have in the past perhaps been somewhat negative with concerns raised over both availability and quality of the timber. However, processors in the local area have been manufacturing good quality construction products from local timber for years. In timber-framed construction there is usually no distinction made between the use of local and imported timber in construction products. Timber from North Scotland is routinely used in construction products, but this is not usually obvious to the purchaser.

What makes timber fit for purpose is a combination of two or more of the following:

- dimensional stability;
- adequate strength or stiffness;
- resistance to wood-destroying organisms;
- acceptable fire performance.

The properties of normal softwood construction timber are usually measured by a process known as ‘machine grading’. Timber is graded according to its strength class. Any timber meeting the required value can be used within a strength class. Different strength classes are required for different uses. Structural timber must carry evidence of its strength class, usually a stamp on the timber itself.

Due to the fact that the majority of timber frame kits are constructed using imported timber C24 is the strength grade that is most widely used. Very little Scottish timber is graded to C24; hence most timber frame kits use entirely imported timber.

C16 is a lower strength grade, but it is still fit for purpose in most aspects of timber-framed construction, but not always for roof trusses.

Use of home-grown timber needs to be incorporated into the design and specification at the outset. Several kit manufacturers choose to use imported C24 timbers due to supply chain and manufacturing considerations. If local timber is preferred then it is essential to select a kit manufacturer who sources timber from home-grown forests and who can incorporate C16 grade timber into the design.

The majority of structural quality Scottish timber achieves C16; hence it is entirely possible to construct a timber- framed kit using Scottish, or indeed local timber.

I-Joists are becoming more commonplace in floor and roof construction as they provide a light but strong product which makes the assembly process more straightforward. When used in wall construction they also provide for very high insulation standards due to the depth of wall sections. I-Joists are manufactured in North Scotland using local timber for the web and imported timber for the flanges.

2.2 Design

(a) A resource-based approach to design

Historically buildings were constructed using local materials worked by local craftsmen who understood the potential uses of the materials and were able to apply their knowledge and skills to construct buildings which as a result were fit for purpose, and reflected a particular local style. With advances in transport and communications technology it is now possible to specify and construct buildings entirely lacking in local materials or the local vernacular. Utilising a standard house design means that opportunities to use local materials may be lost at the design stage.

Rather than designing to the standard of ubiquitous materials, a step back is required to put the specification of materials into the heart of the design process. This means understanding the local timber resource and designing for its use, rather than adopting standard building designs which may require materials to be sourced from further afield. As well as supporting the local timber market this resource-based approach will help to bring back some of the vernacular to the built environment.

Modern methods of construction mean that local materials can be used in new ways, for example the construction of I-Joists. This means that using local timber does not have to be restricted to traditional building designs, but rather it should enable modern buildings to reflect the best in terms of local materials and advances in design and construction. The availability of different timber species and wood processing facilities around the country can have a profound effect on vernacular architecture.

Promotion of increased use of timber is equally applicable to the construction of high-volume mainstream housing developments, for affordable and social housing, and for high-end individual architect-designed homes.

(b) Considerations for use of local timber

- **Design:** If local timber is preferred, it is essential to ensure that its use is designed-in from the beginning of the project. Designers need to ensure that the building uses timber components that can be sourced locally. Bear in mind that the local area can only supply some products, species and grades. For other products use the Timber Sourcing Hierarchy (see Section 2.3 below) to achieve a more sustainable approach to timber sourcing and to ensure low embodied energy of timber construction products.
- **Structural components:** Where machine graded timber is required specifying grades higher than C16 excludes not only most local products but also most UK products. More specialist structural products, such as visually graded large section Douglas Fir, is available from local timber, although perhaps not in large quantities. For post and beam construction large sections tend to be visually graded to C24 as a matter of course. Species commonly used are Douglas Fir and Larch, but Scots Pine and Spruce are also potentially useful in this type of construction.

- **Timescale:** Sourcing of local materials and products may take longer, so consideration of availability and lead-in times must be part of the early stages of the project. Contact the UK and regional trade bodies to identify a manufacturer of the product you require (see Section 7 for contact details). The manufacturer will then be able to advise on appropriate distributors.
- **Timber failure:** Failure is mostly caused by moisture issues. If for example timber is being installed at the wrong moisture content for its end use or it becomes wet after installation due to poor detailing or maintenance, problems can arise. Moisture content of timber affects its mechanical properties, resulting in shrinkage, swelling and/or a risk of decay. Movement characteristics (shrinkage from drying, or movement from wetting) vary between species. Resistance to wood destroying organisms is also related to moisture content and temperature. Timber should therefore be “detailed for durability” - it can be either treated with preservative or a wood modification process such as heat treatment, or a more durable species can be used.

Case Study – Deeside Timberframe Company Ltd, Stonehaven

Deeside Timberframe Ltd was established in 1985. It operates from its complex in Stonehaven, Aberdeenshire, with secondary production facilities in Stirling. The company uses sophisticated, computer-aided-design software to ensure a high quality, precision-engineered, timber frame product.

Deeside Timberframe Ltd has bulk procurement partnering-type agreements with Cala Homes and Bancon Homes and regularly manufactures timberframes for leading volume house builders and construction companies.

The company manufactures between 850 and 900 kits per year. Kits are supplied throughout the UK from Southampton to the Scottish Islands. A number of single site houses have also been supplied to the Shetlands and Lewis.

In the region of 20 cubic metres of timber is used per week; between 10 and 15% of this is normally home grown timber. Home grown timber is used mainly for sarking, tile and counter battens and truss bracing material. This consists primarily of treated softwood, mainly Sitka Spruce.

The company is interested in the use of homegrown timber in the interests of sustainability. They are now able to choose to use home grown timber for a number of reasons including the more regular sizes available and the moisture content which compares favourably with, or is better than, European timber levels. Ultimately however, the quality of the homegrown product now available and the volume in which it is available enables more projects to be undertaken.

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2.3 A timber sourcing hierarchy

If the preferred products made from local timber are not available there is a hierarchy of sourcing which can be followed to ensure the embodied energy of the timber remains low to reduce its carbon footprint.

A timber sourcing hierarchy

To keep embodied energy and transport emissions low the following timber sourcing hierarchy generally applies:

1. Timber grown and processed in North Scotland.
2. Scottish grown and processed timber.
3. UK grown and processed timber.
4. European timber - preferably shipped to a Scottish port.
5. Timber from the rest of the world.

(With 1 having the lowest embodied energy)

This hierarchy is based on work undertaken by the Edinburgh Centre for Carbon Management (ECCM) in 2006 which investigated the carbon dioxide emissions associated with timber transport.

Some of the major suppliers of local timber in the area are listed in Section 7. Others can be found by contacting one of the trade associations.

Further information on suppliers of Scottish timber is available from:

- Scottish Timber Trade Association www.stta.org.uk/index.html
- Association of Scottish Hardwood Sawmillers www.ashs.co.uk

Further information on suppliers of UK timber is available from:

- UK Forest Product Association www.ukfpa.co.uk/default.htm
- Timber Trade Federation www.ttf.co.uk/Default.aspx

Full contact details are provided in Section 7.

2.4 Certification and procurement

(a) Specifying local timber

Whilst 75% of new homes in Scotland are timber-framed, 72% of the 11Mm³ of sawnwood material that is used in Britain each year comes from abroad. The UK is one of Europe's largest importers of wood and wood-based products.

The building contractor is normally responsible for sourcing materials, guided by a specification drawn up by the designer or architect, together with a commercial master specification system which describes the products required. Such general systems do not cover local product availability or its specification. Structural engineers also have an important role to play in respect of the exact specification of structural elements.

It is therefore essential that if local timber is preferred suppliers offering products available from home-grown timber will need to be listed in the specification. This requires some research on the client or specifier's behalf. This guidance helps to identify the products and sawmills producing local timber products. Checks will be necessary to determine whether the required product is available, and the proportion of local timber which it contains.

(b) Certification

Increasing emphasis is attributed to certification schemes for a variety of products and consumer goods to ensure good environmental and ethical standards of production. In terms of forestry products certification it is used to indicate legal and sustainable products and enables informed decisions about the purchase of timber from sustainably managed forests to be made.

Timber certification is a worldwide mechanism to provide assurances that timber comes from well-managed forests. Certification is essentially a timber-labelling scheme and it is independent, voluntary and paid for by the forest owner.

There are a number of certification schemes operating around the world, the most commonly encountered labels in the UK are:

- FSC - The Forest Stewardship Council
- PEFC - Programme for the Endorsement of Forest Certification

The UK Government's policy is to specify only legal and sustainable timber. However certification is not the only mechanism to provide suitable evidence of sustainability. A second category of evidence, known as Category B, provides for non-certified timber. This is particularly relevant to smaller growers of timber in the UK. The Central Point of Expertise on Timber (www.proforest.net/cpet) has been established to assist the public sector and others in timber specification. In addition to FSC and PEFC the Central Point of Expertise on Timber currently recognises two other certification systems. These are:

- Canadian Standards Association (CSA)
- Sustainable Forestry Initiative (SFI)

The Malaysian Timber Certification Council (MTCC) was recognised as legal but not necessarily sustainable timber. The new Malaysian standard (MTCS) meets the sustainability criteria and has been endorsed by PEFC, but it is not yet available at the time of writing (January 2010). For the most current information please refer to: www.proforest.net/cpet.

These systems are all based on the common principles of:

- Forest certification – inspection against pre-determined standards; and
- Chain-of-custody certification – a documented supply chain for tracking timber products.

The range of environmental issues addressed differs with each scheme. Some standards also address social issues such as the rights of indigenous peoples.

Case Study – Russwood Offices

Location: Station Sawmill, Newtonmore
Architect: Dualchas Building Design

The building features various timbers, some home grown some imported, supplied by Russwood. This includes oak flooring, Douglas Fir facings and cladding.

The windows are laminated oak; those on the north facing side of the building have been left to weather naturally.

A mix of coated and uncoated larch cladding has been used as a demonstration of the effects of weathering.



(c) Public procurement

Whilst development projects funded by the private sector have considerable freedom of choice when it comes to sourcing their preferred construction materials, projects partly or entirely funded by the public sector are governed by strict EU public procurement regulations. The EU rules stipulate that restrictions on products and tenders cannot be made on the basis of geography; therefore it is illegal to specify Scottish timber directly for publicly funded projects.

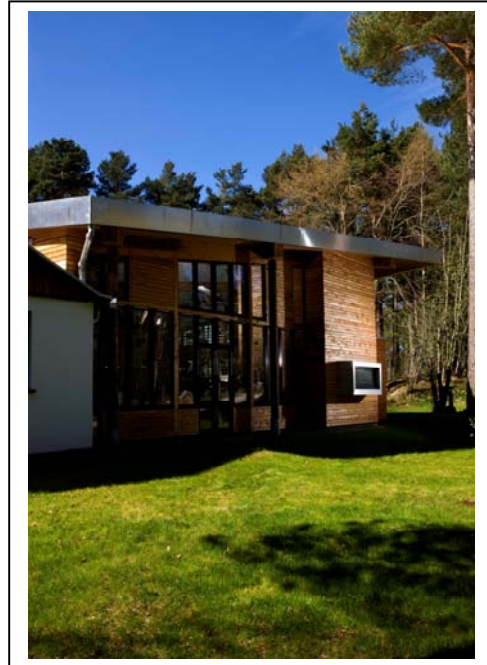
Sustainable Construction Timber – sourcing and specifying local timber (2009) by Ivor Davies, Centre for Timber Engineering, Napier University, explores how local timber can and cannot be specified under the EU procurement rules that govern public procurement. The document sets out the main circumstances under which specification of local timber may be acceptable within a publicly funded contract.

Public procurement rules are a complex area and further information can be found at: [www.forestry.gov.uk/pdf/fcfc152.pdf/\\$FILE/fcfc152.pdf](http://www.forestry.gov.uk/pdf/fcfc152.pdf/$FILE/fcfc152.pdf)

Case Study - Forestry Commission Offices, Huntly

hri-architects have designed three buildings for the Forestry Commission Scotland (FCS) and Scottish Natural Heritage (SNH) that are exemplars in the use of home grown timber. These are; the Forestry Commission offices at Smithton, Inverness; the joint government offices at Golspie; and the FCS offices at Huntly.

The Huntly offices were completed in March 2008. The internal structure of these offices is made from homegrown Scots Pine circular columns from Galloway. External structure comprises large section Douglas Fir from Fort Augustus. Framing for walls, floors and roof is provided by composite I beams/joists made from imported spruce with home grown Oriented Strand Board (OSB) webs manufactured by James Jones and Sons, Forres. Sheathing is also from locally manufactured OSB; all secondary framing is untreated home grown larch. Cladding is also from untreated home grown larch from Fort Augustus. Internal finishes of home grown ash, sourced from Aberdeenshire, is used in skirtings and architraves.



Building upon their experience at Smithton, and in response to the locally dominant native timber Scots Pine was selected for this building to demonstrate that home grown timber, if specified and used correctly could be obtained and used successfully without the use of harmful preservatives on a large scale commercial project. This demonstrated that Scots Pine is strong enough to be used as structural elements and if felled correctly could avoid 'blue stain'. Designing according to the strengths of the available materials was the key determinate in the design process and therefore harmful timber treatment processes could safely be avoided with present and future benefits to the environment.

I joists were used not just as floor joists but also as wall studs and as roof purlins. This meant that a greater proportion of insulation could be used in relation to wall/floor/roof thickness thus improving the thermal efficiency without thickening the fabric or using insulations that use large amounts of energy or harmful chemicals in their manufacture. The building had a 20% improvement on the thermal efficiency standards current at the time.

Photographs by hri-architects



3. The benefits of using local timber

3.1 Timber as a carbon sink

Growing trees absorb CO₂ from the atmosphere and store carbon in their stems, branches, foliage and roots. Large quantities of carbon are also stored in forest soils. Stimulating demand for local timber products will help grow the forest industry further by encouraging new forests to be planted and create more carbon storage capacity. Proportionally, young fast-growing coniferous forests take carbon out of the atmosphere most quickly.

When mature trees are harvested the carbon remains locked up inside the timber until the timber is oxidised – either through combustion (for example burnt as fuel) or natural decomposition. The carbon released back into the atmosphere is equivalent to the volume assimilated during the life of the growing tree and so the process is therefore carbon neutral. In practice, carbon emissions from oxidation are absorbed by trees planted to replace harvested forests.

Reducing the amount of carbon dioxide (CO₂) in the atmosphere is fundamental to combating climate change. Wood products act as a carbon sink throughout their life. This means that carbon is effectively locked up in the timber, thereby reducing the amount of carbon dioxide in the atmosphere which is one of the most significant greenhouse gases which contributes to climate change.

In terms of timber construction this means that carbon can be effectively locked up in the structure of a building for many years. Some timber buildings are known to date back hundreds of years. Increased use of timber as a core construction material can therefore contribute significantly to addressing climate change.

To optimise this low-carbon advantage however, the timber needs to be used as close to its source as possible in order to avoid excessive carbon emissions from transportation. In the North Scotland, where there is a large local timber resource, strides could be taken towards delivering low-carbon development. Utilising large quantities of local timber in a development therefore ranks highly in terms of sustainable construction.

3.2 Low embodied energy

Timber has low embodied energy. This means that it takes very little energy to turn a growing tree into a useful construction material. Other construction materials such as steel and concrete have very high embodied energy – they require a lot of processing in order to turn their constituent raw materials into usable construction products.

Edinburgh Centre for Carbon Management (ECCM) estimates that a typical 3-bed detached Scottish house comprises 16.8tonnes of CO₂ in construction materials. However, if timber replaces exterior blockwork, windows and door frames and so on this could be reduced to as little as 2.4tonnes of CO₂ a substantial saving considering the scale of development proposed in local plans over the next 5 to 10 years.

For further information see: www.eccm.uk.com/httpdocs/index.htm

3.3 Insulation properties

Timber is a flexible construction material and enables high levels of insulation to be achieved through the accommodation of higher than required levels of insulating materials within deep wall, floor and ceiling cavities of timber-framed buildings. The extra deep cavities result in lower energy demand for heating.

Domestic heating is one of the biggest sources of CO₂ emissions and therefore one of the key areas to be tackled to limit climate change. The construction of thermally-efficient buildings is a big step in the right direction.

Transport has a significant effect on the embodied energy of delivered timber because timber has such a low embodied energy in the first place.

3.4 Minimising timber miles

North Scotland by its nature is fairly remote; hence the need to transport construction materials is an important consideration for all development projects, irrespective of their scale. The use of local materials can help to overcome the costs, timescales and logistical problems associated with having to transport materials large distances on small rural roads. It can also reduce emissions from transport, which accounts for a large part of the embodied energy in construction materials.

The ECCM estimates emissions from transport of timber to be in the following proportions compared to a journey within Scotland by lorry (road transport):

- Sweden to Scotland = 5.4 times more CO₂ emissions
- Latvia to Scotland = 18 times more CO₂ emissions
- Canada to Scotland = 19 times more CO₂ emissions

Based on this study (ECCM Report 196 undertaken in 2006) local timber therefore has the lowest emissions.

Case Study – New build home

Location: Golspie, Sutherland
Architect: Anta Architecture

Cladding: home grown larch from local sawmill
Windows: painted timber windows
Wall Construction: 150 x 47 timber studs



3.5 Sustainable construction

Timber has many advantages over other construction materials such as concrete, metal and plastic in all three (environmental, social and economic) aspects of sustainability.

A 'cradle to grave' approach to embodied energy recognises the total primary energy consumed during a material's lifetime – from its extraction as a raw material (felling in the case of timber) through its processing (sawmill and manufacture) to delivery and use on the development site. A full 'cradle to grave' approach also includes the disposal of the material at the end of its life and whether, like timber, it is able to be re-used or recycled.

As a building material, timber can be easily repaired. The facility for damage to be repaired is consistent with a sustainable approach to construction. Materials such as uPVC which cannot be repaired result in whole components (such as a complete window fitting) needing to be replaced when relatively minor damage has occurred. This is not the case for timber elements which can be repaired and also means that skilled woodworkers such as carpenters and joiners remain in demand, thereby maintaining traditional skills and knowledge and the use of local materials.

There is increasing interest in the use of sustainable and local materials, reflecting the traditional or vernacular architecture, but also utilising new methods of construction and design influences from across the world including flexible design. Using timber structures enables buildings to be adapted to meet changing needs in terms of living and working environments over the lifetime of a building.

Health benefits also transpire from the use of timber. In its natural state it is a low-allergen, low toxin material unlike many other construction materials. The use of natural and untreated materials helps to improve indoor environments. Built to sustainable standards buildings which are easy to heat and light will help improve quality of life for those using the building.

There are clear economic benefits for North Scotland from a vibrant and progressive forest and timber industry which has helped sustain the social fabric of the area for many years. The timber industry and supporting services are a key element of life in North Scotland. Forestry is a significant part of the landscape and the processing and use of timber has historically been part of life here.

Timber from sustainably managed forests is a renewable resource. The demand for timber impacts on the management of woodlands and can influence the species that are grown. An increase in demand for home-grown timber should improve returns to woodland owners and encourage expansion of well-designed and sustainably managed forests which should in turn improve local biodiversity and landscape quality.

4. National policy context

National policy which supports the use of timber as a sustainable construction material can be found in planning, forestry, climate change, and sustainable development policy. These four areas of policy are closely interwoven and mutually supportive. In turn, the use of local timber supports the delivery of the Government's aims in these policy areas. This is explored in more detail below.

4.1 A low carbon building standards strategy for Scotland

The Government's interest in climate change and sustainability is reflected in its commissioning of the Sullivan Report *A low carbon building standards strategy for Scotland* in 2007 and led to the review and refinement of Building Regulations to reduce carbon emissions from new development. The requirements of the Building Regulations has helped to stimulate new ways of thinking in the construction industry leading to innovation in construction materials and the ways in which they are used.

The Sullivan Report outlines the Scottish Government's approach to meeting the recommendations in the Stern Report on climate change and other national government commitments to carbon reduction. The report sets out a programme for reducing CO₂ emissions by increasing the energy efficiency of new buildings and gives standards for both domestic and non-domestic buildings. The standards are expressed in terms of a percentage reduction in CO₂ emissions levels on the levels set out in the 2007 Building Regulations. This emissions reduction programme sets the following standards:

Domestic buildings

- 2010 = low carbon standard (30% reduction on 2007 CO₂ emissions levels)
- 2013 = very low carbon (60% reduction on 2007 CO₂ emissions levels)
- 2016 = net zero carbon in use
- 2030 = total life zero carbon domestic standards.

Non-domestic buildings

- 2010 = 50% reduction on 2007 CO₂ emissions levels
- 2013 = 75% reduction on 2007 CO₂ emissions levels
- 2016 = net zero carbon buildings
- 2030 = total life zero carbon buildings

Further information is available from: www.scotland.gov.uk/Resource/Doc/217736/0092637.pdf

4.2 Scottish Forestry Strategy

Each of the partners to this guidance has a forests and woodlands strategy; the Council's strategies are included in their suite of development plan documents. The local strategies interpret the themes contained in the Scottish Forestry Strategy (2006) and apply them to the local context. Most pertinent to the context of this guidance is that all of the local strategies support the Scottish Forestry Strategy's key theme of "*getting the most from Scotland's increasing and sustainable timber resource*".

The Scottish Climate Change Programme has set a carbon savings contribution for the forestry sector with action focussed on four areas:

- (1) afforestation;
- (2) biomass as a renewable fuel;
- (3) wood as a substitute for energy intensive building materials; and
- (4) timber miles.

The stimulation and support of the timber supply chain and creation of new markets for local timber products are key elements of the Scottish Forestry Strategy and the Timber Development Programme which will contribute to the action on climate change.

In addition to this, both the Scottish Forestry Strategy and the Timber Development Programme clearly identify the importance of forestry in supporting sustainable rural development.

The Timber Development Programme is an initiative that encourages the use of timber and timber products as one of its four key objectives. This programme has produced a number of publications relevant to timber in construction. These include:

- *New Timber Architecture in Scotland* (2007)
- *Sustainable Construction Timber: sourcing and specifying local timber* (2009)
- *Designing Houses with Scottish Timber* (2009)

Further information is available from: www.forestresearch.gov.uk/forestry/INFD-7BMMPR

4.3 UK shared framework for sustainable development

Sustainable development is about enabling development that will improve the current quality of life for all whilst taking account of environmental limits in order to ensure that future generations are also able to meet their own needs. The UK Government and Devolved Administrations launched their strategic framework for sustainable development *One future - different paths* in 2005 (www.defra.gov.uk/sustainable/government/documents/SDFramework.pdf).

Sustainable development is integral to the Scottish Government's overall purpose - to create a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

A Greener Scotland (www.scotland.gov.uk/About/scotPerforms/objectives/greener) is one of the five strategic objectives that form part of the Government's National Performance Framework. Through this objective the Government aims to improve Scotland's natural and built environment and the sustainable use and enjoyment of it. The national outcomes most closely associated with this objective are:

- *We value and enjoy our built and natural environment and protect it and enhance it for future generations;*
- *We reduce the local and global environmental impact of our consumption and production; and*
- *We live in well-designed, sustainable places where we are able to access the amenities and services we need.*

The fundamental principle of sustainable development is that it integrates social, economic and environmental objectives. Land use planning is fundamental to the achievement of sustainable development; plans and decisions must act to promote development that moves towards a more sustainable society in terms of all three aspects. Well-managed forests deliver social, economic and environmental gains. Well-planned and executed built development can also deliver these benefits.

The local timber industry is part of a dynamic and growing rural economy which, if supported by greater local demand for its products, will help to provide prosperity and opportunities for local communities. This economic growth enables increased quality of life through local employment prospects which in turn help support and sustain small rural communities.

Sustainable development is not just about economic viability; it is also about the natural and built environment in which we live. Sustainably managed commercial forests can have a positive impact on the natural environment by creating habitats and enhancing biodiversity, particularly through the use of native species, and provide opportunities for recreation and tourism which may also help to support local communities.

Increased use of timber in the construction of homes in northern Scotland is also consistent with the provision of higher quality living environments for householders; improved insulation standards in an area with cold winter temperatures can result in lower heating and maintenance costs which can help to alleviate fuel poverty.

4.4 Scottish Planning Policy and Guidance

The new Scottish Planning Policy (SPP) was published in February 2010. It consolidates the previous series of topic-based Scottish Planning Policy documents into one single policy document. The consolidated SPP sets out the Government's planning policy position on climate change and sustainability. Timber construction contributes to the Government's intentions in this respect. For example, it allows flexibility in terms of increasing insulation levels within floors, ceilings and walls. This is fundamental to reducing carbon emissions by reducing the amount of energy required to heat a building.

Further information on Scottish Planning Policy can be found at:

www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP

4.5 Climate Change (Scotland) Act 2009

The UK Government is committed to reducing greenhouse gas emissions by 12.5% (on 1990 levels) by 2012. The so-called Scottish Share of this, as set out in the Scottish Climate Change Programme is 8.3% of the required UK savings. The Scottish Climate Change Programme set the contribution by the forestry sector at 35% of the Scottish total. To achieve this, the forestry sector needs the construction sector to substantially increase use of timber.

The Climate Change (Scotland) Act has given local authorities a new planning policy context. The Act requires all public bodies to act in such a way that best contributes to the delivery of the emissions targets which are set out by the Act, ie: an 80% reduction in emissions by 2050, with an interim target of a 42% reduction by 2020.

Changes to the built environment, to reduce resource use and energy requirements, will be needed to achieve these targets. In addition to this, reducing the need to travel and encouraging

more sustainable forms of transport will be necessary. The use of locally-sourced timber will be an important consideration in reducing transportation requirements for construction materials.

The requirements of the Climate Change (Scotland) Act have been incorporated into the consolidated SPP. This directly and clearly links the need to address climate change to the ethos and activities of the land-use planning system. The SPP requires adaptation and mitigation activity in relation to climate change to be a fundamental consideration in all planning decisions. This includes issues for development plans such as the requirement for the siting, design and layout of all new development to contribute to limiting greenhouse gas emissions, particularly by limiting resource and energy requirements. Timber clearly has a role to play here.

The Climate Change (Scotland) Act requires, under section 72, development plans to require all new buildings to be designed so as to avoid a specified and rising proportion of greenhouse gas emissions from their use through the installation and operation of low and zero carbon generating technologies. This is in-line with the recommendations of the Sullivan Report. Development plans will require to specify the target for the proportion of emissions to be avoided, and the target will require to be increased over time.

Designing buildings which require less energy in their use is the starting point for meeting this requirement. The choice of construction materials, design and insulation all have key roles to play. Timber provides a means for constructing buildings with lower energy requirements.

Development plan policies on reducing greenhouse gas emissions from new buildings should work in tandem with and complement Building Regulations to achieve the shared goals of more sustainable buildings.

Further information on the Climate Change Act can be found at:

www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact

4.6 Building Regulations

The Building Standards Division of the Scottish Government (BSD) sets Building Regulations in relation to the various uses of timber in construction. The current Building Regulations and Technical Handbooks can be found at: www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech. Building Regulations are enforced locally by the relevant Council (see Section 6 for contact details).

Whilst a summary of the key issues is set out below the local Building Standards department should always be contacted for detailed interpretation of the Regulations and Technical Handbooks.

The Technical Handbooks provide guidance on achieving the standards set in the Building (Scotland) Regulations 2004 and are available in two volumes (one for domestic and the other for non-domestic buildings). Standards for timber as a construction material cover both structural integrity and fire protection. The two key elements for all building materials in relation to fire are: reaction to fire and resistance to fire.

In relation to timber as a building material there are 3 uses of timber where specific and unique building regulations are set. These are:

i. Timber as structure

Building regulations cover both structural integrity and fire protection in terms of the use of timber as a structural element of a building.

Structural integrity is covered by Part 1 of the Technical Handbook. A structural engineer is required to provide the necessary design information. This comes as part of the package for timber kit and pre-fabricated buildings. In any case to meet building standards a Structural Engineers Registration Certificate (SER) is required to be presented with the application for a Building Warrant.

In terms of fire resistance, there are three issues which are identified: (1) resistance to structural failure, (2) resistance to fire penetration, (3) resistance to the passage of heat.

ii. Timber as an exterior cladding

Regulations in this respect relate to durability and fire safety – this is addressed in Technical Handbook Part 2. These issues can be summarised as:

- Fire spread on the façade – fire retardant coatings and cavity barriers are required to slow down spread of fire between stories and across buildings.
- Fire spread from an adjacent building and within cavities – this requires the use of non-combustible materials to control spread of fire from one building to another, timber is therefore not suitable. External wall regulations vary depending on the proximity to the property boundary. Timber is classed as an unprotected area which is not allowable within 1m of a boundary. Specific areas allowed for unprotected areas are set depending on the distance to the boundary.

Additional information is provided on durability and the need for timber treatment and or coatings.

iii. Timber as an interior lining

Timber is classified as a high risk material when it is used as an interior lining; limits are therefore set on the amount of wall surfaces that may be timber lined. Increased proportions of timber can be achieved with flame retardant coatings or fire sprinklers in order to meet the regulations.

5. Shared goals and individual local policy contexts

5.1 Climate Change and Sustainable Development

Scotland's Climate Change Declaration

All of Scotland's 32 local authorities signed up to Scotland's Climate Change Declaration between January and April 2007. As signatories to the Declaration, the authorities acknowledge the reality and importance of climate change. They are committed to:

- mitigating their own impact on climate change through reducing greenhouse gas emissions;
- taking steps to adapt to the unavoidable impacts of a changing climate; and
- working in partnership with their communities to respond to climate change.

Scottish local authorities play a key role in the collective response to the challenge of climate change. Signing the Declaration publicly demonstrates their commitment to action.

Further information can be found at: www.sustainable-scotland.net/climatechange.

In addition to signing the Declaration the authorities in North Scotland are all taking individual and collective action to address climate change.

North East Scotland Climate Change Partnership

In May 2008 the North East Scotland Climate Change Partnership (NESCCP) was formally launched. Aberdeen City, Aberdeenshire and Moray Councils, and Forestry Commission Scotland are all members of NESCCP together with a number of other north-east public sector organisations, universities and representatives of the business community.

The role of the public-private sector group is to ensure that the north-east of Scotland works together to address the implications of climate change, and its effects on the economy, environment and quality of life, now and in the future. This includes raising awareness of opportunities and responsibilities to tackle the issues presented by climate change. The partnership aims to:

- Lead by example;
- Share and communicate good practice;
- Learn from the experience of others;
- Encourage discussion and debate;
- Identify and facilitate joint projects;
- Monitor overall progress; and
- Encourage action from other local organisations

Highland Council Climate Change Working Group

The Highland Council was one of the first Councils to sign the Scottish Climate Change Declaration. It has established a Climate Change Working Group to take forward its

commitments. The Working Group oversees the production and implementation of a climate change strategy for the Highlands which deals with mitigation and adaptation. The group also oversees the implementation of the relevant commitments in The Highland Council Programme and Scotland's Climate Change Declaration and ensures that all recommended changes across Council services are implemented.

A low carbon National Park

In July 2009 the Cairngorms National Park Board set out its ambition to work towards becoming a low carbon national park. This policy acts as the focus for action and support by the Park's partners. This ambition is set within the national context of the Climate Change (Scotland) Act and the national delivery plan which place new duties on the National Park Authority to set targets which will drive work within the National Park on climate change.

5.2 Local policy context

The use of local timber is only one, albeit substantial, contribution to the wider aims of achieving sustainable development. This guidance should therefore be seen in the wider, and more strategic, development plan context, and is complementary to the detailed local guidance provided on other subjects such as sustainable construction and reduction of carbon emissions.

All authorities have made commitments to address climate change and sustainable development through a range of mechanisms. This guidance supports these individual commitments made through a range of local policies.

These commitments include policies contained in Structure Plans, Local Plans, the Cairngorms National Park Plan, supplementary guidance and that contained in forestry and woodland strategies. The principal policy documents and key policies are set out below.

It should be noted that development plans are continually updated through research, policy review and monitoring. There is also currently a move towards a new style of development plan in line with the requirements of the Planning etc (Scotland) Act 2006. Further information on this can be found at: www.scotland.gov.uk/Topics/Built-Environment/planning.

The information contained in the following section represents planning policy as at January 2010. For the most up-to-date position please refer to the relevant planning authority website.

Aberdeen City Council and Aberdeenshire Council

Structure Plan (2009)

The joint structure plan covers both Aberdeen City and Aberdeenshire. The main aims of the plan are to:

- *provide a strong framework for investment decisions which help to grow and diversify the regional economy, supported by promoting the need to use resources more efficiently and effectively; and*
- *take on the urgent challenges of sustainable development and climate change.*

Objectives include:

To be a city region which takes the lead in reducing the amount of carbon dioxide released into the air, adapts to the effects of climate change and limits the amount of non-renewable resources it uses.....To tackle climate change, all new developments must be designed and built to use resources more efficiently and be located in places where they have as little an effect on the environment as possible.

The plan sets a target for all new buildings to be carbon neutral by 2016. These targets will be met through promotion of a move towards carbon neutral buildings through the local development plans and associated supplementary guidance.

Forest and Woodland Strategy for Aberdeenshire and Aberdeen City (2005)

The strategy aims to:

- *Establish a programme to increase the use of home-grown and preferably locally sourced timber, and to*
- *Continue to promote and raise awareness of the quality and availability of local timber for use in the construction market.*

Aberdeen City Council

Local Plan (2008)

The key local plan policy is Policy 23: Eco Development

Policy 23: Eco Development

In assessing planning applications for new developments the City Council will give favourable weight according to the degree to which they further the interests of sustainable development through:

- *The use of sustainable materials in construction, beyond the minimum requirements of the Building Standards.*
- *The use of Lifetime Homes standards in housing.*
- *The use of energy efficient technologies such as solar panels.*
- *The creation of energy efficient layouts.*
- *The use of water saving technologies such as dual flush systems and water butts.*

- *Design to avoid the unnecessary production of waste and to facilitate the management of waste in accordance with the order of preference for waste of (1) reduction, (2) reuse, (3) recovery and (4) disposal.*

Aberdeenshire Council

Local Plan (2006)

The key local plan policy is G1: Sustainability Principles

Policy Gen 1: Sustainability Principles

Development will be assessed against sustainability indicators that relate to the local environment, community and economy, demonstrated by whether the proposal:

- a) is concerned with the long term sustainable use and management of land;*
- b) is well related to existing settlements and avoids dispersed patterns of development;*
- c) reduces the need to travel using private cars, by being close to existing public transport or allowing safe, easy access by walking and cycling;*
- d) protects or enhances any valuable natural resources, including landscapes and wildlife habitats or species;*
- e) does not damage built or cultural heritage resources;*
- f) does not impact negatively on the character, including landscape character, environment or amenity of the surrounding area;*
- g) makes full use of design and technology to maximise the efficient use of energy and resources, and minimise light pollution;*
- h) does not prejudice future development opportunities nor create a precedent for inappropriate future development patterns;*
- i) reduces the production of waste and manages it as a resource in accordance with the waste hierarchy i.e. Reduce, Reuse, Recover, Dispose;*
- j) does not give rise to hazards, pollutants, flooding or nuisances in the surrounding area;*
- k) does not compromise public health or safety;*
- l) provides new, or helps support existing, local employment;*
- m) helps support existing community services and facilities;*
- n) provides affordable access to land or housing to people in need and promotes security of tenure. Where the assessment concludes that there is significant uncertainty as to whether the proposed development would cause substantial harm, the precautionary principle will be applied.*

Justification

The aim of this policy is to ensure all new development is as sustainable as possible and that developers give increasing consideration to sustainability aspirations in their proposals.

Cairngorms National Park Authority

National Park Plan (2007)

The four aims set out in the National Parks (Scotland) Act 2000 are:

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

Strategic objectives identified in the National Park Plan include:

- *Improve the physical quality, energy efficiency and sustainable design of housing in all tenures throughout the Park.*

Outcomes identified in the plan include;

- *New housing will be of a more sustainable design.*
- *A diverse, viable and productive land management sector will continue to provide high quality primary produce such as food and timber, whilst delivering public benefits which are compatible with the Park's special qualities and will make a growing contribution to employment and the local economy.*

Cairngorms National Park Forest and Woodland Framework (2008)

The strategy's aims include:

- *Increase the value of timber and other local forest products, strengthen supply chains and develop new markets; and*
- *Contribute to national efforts to address climate change.*

Local Plan (Deposit Draft) (2008)

The National Park Authority is committed to preparing a Sustainable Design Guide and sustainability checklist to supplement the Local Plan's Sustainable Development and Design Standards policies.

Developers must consider how they can best include the principles of sustainable development in their proposals. All future planning applications will be assessed on the basis of the proposal's sustainability credentials and those making a positive contribution to sustainable development will be more favourably considered.

Policy 18 Design Standards for Development

Design of all development will seek, where appropriate, to:

- a) *minimise the effect of the development on climate change;*
- b) *reflect and reinforce the traditional pattern and character of the surrounding area, and reinforce the local vernacular and local distinctiveness, whilst encouraging innovation in design and use of materials;*
- c) *use materials and landscaping that will complement the setting of the development;*

- d) *demonstrate sustainable use of resources (including the minimisation of energy, waste and water usage) throughout construction, within the future maintenance arrangements, and for any decommissioning which may be necessary;*
- e) *enable the storage, segregation and collection of recyclable materials and make provision for composting;*
- f) *reduce the need to travel;*
- g) *take account of the amenity enjoyed by neighbouring properties and ensure all proposals are designed to help create healthy, safe, affordable environments that can be enjoyed by everyone;*
- h) *accord with the design standards and palette of materials set out in the Sustainable Design Guide and any other supplementary guidance produced relating to design for new developments.*

All proposals must be accompanied by a design statement which sets out how the requirements of the policy have been met.

Role of the Cairngorms National Park Authority in Planning and Building Standards

Within the Cairngorms National Park, all applications for planning permission should always be submitted to the Local Authority in which the development site is located, in the normal manner.

The Cairngorms National Park Authority (CNPA) then has 21 days to decide whether to call in the application, typically only dealing with applications which are of significance to the aims of the Park. If an application is called in, then thereafter, CNPA takes responsibility for all aspects of the determination of the planning application. In instances when planning applications are not called in, the Local Authority continues to act as planning authority.

Building Control within the Cairngorms National Park is the responsibility of the relevant Local Authority, and not the National Park Authority.

The Highland Council

Structure Plan (2001)

The Structure Plan sets out 15 sustainable objectives. These are to maximise:

- *community empowerment and decision-making;*
- *the diversification of the regional and local economies;*
- *the quality and number of employment opportunities;*
- *accessibility to and quality of housing;*
- *the safety, enjoyment and diversity of towns and villages;*
- *standards of health for all;*
- *the effectiveness and efficiency of infrastructure provision;*
- *accessibility to community facilities and services;*
- *accessibility to education and training;*
- *the maintenance and enhancement of the cultural heritage, including landscape and Gaelic language;*
- *the quality of the built environment;*
- *biodiversity;*
- *the optimal use of renewable and non-renewable resources;*
- *the efficiency of energy use; and*
- *the quality of air, water and land.*

The plan's strategic themes include:

- *Addressing the need for quality living environments; buildings should be energy efficient and of attractive design in keeping with their surroundings. Use should be made of local materials wherever possible.*

The key structure plan policy is G2: Design for Sustainability

G2: Design for Sustainability

Proposed developments will be assessed on the extent to which they:

- *are compatible with service provision (water and sewerage, drainage, roads, schools, electricity);*
- *are accessible by public transport, cycling and walking as well as car;*
- *maximise energy efficiency in terms of location, layout and design, including the utilisation of renewable sources of energy;*
- *are affected by significant risk from natural hazards, including flooding, coastal erosion, land instability and radon gas, unless adequate protective measures are incorporated, or the development is of a temporary nature;*
- *are affected by safeguard zones where there is a significant risk of disturbance and hazard from industrial installations, including noise, dust, smells, electro-magnetism, radioactivity and subsidence;*
- *make use of brownfield sites, existing buildings and recycled materials;*
- *impact on individual and community residential amenity;*
- *impact on non-renewable resources such as mineral deposits of potential commercial value, prime quality or locally important agricultural land, or approved routes for road and rail links;*

- *impact on the following resources, including pollution and discharges, particularly within designated areas: habitats freshwater systems; species marine systems; landscape cultural heritage; scenery air quality;*
- *demonstrate sensitive siting and high quality design in keeping with local character and historic and natural environment and in making use of appropriate materials;*
- *promote varied, lively and well-used environments which will enhance community safety and security and reduce any fear of crime;*
- *accommodate the needs of all sectors of the community, including people with disabilities or other special needs and disadvantaged groups; and*
- *contribute to the economic and social development of the community.*

Developments which are judged to be significantly detrimental in terms of the above criteria shall not accord with the Structure Plan.

The Highland Forest and Woodland Strategy (2005)

The strategy includes aims associated with:

- *Working with partners to address economic and infrastructure issues for timber (including processing).*

Local Plans

There are currently 8 local plans covering the Highland Council area. These are:

- Badenoch and Strathspey (1997)
- Caithness (2002)
- Inverness (2006)
- Nairn (2000)
- Ross and Cromarty East (2007)
- Sutherland (Deposit Draft) (2008)
- Wester Ross (June 2006)
- West Highlands and Islands (Deposit Draft) (2008)

Each of these plans contains policies associated with sustainable development which this guidance will support, for example:

Inverness Local plan (2006)

GP1 Design Principles

The following key aspects of design will be expected to underpin all development proposals. These principles set standards for quality in development and are intended to ensure that new buildings or uses fit well with their surroundings, strengthen and add value to places....

- *Enrich the existing: new building and changes in land management should improve existing places. This means distinctive development that arises from and complements its setting. This applies at every scale – the City, neighbourhood, village and street and in the countryside;*
- *Work with the landscape: places that balance the natural and man-made environment and utilise intrinsic resources – climate, landcover, topography, ecology and views – will maximise energy conservation and amenity.....*

- *Design for change: new development needs to be flexible enough to respond to future changes in use, lifestyle and demography. This means designing for energy and resource efficiency, creating flexibility in the use of property.....*

GP3 Designed Sustainable Construction

To help achieve the fundamental objective of ensuring that development becomes sustainable as required by policy G2 in the Structure Plan, proposals for new buildings and most forms of development will need to demonstrate that they represent good design. Developers will be required to demonstrate that account has been taken of the following important aspects:

- *location, transport and accessibility;*
- *layout, orientation, aesthetics and urban design;*
- *landscape, bio-diversity and ecology including sustainable drainage systems;*
- *durable building incorporating design for 21st Century performance (energy, water efficiency and livability);*
- *non-toxic materials, processes and products to address public health and pollution;*
- *waste minimisation including re-use/recycling (including the separation/collection of household, commercial or industrial waste); and local natural materials.*

The Council has prepared draft supplementary guidance on the aspects of design and sustainable construction listed in the policy in the form of a Development Plan Policy Guideline: Design for Sustainability in the Highlands.

Highland Wide Development Plan Main Issues Report

The Highland Council is currently preparing a Highland Wide Development Plan. The Main Issues Report identifies the importance of sustainable design, and proposes that supplementary guidance on sustainable design should be prepared in support of the development plan to encourage a more sustainable approach to the built environment.

Sustainable Design

The need to reduce energy consumption and to encourage development in a sustainable manner forms a key message from Scottish Government. The use of more sustainable building practices and the incorporation of renewable sources of energy can provide a valuable contribution towards reducing the carbon footprint of development.

For smaller scale development the provision of advice on things to consider when developing will assist in the move to sustainable thinking. Issues to cover are advice on site selection and siting, orientation to utilise solar energy, increasing insulation levels and utilising locally sourced materials where possible.

The Moray Council

Structure Plan (2007)

The plan's development strategy includes the following:

- *Promotion of sustainable construction, siting and design principles;*
- *Sustainable use of natural resources;*
- *Promotion of well designed and located low impact development in rural areas.*

Moray Forestry Strategy (2002)

The strategy's aims include:

- *Supporting and encouraging the existing forestry industry and promoting competitiveness and a higher quality product.*

Local Plan (2008)

The key local plan policy is IMP1: Development Requirements which requires the consideration of sustainable design and construction in all development in order to promote sustainability within Moray.

Policy IMP1: Development Requirements

New development will require to be sensitively sited, designed and serviced appropriate to the amenity of the surrounding area. It must meet the following criteria:

- a. the scale, density and character must be appropriate to the surrounding area,*
- b. the development must be integrated into the surrounding landscape,*
- c. adequate roads, public transport, and cycling and footpath provision must be available, at a level appropriate to the development,*
- d. adequate water, drainage and power provision must be made,*
- e. sustainable urban drainage systems should be used where appropriate, in all new developments*
- f. there must be adequate availability of social, educational, healthcare and community facilities,*
- g. the development should, where appropriate, demonstrate how it will incorporate renewable energy systems and sustainable design and construction. Supplementary Guidance will be produced to expand upon some of these criteria,*
- h. provision for the long term maintenance of public landscape and amenity areas must be made,*
- i. conservation of natural and built environment resources must be demonstrated,*
- j. appropriate provision to deal with flood related issues must be made, including the possibility of coastal flooding from rising sea levels and coastal erosion,*
- k. pollution, including ground water must be avoided,*
- l. appropriate provision to deal with contamination issues must be made, and*
- m. the development must not sterilise significant workable reserves of minerals, prime quality agricultural land, or preferred areas for forestry planting.*
- n. where appropriate, arrangements for waste management should be provided.*

6. Sources of support and advice

Planning and Building Standards contacts

Aberdeenshire Council

General enquiries: telephone 08456 08 12 07

Email: planning@aberdeenshire.gov.uk

Contact details for area offices can be found at:

Building Standards: www.aberdeenshire.gov.uk/planning/buildingstandards/contact.asp

Planning: www.aberdeenshire.gov.uk/planning/contact.asp

Aberdeen City Council

Development Management and Building Standards Teams

Enterprise, Planning and Infrastructure

Aberdeen City Council

8th Floor St Nicholas House

Broad Street

Aberdeen AB10 1BW

Telephone: 01224 523470

Email: pi@aberdeencity.gov.uk

Cairngorms National Park Authority

Planning and Development Management Team

Albert Memorial Hall

Station Square

Ballater

Telephone: 01339 753601

Email: planning@cairngorms.co.uk

The Highland Council

General enquiries: telephone 01349 886606

Contact details for planning and building standards area offices can be found at:

www.highland.gov.uk/yourenvironment/planning/planning-and-development-contacts.htm

The Moray Council

Environmental Services

The Moray Council

High Street

Elgin IV30 1BX

Planning enquiries: telephone 01343 563501

Building standards enquiries: telephone 01343 563243

Email: buildingstandards@moray.gov.uk

Scottish Planning Policy and Building Regulations

Scottish Planning Policy

www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP

Scottish Building Regulations and Technical Handbooks

www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/about

Research

Forest Research

Northern Research Station

Roslin

Midlothian EH25 9SY

Telephone: 0131 445 2176

Email: nrs@forestry.gsi.gov.uk

Centre for Timber Engineering

Edinburgh Napier University

Merchiston Campus

10 Colinton Road

Edinburgh EH10 5DT

Telephone: 0131 455 2819

Email: cte@napier.ac.uk

Edinburgh Centre for Carbon Management (ECCM)

Tower Mains Studios

18F Liberton Brae

Edinburgh EH16 6AE

Telephone: 0131 6665070

Email: info@eccm.uk.com

Web: www.eccm.uk.com/httpdocs/index.htm

Procurement

Central Point of Expertise on Timber (CPET)

c/o ProForest Main Office

South Suite

Frewin Chambers

Frewin Court

Oxford OX1 3HZ

Helpline: 01865 243766

Email: cpet@proforest.net

Web: www.proforest.net/cpet

Forestry Commission Scotland

Sustainable construction - www.forestry.gov.uk/forestry/inf-d-6b2jfb

Procuring sustainable timber - www.forestry.gov.uk/forestry/inf-d-6w2e5s

Timber development programme - www.forestresearch.gov.uk/forestry/INFD-7BMMPR

Publications

Scottish Forestry Strategy (2006), Forestry Commission Scotland
[www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/\\$FILE/SFS2006fcfc101.pdf](http://www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/$FILE/SFS2006fcfc101.pdf)

Sustainable Construction Timber: sourcing and specifying local timber (2009), Ivor Davies
(Centre for Timber Engineering) [www.forestry.gov.uk/pdf/fcfc152.pdf/\\$FILE/fcfc152.pdf](http://www.forestry.gov.uk/pdf/fcfc152.pdf/$FILE/fcfc152.pdf)

Designing housing with Scottish timber: a guide for designers, specifiers and clients (2009),
John Gilbert Architects (FCS) www.forestry.gov.uk

A low carbon building standards strategy for Scotland (2007), Scottish Building Standards
Agency www.scotland.gov.uk/Resource/Doc/217736/0092637.pdf

New Timber Architecture in Scotland (2007), Peter Wilson

7. Suppliers

This list of suppliers is not comprehensive, it is simply meant to give an indication of the range of local suppliers. Please contact the suppliers direct to discuss specific requirements. Further suppliers can be located by contacting the relevant trade associations.

| | |
|---|--|
| <p>BSW Timber Head Office East End Earlston Berwickshire TD4 6JA</p> | <p>Phone: Sales enquiries 0800 5878887 Email: sales@bsw.co.uk Web: www.bsw.co.uk</p> <p>Local bases at Boat of Garten and Fort William</p> |
| <p>Cordiners North Deeside Road Banchory AB31 5YR</p> | <p>Phone: 01330 823366 Email: info@cordiners-sawmills.com Web: www.cordiners-sawmills.com</p> |
| <p>Cromartie Timber Ltd Orchard House Castle Leod Beauly IV14 9AA</p> | <p>Phone: 01997 421013</p> |
| <p>James Jones & Sons Ltd Head Office Broomage Avenue Larbert FK5 4NQ</p> | <p>Phone: 01324 562241 Web: www.jamesjones.co.uk</p> <p>Local bases at Huntly, Fochaber and Aboyne</p> |
| <p>JGD Munro and Partners Dingwall Sawmills Old Evanton Road Dingwall IV15 9UA</p> | <p>Phone: 01349 863006</p> |
| <p>John Gordon and Son Balblair Road Nairn IV12 5LT</p> | <p>Phone: 01667 453223 Email: sales@gordontimber.co.uk Web: www.gordontimber.co.uk</p> |
| <p>Norbord Station Road Cowie Stirlingshire FK7 7BQ</p> | <p>Phone: 01786 812921 Web: www.norbord.com</p> <p>Local base: Morayhill, Dalcross, Inverness IV2 7JQ Phone: 01463 792424</p> |

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|---|--|
| Norbuild Marcassie Farm Rafford Forres IV36 2RH | Phone: 01309 676865 Email: info@norbuild.co.uk Web: www.norbuild.co.uk |
| Novar Tulloch Sawmills Ltd Novar Evanton IV16 9XL | Phone: 01349 830464 Email: enquiries@novartulloch.co.uk Web: www.novartulloch.co.uk |
| Raddery Sawmill Black Isle Fortrose IV10 8SN | Phone: 01381 621261 |
| Russwood Station Sawmill Newtonmore PH20 1AR | Phone: 01540 673648 Email: mail@russwood.co.uk Web: www.russwood.co.uk |
| Woodworkz Lochcarron and Inverness | Lochcarron Phone: 01520 722568 Email: stuart@woodworkz.co.uk Inverness Phone: 01463 794812 Email: david@woodworkz.co.uk Web: www.woodworkz.co.uk |

Trade Associations

Scottish Timber Trade Association

David Sulman
STTA Secretariat,
Office 14,
John Player Building,
Stirling Enterprise Park,
Springbank Road,
Stirling FK7 7RP
Telephone: 01786 451623
Email: mail@stta.org.uk
Web: www.stta.org.uk

Timber Trade Federation

The Building Centre,
26 Store Street
LONDON
WC1E 7BT
Telephone: 020 3205 0067
Web: www.ttf.co.uk/Default.aspx

Association of Scottish Hardwood Sawmillers

Contact is by email only through the ASHS website: www.ashs.co.uk

UK Forest Products Association

Contact is by email through the UKFPA website: www.ukfpa.co.uk/default.htm

UK Timber Frame Association

The e-Centre
Cooperage Way Business Village
Alloa
FK10 3LP
Telephone: 01259 272140
Web: www.timber-frame.org