

Introduction to the Improved Conifer Timber Quality Seminar

This Guidance Note is the first of a series summarising information presented at a seminar on “Improved Conifer Timber Quality through Plant Selection and Silviculture”, held in February 2009 as part of FC Scotland’s [Timber Development Programme](#). It provides an outline of the introduction to the day’s proceedings that was delivered by John Kissock, Chair of the Timber Development Programme Steering Group and former Managing Director of James Jones & Sons Sawmills. Topics covered included the work of the Timber Development Programme, background information about the Scottish softwood timber industry and thoughts on the importance of growing timber for quality. The presentation itself is available for download through the [seminar web page](#).

Timber Development Programme

The Timber Development Programme is the timber industry’s response to challenges within the [Scottish Forestry Strategy](#). Launched in December 2007, the Programme was developed following widespread consultation within the forestry sector and is an opportunity to develop a supply chain and value chain which will significantly benefit Scotland’s economy and environment. Implementation is overseen by a steering group comprising representatives of a broad cross-section of the forest industry, including growers, processors, end-users, researchers and public sector agencies.

The Timber Development Programme is closely aligned to three of the seven key themes of the Scottish Forestry Strategy, namely Timber, Climate Change and Business Development. The Programme comprises 4 key objectives across which 60 tasks will be delivered between 2008 and 2011, through a series of partnerships between the forestry and research sectors.

Objective A: Promote a predictable and stable timber supply

Key issues include forecasting of future timber quantity and quality, and achieving a sustainable yield. Deliverables in this area include meetings of a Production Forecast Industry Working Group, validating the use of acoustic tools and lasers for timber quality assessment and running scenarios to assist in smoothing of future softwood production.

Objective B: Encourage more use of timber and timber products

Work is focused on improving knowledge of the timber market, promoting the carbon benefits of timber and optimising outputs from the research resource. Recent publications have from this area of work include “[Sustainable Construction Timber: Sourcing and Specifying Local Timber](#)”

and “[Designing Housing with Scottish Timber](#)”, both of which are available for download from the Forestry Commission Scotland [Sustainable Construction](#) web pages. A major conference on the [Carbon Benefits of Timber in Construction](#) was held in January 2009. The event was aimed at architects, developers, engineers and other construction professionals and highlighted the potential for timber products to contribute positively to carbon management in construction. Research projects funded include fire testing of timber cladding, assessing wood properties of the Sitka spruce resource and investigating the durability of home grown larch.

Objective C: Enable improvements to timber supply chain efficiency

There are two principal areas of work within this objective: minimising the financial and environmental costs of harvesting and transporting timber and enhancing the skills base within the timber supply chain. To address the first of these issues the Timber Development Programme supports the [Timber Transport Forum](#) and [local timber transport groups](#), as well as providing funding through the [Strategic Timber Transport Fund](#). In relation to the skills base, a study was commissioned to investigate the potential shortfall in skilled labour for future supply chain programmes.

Objective D: Encourage and enable improvements to the quality of the growing stock

Within this area work is aimed at taking forward the recommendations of the Growing Quality Broadleaves working group and at improving the quality and quantity of the softwood and hardwood timber resource. Activities have included ongoing support for the [Association of Scottish Hardwood Sawmillers](#) (ASHS), who were commissioned to hold a workshop exploring ways of improving the hardwood value chain (including species choice for future plantings), work by Forest Enterprise Scotland to establish demonstration plots for growing quality broadleaves and this seminar.

Growing timber for quality

What is meant by quality?

Definitions of timber quality depend on the end-user. For the sawmiller supplying the construction industry quality is generally related to stem form, strength and stiffness. For the pulp and paper manufacturer it is about fibre length and fibre brightness and, depending on the pulping process, maintaining freshness. For the board manufacturer lower moisture content and chip quality are more likely to be of importance. For renewable energy, uniformity of moisture content is key, as this affects boiler efficiency. Despite this range of definitions, a common theme amongst processors will be the need for uniformity - this allows them to maximise productive capacity and concentrate on specific markets. In sawmilling for example,

having to deal with a variety of sawlog types and qualities makes sawmill design difficult. The increased flexibility required to deal with such variety inevitably reduces efficiency.

Why concentrate on quality?

I propose three reasons for focusing on growing quality timber:

- Economic sustainability - the forest industry has to stand on its own feet as far as possible. Solid wood has historically always offered the best returns to growers. At present the public policy focus is very much on renewable energy, but that could change. We should not become over-reliant on sectors which depend on financial instruments to ensure the long term future of our industry, welcome though it may be at the time. Policies can change and what looks particularly attractive today may not be so appealing in the longer term.
- Competitiveness - we have to realise that there is not going to be a shortage of what I would call industrial conifer roundwood. We are undercutting the growing stock across the world, and in places like South America new, cost-effective plantations of *Pinus radiata* and *Eucalyptus* are being created which grow to maturity in 25 and 12 years respectively. In Europe it is estimated that we are harvesting approximately 65% of the net annual increment. If we are to sell our timber we must be competitive.
- Value for taxpayers' money - regardless of whether our forests are created in the State or Private Sector I firmly believe that growing for quality will always produce a better return for the taxpayers' investment.

Timber market information

The consumption of home-grown timber as a proportion of total UK timber consumption is around 30%. With a production of sawn timber approaching 3 million cubic metres per year the UK is the second largest supplier to the UK market after Sweden, which supplies 47% of the volume consumed.

Over the last thirty-five years there has been a change in the market sectors into which James Jones has sold timber. In the 1970s mining timber and railway sleepers were the principal market, but as these declined there was a shift towards pallets and packaging and construction, which are the predominant end-uses today, together with a fairly stable fencing market. Within construction there has been a change in the dimensions of sawn timber required, with an increase in the demand for smaller sections (47 x 100, 47 x 75), and a reduction in the demand for the deeper joist sections (47 x 200, 47 x 225). In terms of length, the greatest increase has been in the demand for 4.8 m pieces. These changes do not necessarily suit the available supply of an increasing proportion of red category sawlogs (generally from trees with poorer

stem form and therefore in shorter lengths) with a high proportion of juvenile wood which tends to distort more during kiln drying – particularly in smaller sections.

Conclusions

The Climate Change debate offers some real opportunities for productive plantations, in terms of their ability to act as carbon sinks. It also poses challenges in terms of species selection and adaptation. There is a need for more research into the topic and evidence based support for the creation of productive plantations - the establishment of a dedicated resource within FR to research Climate Change as related to forestry is welcome.

Climate Change also presents an opportunity for the promotion of solid wood in construction, offering longer term carbon storage ($0.9T\text{ CO}_2/\text{m}^3$), with an end of life opportunity to recycle. Locally sourcing also is becoming an increasingly important selling point.

Timber used in conjunction with other materials has great potential as an alternative to building solely in concrete and steel. Technology can help address some of the quality issues with home-grown timber, but we have to get the basics right and grow for quality. What is required to deliver quality crops?

- Policy makers ensuring that suitable land is made available with the correct level of incentive to produce quality crops;
- Researchers providing foresters with the correct tools;
- Foresters applying the results of research;
- Processors understanding the limitations for growers and
- Processors, foresters and researchers maintaining dialogue.

Links to further information

Timber Development Programme: www.forestry.gov.uk/forestry/INFD-7BMMPR

Scottish Forestry Strategy: www.forestry.gov.uk/forestry/infd-6aggzw

FCS Sustainable Construction: www.forestry.gov.uk/website/forestry.nsf/byunique/infd-6b2jfb

Timber Transport Forum: www.timbertransportforum.org.uk/Default.aspx?pid=1

Confederation of Forest Industries: www.confor.org.uk

James Jones & Sons Ltd: www.jamesjones.co.uk

Forest Research Timber Properties Programme: www.forestry.gov.uk/fr/HCOU-4U4JEQ

Edinburgh Napier Centre for Timber Engineering: www.cte.napier.ac.uk/

SIRT Project: www.cte.napier.ac.uk/SIRT/ or <http://woodresearch.blogspot.com/>