

Edition 3 / Spring 2016

*The Full*

£5

# CIRCLE

The journal of The Association of Scottish Hardwood Sawmillers

Comann Sàbhadairean Fiodha Chruaidh

Featuring...

## D.I.Y KILN

Written by Jonathan Robinson

## 40 YEARS OF SYCAMORE

Written by Gavin Munro...

## FORESTRY COMMISSION SCOTLAND

New masts for the Waverley...

## YARD VISIT TO MAKAR

Written by Neil Sutherland...



Forestry Commission Scotland  
Coimisean na Coilltearachd Alba



# The Full CIRCLE

The journal of The Association of Scottish Hardwood Sawmillers

## WELCOME TO ASHS THIRD JOURNAL...

In this, our third edition of the Full Circle you will find an interesting array of articles to entertain and stimulate your brain cells. The now usual news and dates for your diary pages from ASHS, the SFMA and SWWL, are filled with information on what's happening over the next six months, so make a note and don't miss out.

It is great to see Gavin Munro sharing some of his experiences from his distinguished career, read his '40 years of Sycamore' on pg 14. Another of our new writers, Stuart Clachan puts forward a good case for CNC machines on pg 34 and our regular yard visit is with Neil Sutherland from Makar, with an insight into a larger operational set up and views on modern architecture and building methods on pg 12.

Another first in this edition is a series of articles on buying a small woodland in Scotland from slightly different perspectives. See pgs 26 - 31. The narrative as the title suggests will, it is hoped, give our readers the insight and confidence to look for and buy a small woodland of their own. This series of articles is rounded off with a post referendum view of the small woodland market place from Fenning Wellstead on pg 32.

A machinery maker's news page has also been introduced, giving the larger manufacturers a platform to talk to their existing and future customers on a more personal level. In the interests of neutrality we invited a number of manufacturers to take part, we hope more will come on board in our next edition once they see the idea in print.

If you are looking to set up your own kiln, Jonathan Robinson has all the info you need on pg 36 and if you need further advice, he is not a difficult man to deal with. Derek Nelsons Economic contribution of the woodland sector on pg 22 suggests a very positive future for everyone involved in the industry at all levels, so clearly if you are reading this you are in the right industry!

Another fantastic effort from all contributors and of course Stephanie of Trilogy designs for the great design work, all helping to deliver an excellent industry standard journal. Please get in touch if you would like to contribute to the Winter Journal. Happy Reading!

All the best, Steve McLean

**ASHS Chairman**

**DEADLINE DATE FOR EDITION 4:**  
Monday 5th September 2016



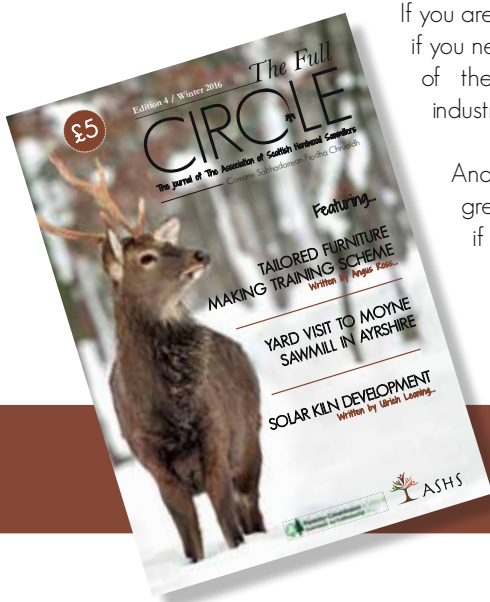
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New Journal.  
New Website.  
New Beginnings...

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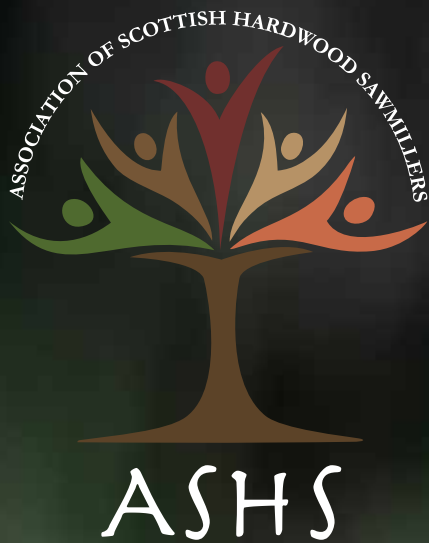
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# ASHS NEWS & MEETINGS October 2015 – April 2016



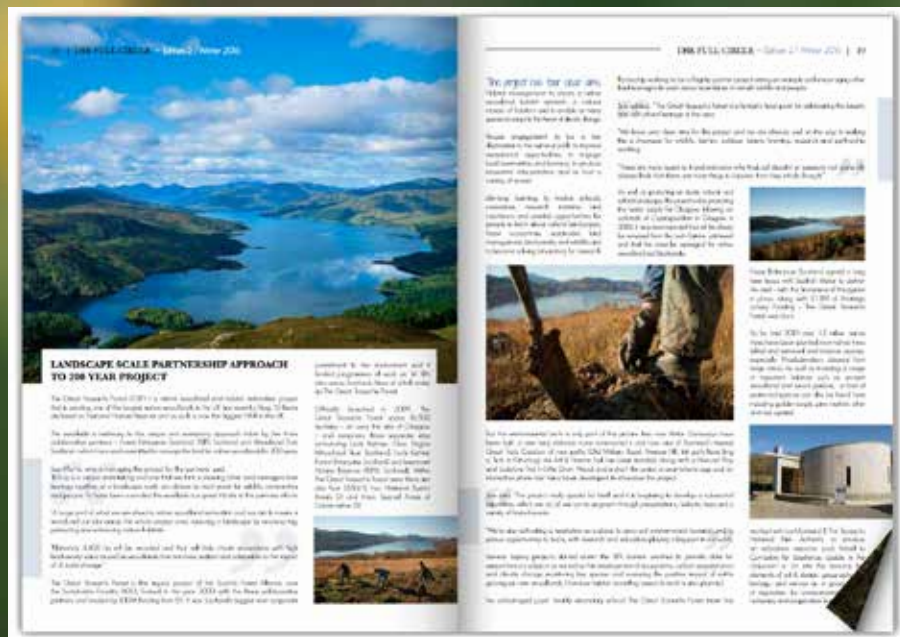
*The ASHS website and journal continue to develop as new ideas are introduced and fine tuned.*

Our most recent upgrade to the web site has been the addition of software to view the ASHS publications and journals in a page turning book form. We will be reworking the original journals to make all website addresses active at the touch of a mouse. The fully active journals and booklets will be all be available soon. Over the coming months we hope to update some of ASHS older information sheets and make them available through the same portal. If anyone is interested in

getting involved or has ideas on how to further develop the site please feel free to drop Nick or anyone on the board an email or come along to the next meeting and tell us in person.



We had a great day under blue skies in October 2015 for the seasoning and kilning workshop, hosted and led by Jim & Maggie Birley. It was well attended and well received, with requests for follow up courses in 2016 being made by some of those who attended. Two booklets have now been produced on the back of these courses which are available to read online, with printed hard copies available for £4 each delivered. It is anticipated that these booklets will be updated over the coming years building towards the ASHS definitive guide to sawing, seasoning and kilning in Scotland.



The journal is going from strength to strength and with our growing membership, now at 74, we have a good pool of writers with stories to share for future issues. Financially we are working towards the journal being self-funding through a combination of membership subs and advertising revenue by the end of 2017. It is looking however that we will reach this target by the end of 2016, a full year ahead of schedule! Ironically this is just as well as Derek Nelson from the Forestry Commission, informed the board at our last meeting that FCS funding will be phased out over the next twelve months. FCS funding has been a great help to ASHS over the past sixteen years. This has helped maintain the general running of ASHS over the years, covering Nick's administration costs and the general running of the website. Over the last year in particular we accessed additional funding which we used to run the kilning and sawing courses and produce their associated printed guides. The journal has also enjoyed funding for the first two editions. We are currently working on a strategy to counter this loss of revenue so as disappointing as it is, we anticipate finding a solution to our future funding problem.



The Annual General Meeting, hosted by Angus & Lorna Ross in Aberfeldy was a really enjoyable experience for the 22 who attended. We started with a tour of Angus's workshop which opened up some interesting discussions, some of which will lead to a series of articles in the Winter





## Poem to Spring

With the passing of the Winter  
weather gloom  
Rime, that archaic variation of Rhyme  
A crystalising early morning boon  
Blanketing the ground all around,  
Reflecting and refracting the rising sun's light,  
Through a blue sky, like water.  
Five months of wet, dark, wet, forgotten.  
Thankfully.

Graeme Murray (Scottish 2016)

Full Circle. We then enjoyed a really entertaining tour of Old Grantully Wood in the pouring rain with good chat from Rick Worrell. You can read Rick's story about the woodland on page 26. We all stayed at the Weem Hotel, a fantastic old building with a large log fire, which was extremely welcoming after a wet walk in the woods. We had a lot to get through at the AGM the minutes of which have been emailed to the membership for anyone who is interested. Unfortunately we were running late and decided to defer the Italy group talk to the next meeting. We enjoyed dinner all sitting at a very lively large table followed by a few beers, live music from a local blues band and some good company! We woke the next day to water almost lapping at the hotel door, followed by an exciting trip as we travelled in convoy along flooded, detoured roads to Dunkeld. We finished with a very informative guided walk with Andrew Barbour through the big tree trail followed by some lunch before heading home.



at Malcolm Mack's workshop at Cousland Midlothian. As Ulrich lives nearby and Malcolm has the space it was thought that this would be a good place to set up the first kiln. Malcolm and Ulrich will fund the balance of the set up costs. It is anticipated that this money is an investment with a return expected from the sale of the plans. You will be able to read about the setting up and test procedures being adopted and its general development in the winter 2016 Full Circle.

It has now been agreed that ASHS introduce a code of practice for its Sawmilling members, this will simply involve the introduction of agreed cutting thicknesses, moisture content, grading procedure etc. Jim Birley, as one of our most experienced sawers will be leading the team putting together the finer details. We will be consulting with the SFMA as well as possibly incorporating the FCS Making The Grade criteria. It is hoped that by introducing this, architects, builders and furniture makers not already using Scottish timber will see a developing continuity within the ASHS group and therefore be more inclined to use its members for their timber requirements. It will also lay the foundations for the development of the Italian Chair District business model implementation as this project moves forward.



So far we have been unable to access funding to develop Ulrich's solar kiln. At a recent meeting however the ASHS board have agreed to put £2,000 of ASHS funds towards the setting up of a test kiln

## ASHS DATES FOR DIARY...

### Friday 17th June

Provisional booking for ASHS Yard visit and meeting. Details TBC.

### Monday 5th September

Article deadline for the winter edition of The Full Circle.

### Friday 23rd September

Integrated Sawing / Kilning & 4 headed planning course  
Venue - Real Wood Studios, Monteviot Nurseries, Ancrum, Jedburgh, TD8 6TU  
Details will be emailed to members and posted on our face book page.  
Book early as it is expected to be busy!

### Friday 7th October

ASHS Annual General Meeting  
Venue and details to be confirmed

### Friday 14th October 2016

Publication of winter edition of The Full Circle



Written by,  
**Steve Mclean**  
ASHS Chairmain





*Local. Ethical. Sustainable.*

## SCOTTISH WORKING WOODS NEWS

Using local Scottish wood or woodland sourced produce, with a good sustainable story and want help to shout about it? Or are you looking for a substitute for FSC certification - SWW could well suffice, currently at zero cost! Then you are invited to consider using the Scottish Working Woods label to help you market your products. Find all the info and criteria for gaining & using the label at [www.scottishworkingwoods.org.uk](http://www.scottishworkingwoods.org.uk)

The new year has seen us busy with processing a flurry of applications for licence of the Scottish Working Woods Label, to such an extent that we seriously need to look at streamlining the joining process - for new applicants as well as ourselves! Work on this has already started with more to come soon. We are also looking at new member associations to join the scheme to add to ASHS, SFMA & SWHA



Written by,  
**Patrick Baxter**  
SWW Chairman

[www.lanarkshirehardwoods.co.uk](http://www.lanarkshirehardwoods.co.uk)





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## BECOME AN ASHS MEMBER

ASHS now has 4 levels of membership...

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### (NEW) AFFILIATED GROUP MEMBERS;

This covers existing groups like the Royal Forestry Society, The Argyll Woodland Group and other established groups

**RETIRED MEMBERS;** Those who have been full members for at least one year, can remain with us at a reduced cost.



Visit the website [www.ashs.co.uk](http://www.ashs.co.uk) and click **Join ASHS** for a list of reasons, why you should join us...



## SFMA NEWS AND ACTIVITIES

May 2016 - September 2016

This winter seems to have been quiet for SFMA, however looking at what has happened, that is far from the truth.

The After the Storm exhibition opened for applications in late November and selection will be complete by mid February, a little later than expected as a result of one of the selectors being sick. The selection process is confidential and feedback is offered to those who have not been selected, something done by RBGE who are promoting the exhibition. I notice that generally the opportunity to exhibit furniture in a selective environment, unlike art exhibitions, is limited and so makers and designers are probably less practised at applying, which makes the feedback most valuable.

It has been an interesting project so far from an organisational point of view. A wide range of interested parties coming from different points of view all working together to a common purpose. Environmentalists, ecologists, furniture makers, wood lovers, public servants, artists, members of the disabled community, it feels like a big challenge, but so far it is moving forward steadily. There is an article about the show on page 9. The Forestry



Commission invited us to mount a small exhibition at Holyrood in late January. This was at the end of year review presented by Jo O'Hara head of FCS, at which the activities of the year are celebrated. The SFMA were mentioned as an example of how FCS are supportive of a wide variety of industries, including leisure and creative endeavour as well as the major bulk of their work in commercial softwoods. Five members of SFMA showed pieces and they came from far and wide. Furthest



## Scottish Furniture Makers Association

and perhaps newest was Keith Coghill from Thurso. The other exhibitors were Frazer Reid from Fife, Tom Cooper and Tom Footitt from Edinburgh and me from Aberdeenshire. The photos below shows Frazer with his wooden bowtie and Keith with his thumbs enjoying the evening, plus an overall view of the stand.



The website is progressing and its launch is planned for April. This will be in two phases, one by attendees of the AGM who will have a go at loading their own page and viewing the website for themselves. It will then be available for the whole SFMA membership to become familiar with the loading mechanism. It will go fully live on a specific date, hopefully early April, at which point the old website will be taken off line. Feedback from the committee and at the AGM has been good and the site is more like something we would expect in the 21st Century. Thanks to the Forestry Commission for supporting us on the project.

SFMA held its AGM on Friday 12th February, and amongst the matters discussed were the website, membership, advertising, exhibition spaces, SWW, response to The Full Circle, plus of course electing a new committee. FCS presented a few words of how SFMA fits into their portfolio and reminded us that our own publicity also gives FCS a chance to raise its profile in the area we practise. The new SFMA committee is now chaired by Euan MacKinnon

Alan Dalgety, Chris Scotland and Anna Nichols are preparing our own 2016 exhibition, which will be held in the John Hope Gateway, Real Life Studio. This space is more intimate than the Gallery and will host 'Rooms for Improvement', a show of furniture grouped by room function rather than individual maker. It opens on Friday 14th October and runs until 6th November. We are hoping to show work by 24 to 28 makers and the initial response from members has been good. It is an open entry show so if you are interested in exhibiting, you have to be a member of SFMA and let Alan [acdalgety@yahoo.co.uk](mailto:acdalgety@yahoo.co.uk) know.

SFMA Holyrood 27/01/16

and he is supported by an enthusiastic and committed group of committee members.

As I stand down, I'd like to thank Steve McLean for reinvigorating the link between SFMA and ASHS, Derek Nelson of FCS for standing by us, all the people in SFMA who have volunteered to help with accounts, exhibitions, advertising, membership administration and opinions to keep this voluntary organisation running.



Written by,  
**Jonathan Rose**  
SFMA Chairman

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



## AFTER THE STORM

Regeneration and new Life in the Aftermath of Cyclone Andrea



*'After the Storm'* is a project conceived by Ian Edwards of RBGE, as a way of making use of timber felled by Cyclone Andrea. Since it was first suggested as a furniture exhibition, it has grown into something much bigger and become an example of the opportunities that timber can present. Like trees, real ideas can take time to develop.

Ian's blog below outlines the project's current status and is here to tempt visitors to the exhibition and events between December 2016 and May 2017.

11th Feb 2016 <http://stories.rbge.org.uk/archives/18921>

The After the Storm journey began on 3 January 2012 when Cyclone Andrea (described as a once in a lifetime event) swept across Scotland with winds reaching 100mph, blowing down thousands of trees in its wake. Some forests were left flattened and the Royal Botanic Garden Edinburgh lost over 40 specimen trees. The vocabulary that was used to describe the aftermath of Andrea was taken directly from the language of war and few people have anything positive to say about this traumatic event.

Then in 2014, at the preview of the annual Scottish Furniture Makers Association (SFMA) exhibition at the RBGE a conversation began on how the windblown trees from the storm might be used to make pieces for an exhibition which highlighted the beauty of Scottish-grown timber and the talent and craftsmanship among our Scottish furniture makers and designers. As plans for a joint RBGE/SFMA exhibition developed the focus shifted to other positive outcomes emerging from the great storm. Conversations with ecologists revealed how storms are essential for rejuvenating woodlands, creating gaps for regeneration and encouraging greater diversity of species and structure, building resilience and ultimately a healthier ecosystem.



Sycamore / Maple

Cedar



With new partners the Forestry Commission and Edinburgh College of Art we began to explore ways of celebrating the role of storms which has led us, perhaps inevitably, to consider parallels with the human condition. People respond to traumatic changes in their life in the same way as woods: the pattern of devastation, recovery, regeneration and resilience is a familiar one. Our explorations have also considered the role diversity plays in post-traumatic recovery in both forests and people.

As these ideas evolved, the partners, which now also included the Scottish Poetry Library, began to seek ways in which they could engage with artists and audiences to create positive and inspirational outcomes. The original proposal of an exhibition of furniture from storm-salvaged timbers has provided a starting point for creative ideas for community engagement which continue to grow and develop through the outreach of all the partners involved. One tangible outcome is a publication, providing a narrative on which to hang the project and documentation of explorations around the theme.

If you are interested in contributing in any way to this Project as it develops over the next 18 months please contact Ian at [i.edwards@rbge.org.uk](mailto:i.edwards@rbge.org.uk) or follow him on twitter @idedwards. This is a good opportunity to get involved in something with a strong, inspirational message relevant to our time.

Here are some smiling faces inspecting the butts at the RBGE nursery. The exhibition opens on Saturday 3rd December 2016 in the John Hope Gateway Gallery, Arboretum Place.



Written by,  
**Jonathan Rose**  
SFMA Chairman



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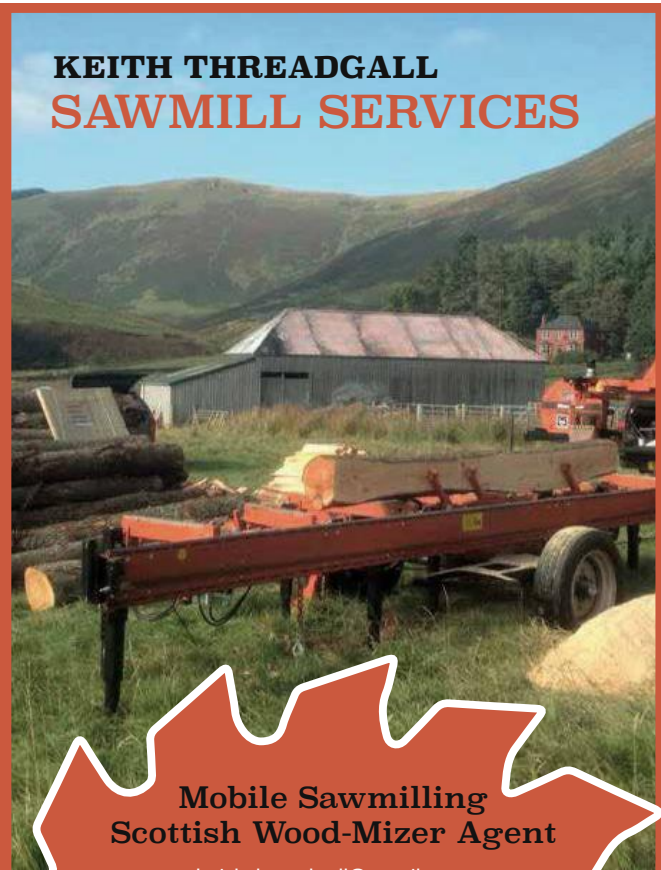
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## MAKAR – House delivery for a better Scotland

MAKAR exists to deliver wonderful buildings and places to our customers. The organization's methods have been evolving over the last 25 years. MAKAR itself was established in 2002 to offer construction support to my design consultancy, Neil Sutherland Architects (NSA) LLP. In the early days it operated as a construction management organization, without physical or employee resources. In late 2003 we moved to Clachandreggy, a 10 acre smallholding on the western edge of Inverness, and began a steady and continued growth in both businesses. In 2002, it was just me and one assistant and we now have a team of around 30 people. In 2013, NSA was formerly incorporated into MAKAR, so we now operate as one stronger organization.

The work all began, however, in the early 1990's when I was based in Glenelg. There I was involved in designing and building numerous projects in the western Highlands. During this time we developed our understanding of the utilization of local timber. In about 1996, for example, we did little else apart from cut, dry, machine and supply timber products such as flooring and large section framing. In remote rural locations one has to be resourceful and pragmatic, particularly if your goal includes making a step change in the quality of buildings. Quality for us has always meant ecological, economic and equitable approaches to living and working environments. We have not invented the healthy reprioritization of better places in the north of Scotland, but we have been here to respond to and deliver the desired outcomes/improvements.

In 1999, my wife, three young boys and I moved to Inverness. I was offered a part time teaching position at the School of Architecture in Aberdeen, and we had some larger design opportunities such as the offices for Natural Power Consultants in Dumfries and Galloway.

It has always been and remains difficult to find construction businesses motivated by the values of sustainable design, construction and place-making. We understood early on that if one was intent on avoiding the compromise of dealing with others who don't share your values it would be necessary to take a different approach; if things are not taking the form you judge is necessary in the delivery of architecture as in life its necessary to try an altered approach.

*Housing in this country is in a state of crisis; a crisis of quality, quantity and aspiration.*

Overly dependent on speculative delivery, the housing developer business model is interested in increasing the value of land and has little interest in the quality of homes. Developers, prone to boom and bust macro economic cycles, don't do innovation. Influenced fundamentally by this context, the house building construction sector generally suffers from poor investment and is continually underachieving. Yet as a society we are fundamentally dependent on housing and other buildings for our collective wellbeing and in Europe they contribute directly or indirectly to 50% of total greenhouse emissions.

We operate in the relatively small self-build part of the market representing perhaps 15% of Scotland's new house completions per annum. In contrast to volume house builders we are in the business of delivering high quality homes to individuals and families with a deep interest in the overall quality of the outcome and the experience.

Misconceptions are common in relation to the different approaches we have evolved, such as Off-site construction. It is suggested, for instance, that such practices will contribute to the continued deskilling of workers, tie up investment in machinery rather than people and lead to repetitive, boring buildings and bored workers. Such misconceptions are similar to the large misunderstandings as to the forces shaping our built environment and what needs to change to allow better outcomes. For instance, the "bigger is better and cheaper" fable in relation to volume housing, or at the other extreme the only way to acquire an alternative 'eco-house' is by a somewhat elitist neo intellectual architectural profession engaging whacky individuals and large budgets.

The architectural profession seems stuck in the superstitious belief that design alone is the root of all future solutions in housing. A recent example: Rural housing on islands can and should be solved by way of yet another design competition. The inherently wasteful fact that fifty hopeful architectural practices contributing perhaps around two thousand pounds value each (in time inputs) in solving the theoretical £100k house challenge on some distant island is bizarrely lost in the collective enthusiasm. More disturbing is the fact that the real challenges of island delivery; lack of access to land, an increasing regulatory burden, lack of financial options for effective and economic house delivery systems, are left unaddressed.





*Our experience is quite different from these extreme and unhelpful positions.*

The key to our own approach is the integration of what are normally disparate elements; we control the whole process from project concept through design development including detailed technical and cost information for sub assembly manufacture, site assembly and management to completion. The MAKAR team is responsible for entire project delivery and our customers receive certainty over design quality, workmanship, program and cost. Customised lean production processes, involving repeat element relationships and endless patterns, anticipate variation in manufacture along with production efficiencies. Random innovation is avoided in favour of an empirical evolutionary process; experience informing future refinement and practice.

Variation of task and outcome guarantee a skilled team engaged in meaningful work. Our workshop facilities, utilized 16 hours per day, on value adding manufacture guarantee good working conditions and high wages. Our average salary aims for that level only achieved by only 40% of Scot's - £25k across office, workshop and site.

Well-made buildings, which align design and actual performance, are the result of excellent making practices; so much of air tightness, for example, is down to focus and proficiency of those undertaking the assembly operations.

At MAKAR we can undertake the design, manufacture and erection of around fifteen buildings per year in a mix of private homes and houses commissioned by the likes of the Highlands Small Communities Housing Trust. With cost benchmarks squeezed as they are with affordable housing it would not be possible for us to deliver Building Regulation Silver Active standard units, as we are doing, if we did not employ our integrated off-site processes.



In recent years we have worked closely with higher education institutions such as Edinburgh Napier's Centre for Off-site Construction and Innovative Structures. It's important to recognize that regional timber product development needs to progress in association with its use, and I find it alarming that some regard the uptake of Cross Laminated Timber and Dowel-Lam (Scottish version of Brettstapel) without a similar uptake in progressive methods of use and delivery. In our work we recognise that the means are closely related to the ends.

We have recently completed a whole house carbon measurement study with the University of East Anglia. We felt it was time to more fully understand the embodied and other carbon issues surrounding project delivery. The results indicated that when carbon sequestration was taken into account, a small MAKAR house was taking twelve tonnes of carbon out of the biosphere in its delivery, confirming our carbon negative approach. We now aim to have this work further inform our own decision-making, helping our customers and others developing policy in this area to be better informed.

The context of our dysfunctional housing sector in Scotland is a draconian regulatory system and a largely disengaged public. If we are to address the policy and economic headwinds, which show little sign of abating, we need to reach out cooperatively and make possible alternative approaches that capture enlightened public opinion, support and reprioritisation. The wide ranging, economic, social and community advantages of a locally sourced and contemporary manufacture approach to house delivery is not adequately recognized or rewarded for the range of environmental and public goods it delivers. Until these challenges are addressed, including the development supportive policy frameworks and general investment in progressive best practice, mainstreaming will not happen and as a society we will receive the housing we deserve.



Written by,  
**Neil Sutherland**  
Owner and Managing Director MAKAR  
[www.makar.co.uk](http://www.makar.co.uk)



## FORTY YEARS OF SYCAMORE

*I first became interested in sycamore as a particular species in 1976.*

This was my first foray into the private forestry trade after leaving the then Forestry Commission Education and Training Branch, and my move from N. Wales to Peebles in the Scottish Borders.

It was recognised by the private trade, that merchants would need to promote other species other than Elm, the demise of which, due to Dutch Elm disease, had left a huge gap in the market, previously dominated by oak and elm. A major market for elm had been Ercol, makers of fine elm furniture, who had moved on to the purchase of other species,

At this time, sycamore was very much regarded by many forestry organisations as an alien species, a non-native, an aggressive and unwanted weed, and totally unwanted in British Forestry.

*How wrong they were.*

Some unenlightened and ignorant forestry managers even went to the extent of heavy felling in mixed woodlands in an attempt to turn mixed woodlands of oak, ash and sycamore into pure oak plantations. They were very swiftly proved wrong by the proliferation of sycamore regrowth and natural regeneration of the sycamore.

Sycamore butts, and second lengths for furniture and second quality planking respectively, were very popular and a keen market for export overseas burgeoned. Buyers from Austria, Germany and Italy arrived in the UK in great numbers (mostly buying in hoppus feet) during the period after leaf-fall, November to Feb/ March the export trade attracted some very high prices, surpassing those of good oak butts.

By the mid-eighties, there were no longer any veneer manufacturers based in the UK, and in order to procure the best prices for locally produced butts of any species, it meant that an export market for these had to be found. Quality butts need to be winter felled, and this is an absolute requirement with whitewoods.

*The major problem with hardwood timber production in the UK is the shooting market.*

This market is a major revenue source for private estates, and syndicated shoots and keepers rule the roost. (No pun intended) This means that contractors are generally not allowed into the vast number of private estates until 2nd. February, at which time most European buyers have filled their winter order books. In the trade, we all suspected that they all got on the same aeroplane to go home, leaving the U.K. a very small window to market their good sycamore. The more enlightened of us could obviate this problem by inviting an exporter to our woods and promising fast felling and extraction during Feb/March, then guaranteeing a few wagon loads.







- Sycamore Seeds

- Sycamore Flower



The market for figured sycamore (or fiddle-back) for top quality musical instruments and fine furniture is truly phenomenal, very often reaching £2- 3 thousand pounds per cubic metre, it still remains so, albeit to a lesser extent (in volume terms) since app 2008.

In 2006 I became involved in a breeding programme for The British and Irish Hardwood Timber Project. This organisation, now known as the Future Trees Trust, are running a breeding programme which attempts to enhance the quality of planting stock with the set-up of gene pools made up from quality stems throughout the UK and Ireland.

*These people asked me to shoot trees!! But that is another story.*



Written by,  
Gavin Munro



## DIY KILN

*Put simply, kiln drying your sawn timber is the easiest and most cost effective way of adding value to your product.*

At Robinson Sawmilling and Tree Works, based just outside Edinburgh, we do a variety of work, including hardwood and softwood milling and primarily elm harvesting. We have been milling for 7 years now, and in that time we've gone from chainsaw milling back garden trees to cutting over 600 tonnes in the past year. Kiln drying hardwoods has been a big part of that success.

There are dozens of different kiln set ups and a thousand different ways of utilising them. Rather than trying to cover a broad spectrum in one short article (there are after all numerous books published on the topic), I shall focus on the construction and use of a budget DIY kiln.

For the past 6 years I have been running the same kiln, and whilst I've made a few alterations (most notably the change from dehumidifier to heat recovery unit), not much has changed. I have found it to be a reliable way to dry timber from a variety of different start points, (in terms of moisture content) in 5-10 weeks.

It is perhaps easiest to start with a shopping list. In order to keep costs down when constructing mine, much of the internal equipment was purchased 2nd hand. After 6 years of fairly heavy use, it is all still working.

Firstly, you need an insulated lorry body. This would be an 18-20ft long container from a 14-18 tonne fridge lorry. They can be tricky to track down and finding them in good condition for a reasonable price is challenging. Start with commercial hire fleets and vehicle breakers. Target price would be around £600. In terms of specification, barn doors are tougher and therefore preferable to a roller shutter door. The refrigeration unit will most likely be removed and the hole will need to be patched.

Secondly, you will need heaters. I have found that the most reliable form of heating comes from a simple oil filled domestic radiator. They aren't cheap to run, but they are fairly bulletproof. For an 18ft container, 4kw is sufficient and these can easily be bought used if required. For the heaters, it is best to operate them with a plug in thermostat.

Thirdly, you will need to buy a heat recovery unit with an air flow of approximately 200 cubic metres an hour. Mine was used and cost about £200. Alongside this, you will need lengths of flexible 100mm ducting, which can be purchased cheaply.

You will also need a heavy duty fan. I have found from experience that carpet dryers (centrifugal fans) are very robust, inexpensive and provide a strong, directed air flow.

Finally, you will need a cheapish weather station. This is so that you can place the sensor in the kiln and know what the temperature and humidity are doing without having to open the doors.

All of these elements of the kiln should amount to less than £1000. Onto the set up:

When siting the kiln, choose somewhere with plenty of space in front, as in an ideal world you want to be loading the kiln with your timber on a track and trolley system. This hugely reduces the handling of the boards and speeds up the process of loading. It is however something I have sadly never had space for so is not something I can advise on. Otherwise make sure that the box is very well supported from underneath. There could be 8 tonnes of timber going into it green, and it doesn't matter how strong the box is, it will still deform to some degree. Bear in mind that any deviation from straight in the floor is mirrored in the timber, resulting in boards that are not flat.



Mount the heat recovery unit just under the roof close to the far end. Two pipes go outside and you want those to be as short as possible (to avoid condensation forming in the outflow pipe as the air is heavy with moisture and has been cooled by the air coming in). Pipe the air inflow outlet to the other end of the box and have the air outflow inlet right at the heat recovery unit. Confusing as it sounds, it's quite simple in practice. Basically, you want the dry air piped to one end, and the wet air collected at the other. Your heat recovery unit comes with a condensate pipe - pipe that outside, ensuring that the angle of the unit is such that the condensate flows to the corner with the outlet pipe.

The best place for the heaters is on the floor, directly adjacent to the fan.

Place the carpet drying fan in the middle of the box on the (for my kilns, left) side at ground level with the outlet facing up. I have a small plywood splitter directly above the fan directing the air to all corners of the box.

Screw bearers (I used 38x38mm) to the floor at 18 inch intervals. Ensure that they are accurate as they are the bearers you will use as reference for your stacking. To aid accurate stacking as the stack gets higher, I have lines pinned onto the wall to indicate exactly where the bearers are on the floor. You need to have perfectly vertical sticker lines for straight timber. It is something that I am quite particular about.

Put your sensor for your weather station on the opposite side of the box to the fan, halfway up the wall.

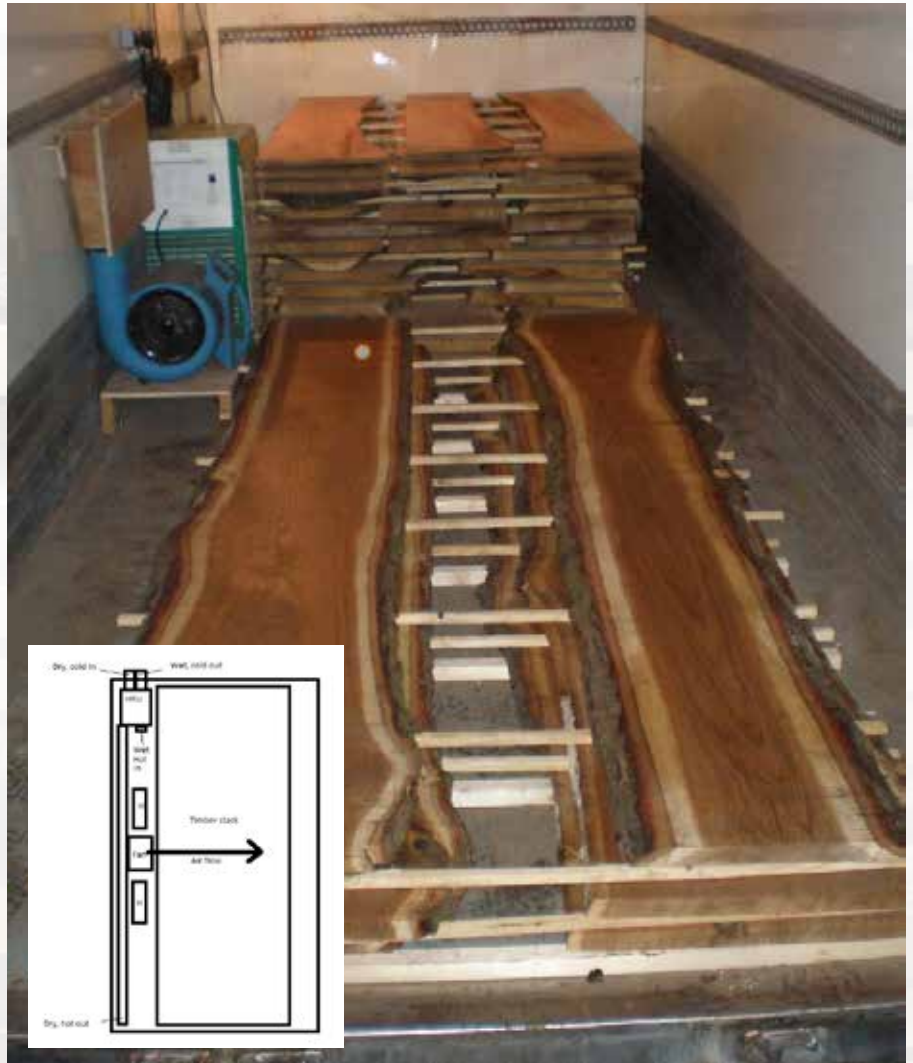


## You now have your kiln built and ready to go.

At this point it is worth saying something about the timber going into the kiln. I started off with very little storage space for air drying and kilned a lot from green. This was in line with the guidance from Arrowsmith (a now defunct kiln maker) and I had much success. That being said, dry (by which I mean sub 30% moisture content) timber will always kiln dry better and will take a lot less time (much smaller electricity bill). It's also worth remembering that faults only get worse in a kiln and that the cost of drying is just the same for poor quality timber as good quality. From that, I would say that seeking the best quality timber to cut and dry will save you much heart ache as there is nothing worse than your kiln ruining boards!

Stacking your timber in the kiln. As previously mentioned, accurate sticking is crucial. Don't cut corners on this. When stacking, stack from floor to 1ft from the ceiling. Leave an unobstructed 1ft gap on the right side (far side from the fan) and 18 inches on the near side, where your electrical control equipment is. You would be surprised how often you might want access. 1ft is too narrow for most whilst 18 inches is OK. This will give you a 5ft wide stack if using a lorry back. Make sure when stacking that the sides of the stack are as straight as possible, with no stickers protruding past the edge of the stack and that all stickers and timber are supported. It's much better to have unsupported stickers in the middle of the stack than unsupported ends of stickers. You would be amazed how easily timber deforms if given the opportunity. Try to fill the kiln end to end as well, leaving no gaps at either end. My box is 18ft - I usually have two 9ft stacks for simplicity.

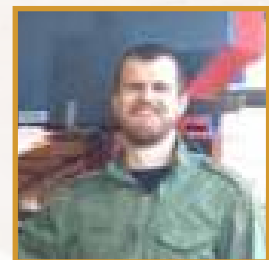
Set the thermostat for 30 celcius and switch everything on. For the first couple of weeks of the cycle, keep the temperature lower to ease the timber in the cycle. Once the indicated humidity starts to drop (it will usually start at 83% and sit there for a few weeks), nip back into the kiln and change the thermostat setting to 36 celcius. This will take you to the final stage of the cycle, and once the humidity is showing less than 30%, increase the temperature to 40C. Final relative humidity would be around 20%, at which point a kiln of 1.5" stock will



be sat at about 8% moisture content. For thicker stock, a slightly lower relative humidity (say 15-18%) is better as it can be stubborn to dry. When testing the moisture content of your timber, it is important to take multiple readings from boards in different parts of the kiln, ensuring that you are using a hammer probe meter, testing the middle of boards rather than the edges. This will give you the best idea of whether your timber is dry. In my experience, this type of kiln produces a consistent moisture content throughout the batch and different moisture contents are as a result of mixing different species and thicknesses.

\* Timber storage - just make sure that your timber storage box is either heated or dehumidified. To figure out what moisture content your timber will settle at, type in equilibrium moisture content calculator into google, and type in your temperature and RH. You want to control the environment so that your EMC is less than 12%.

Kiln drying timber is relatively simple and need not cost a fortune to get going with. For small sawmills looking to expand their customer base and sales, I would say that the operation of a kiln is crucial. Many customers do not have the capability or space to dry their own timber, even if it does save them money in the long term.



Written by,  
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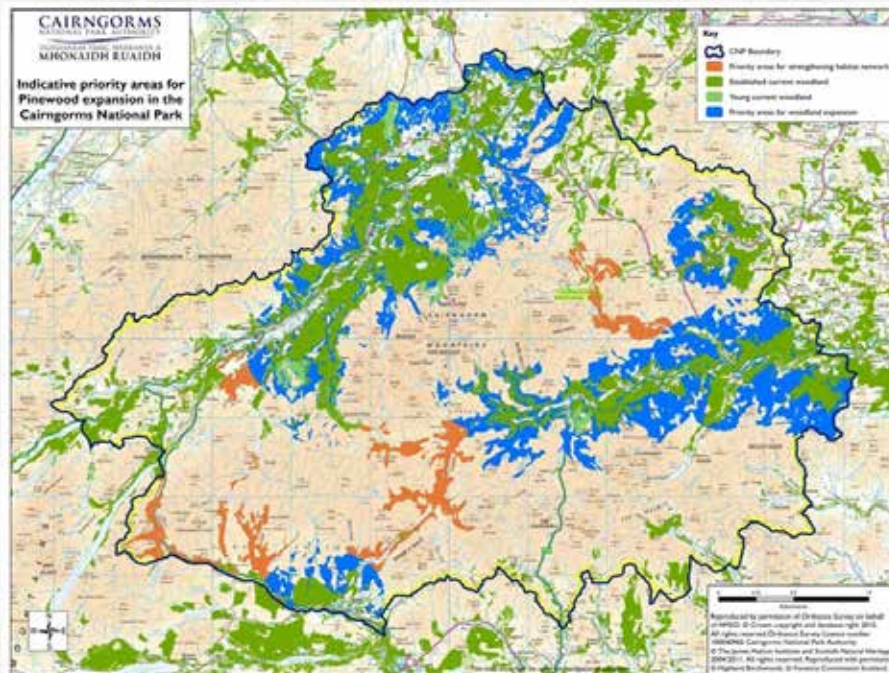


## A NEW ERA OF OPPORTUNITY IN THE CAIRNGORMS NATIONAL PARK

The Cairngorms National Park (CNP) is a *'living working landscape'*. Not only is it important for wildlife, species conservation and landscape, it is home to nearly 20,000 people. This is reflected in the National Park Aims which seek to look after everything that's special here, including people.

Readers of this journal will no doubt agree that it is a simple fact that we need more trees, but not everyone does. The landscape and habitats we have today are fantastic; it's hard to imagine how they could be any better, so why would anyone want to change things? Beneath all of the vibrant beauty and diverse landscapes, there are always complex arguments and dilemmas about future landuse; none more compelling than woodland expansion. There has long been a strong body of people calling for reforestation in Scotland; this has been backed up in recent years by public policy through e.g. the Scottish Forestry Strategy with its target of increasing the area of woodland across Scotland by 10,000 ha per year. This target has proved difficult to reach so in the CNP we have sought to give a helping hand by securing an added incentive for woodland creation.

The Scottish Forestry Grant Scheme is up and running and in the National Park there is the added bonus of a 12.5% premium for woodland creation in 'target areas'. These areas are intended to increase the habitat network of native Pinewoods, and are partly driven by an urgent need to increase habitat for the struggling Capercaille. On eligible sites, the increased premium can be applied to the following woodland creation options: Diverse Conifer (predominantly Scots pine), Native Scots Pine, Native Upland Birch, Native Broadleaves and Native Low-density Broadleaves.



The blue areas on this map are eligible for a 12.5% increase in payment through the Scottish Forestry Grant for Woodland Creation.

It is good news that in the CNP we have the added financial incentive. What we hope this will mean is that it will be easier to encourage landowners to seriously consider woodland creation for all the many good reasons that will be familiar to you. It is also good news that the Forestry Grant incentive includes payment for broadleaves and low-density broadleaves. The greater the diversity of forest types and tree species the better. We hope this will lead to many more areas of broadleaf woodland that in the long term will provide a vital resource for local communities: not least for firewood, crafts, wildlife, recreation and hopefully timber.



Volunteer planting aspen to supplement regenerating pine



Granny pines in Abernethy

The integration of woodland management alongside sport and agriculture is an important objective in the CNP. Thankfully the days of the blanket forest monoculture are long-gone, but there is still a perception amongst some that forestry threatens landscape and other landuse. If done right, woodland creation will enhance landscape and habitats, benefit wildlife and increase the diversity of options open to future rural businesses. At the moment about 40% of the National Park area (nearly 2,000km<sup>2</sup>) is managed as open moorland for agriculture, deer stalking and grouse shooting. Within that area there is a massive scope for creating pockets of woodland in key areas, at the very least in gullies, along rivers and linking areas of existing woodland.



Treeline woodland and montane scrub are almost non-existent habitats across Scotland but there is plenty of evidence to indicate that it would once have been right across the country on almost every treeline. Hills devoid of trees are very much the norm in the UK and yet that wasn't always the case and doesn't have to be any more. Restoring the missing montane scrub and woodland habitats to our hills should not be viewed as a threat; it is a gift to future generations that will increase habitat diversity and options for future management (including field sports).

The National Park Authority is just beginning the process of defining the key issues that need to be considered for the next National Park Plan (2018-2023). It is likely that landscape scale conservation will continue to be a major focus, with woodland expansion integrated within moorland and sporting management being a strong theme. Diverse habitats and land use today means more options for future generations.

Recent flooding in a number of areas in the National Park have been devastating (especially the River Dee) sparking a lot of debate about 'natural flood management'. Undoubtedly Catchment Management Partnerships will play a key role in informing and guiding any natural flood management initiatives, with woodland creation being a key component.

The recently formed East Cairngorms Moorland Partnership is committed to achieving greater habitat diversity across six estates covering 90,000ha. Their habitat objectives include the expansion of woodland and scrub in key locations. There are already very significant areas of woodland expansion taking place in the CNP e.g. Mar Lodge, Glenfeshie, Killiehuntly, Abernethy, Kinveachy and Rothiemurchus. Those pursued without fencing and relying on concentrated deer culls have been controversial at times, but they have demonstrated very effectively that with a commitment to deer management woodland can be restored on a grand scale. Deer Management Groups in the CNP and throughout Scotland now have to prove that they are acting in the public interest. All these recent developments are contributing towards a situation in which deer management and woodland creation are becoming more mutually compatible.

"Natural flood management" taking place naturally on Rothiemurchus Estate.



Spectacular regrowth in Glenfeshie following deer reductions



"Natural flood management" taking place naturally on Rothiemurchus Estate.

***For those readers who like numbers, the Native Woodland Survey of Scotland (FCS, 2014) provides some useful statistics to ponder:***

- The current area of native woodland in the CNP is 42,947ha, which is 69% of the total woodland area or 9.5% of the total land area of the CNP. (This indicates the total area of all woodland in the CNP is 62,242 ha, only 14% of the National Park area, considerably less than previous estimates.)
- Native woodland in the CNP is predominantly made up of native pinewoods (67%) and upland birchwoods (20%). Other woods mainly include mixes of ash, oak, aspen and blackthorn.
- 73% of Native woods in the CNP have 'low' or 'medium' herbivore impact assessment and measures used in the survey indicate that 63% of all native woodland in the CNP is in good overall health for biodiversity.

There are two things to take from the above: 1. with such a modest area of the National Park being currently under woodland there is considerable scope for increase without any serious implications for other land use and 2. If the measures of herbivore impacts and biodiversity health can be relied upon there are good reasons to be optimistic.

Sticking with the optimistic theme, I will end with a small personal anecdote... I live deep within the heart of the native pinewoods of Abernethy Forest. At this time of year I awake

every morning to the barking alarms calls of roe deer. In the autumn the deep guttural bellow of the rutting red deer echoes through the huge pine trees around my house. This is how it should be. Ten years ago or more, when the RSPB upped their deer cull to allow the natural regeneration of the pinewoods there was an outcry with people locally and Nationally using words like 'massacre' to describe the deer cull. Today the forest edge is expanding and yet deep within the forest the deer are thriving and we have something akin to harmony.



Written by  
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## NEW MASTS FOR THE WAVERLEY PADDLE STEAMER

For Forest Enterprise Scotland, orders for ships masts are even from a niche perspective something unusual, so when a request to supply two Douglas Fir masts for the Waverley Paddle Steamer was received, it came as somewhat of a challenge. In meeting this order, it appeared the immediate problem would be to locate suitable logs given scale of the National Forest Estate and availability of trees, too much choice perhaps!

The Waverley is the world's last ocean going paddle steamer and has become an icon of Scottish maritime history with the steamer making regular journeys between Glasgow, Largs, Rothesay, Dunoon, Campbeltown and on occasion more distant ports.

Tasked with procuring and shaping the masts was Mackay's of Arbroath who are a family run business and the town's last boat yard with a wealth of experience in working on traditional and modern craft.

The specification from Mackay's was to supply 16.5 meter and 14.5 meter logs with a 300mm base and 150mm top, in order to achieve these specifications, larger logs would have to be sourced.



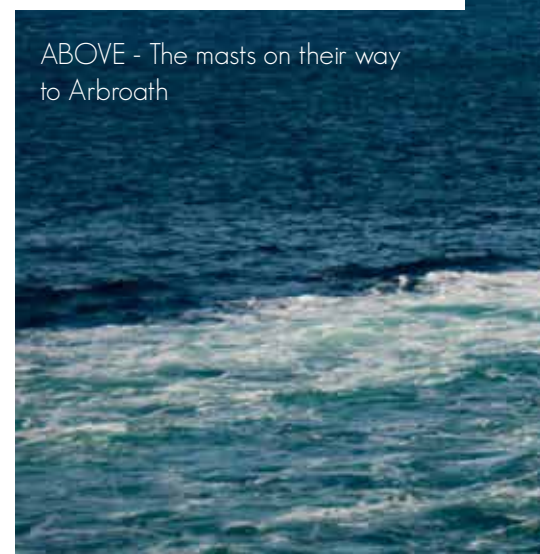
Selection of mast trees at Faskally



Following a series of enquiries to colleagues within Forest Enterprise, the solution to finding suitable trees came from thinning work at Faskally near Pitlochry in Tay Forest District. The forest at Faskally has a long history of continuous cover forestry and as a result of its management history, there are many quality trees present which are suitable for a range of niche applications.

Even with a good choice of trees, it took some time to select candidate trees and to assist with this process, Forfar based sawmiller Charlie Riddell offered his expert advice to local foresters Mark Brazendale and Gordon Robertson in this matter. In the end, three trees were deemed suitable and were marked for felling, an extra tree was selected on the off chance of any damage occurring during harvesting and extraction. Tasked with the harvesting element of the operation was forestry contractor Willie Shorthouse who used a forestry adapted tractor to skid the felled trees to roadside. Once the logs were at roadside, one log was rejected on account of a slight sweep in its stem, this defect was not

ABOVE - The masts on their way to Arbroath







A mast nearing completion at Mackay's boatyard



\*The Waverley

apparent when the tree was viewed standing and is a factor which must be considered when selecting trees for use as masts.

A further set of challenges to the mast project were faced in the transportation of the logs to Arbroath. The logs which were cut to 17 meters to give the boat yard room to adjust their tolerances and so ruled out being moved by conventional timber lorry given the length rather than volume of the logs. The services of specialist haulier Geddes transport were engaged to transport the logs which required some very skilled driving especially on the final leg of the journey in Arbroath where some narrow sections of road lead down to the boatyard.

The mast project has been very rewarding in seeing two logs from the National Forest Estate being transformed into masts for such a famous ship as the Waverley. A reflection of the Waverley's popularity has been a wave of media interest in the masts which is a fitting tribute to those who have been involved in each stage of this unfolding project. It is expected that the new masts will be fitted to Waverley once she has completed her 2016 season, there is already growing interest in this next part of the ships story.



Written by,  
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## FORESTRY COMMISSION

### The Economic Contribution of The Forestry Sector in Scotland



This report\* which was commissioned by FC Scotland and published late last year presented some notable figures and resulted in good media coverage for the sector. A contribution of £1,022m to Scotland's Gross Value Added from forestry, timber processing, recreation and tourism, deer and game with total employment in the sector of 28,127 full time equivalent jobs with some 80% from forestry and timber processing. A key supporting comment was that:

***“Timber harvesting and processing are particularly important in generating value added and this contribution will increase with increasing output of the forest estate in the future”.***

The growth in both of these figures is on the back of a sustained increase in the production of softwoods from Scottish forests, largely in production from privately owned forests. The trend in timber biological availability over the next 20 years is an upward one, though exchange rate fluctuations and other market related activities can have a marked impact on the actual volumes being brought to roadside in any one year.

Timber forecasts of biological availability are always a useful starting point based on age class, growth rates and ages of maximum mean annual increment, but it must be noted that it is NOT a true forecast of actual production – that requires an intent of an owner to fell and bring the timber to market. Wind plays an important part in the decision making process regarding timing of conifer felling, but for broadleaves growing on better soils a much broader range of factors influence the decision making process, not all financial. In the Forestry Commission's 50 year forecast of hardwood timber availability (April, 2014) we should theoretically see production rise steadily:

	2013-16	2017-21	2022-26	2027-31
<b>TOTAL (M3/YEAR)</b>	92,000	148,000	203,000	243,000
<b>PRIVATE SECTOR</b>	83,000	139,000	193,000	233,000
<b>TOTAL OAK</b>	6,000	10,000	20,000	14,000
<b>TOTAL BIRCH</b>	37,000	65,000	86,000	101,000

[\*see the Forest Industries section of <http://scotland.forestry.gov.uk/> ]

Another market which is having a big impact on the small scale processing sector is the biomass/firewood one, both large scale chip & pellet markets and the more local split and dried log firewood market. Much of the growth in birch volume will come directly associated with the felling of second or third generation conifer forests where it has been a self sown part of the crop, and fits in here well.

#### ***So what to take from all this?***

- You want and continue to be able to sell oak, so will be pleased to see a slow growth in its potential availability, but competition for the quality logs brought to market from traditional forestry sources will remain high.



- The growth in the size of the firewood market has resulted in higher prices being commanded for small diameter and poorer quality log material. This will increasingly absorb the logs you might want to mill, but should soak up the beech, birch, sycamore and ash that are more challenging to market.
- Forest Enterprise is seeking to manage its broadleaved resource, but is also seeking ways to simplify its hardwood and firewood timber sales. Early and regular contact with Douglas Halliday is therefore vital if you wish to learn of and bid for any parcels being brought to market.
- The overwhelming proportion and so much of the growth in hardwood timber biological availability is in the private sector.







This growth in the fuelwood sector is starting to spark interest in managing smaller scale and farm and broadleaved woodlands and so bringing more millable timbers to market in smaller parcels from non traditional sources where local contacts may make the difference. It is against this backdrop that FC Scotland has offered its "Harvesting and Processing" grant within the suite of Forestry Grant Scheme grants, and recently ran a successful and well attended series of "Small to medium harvesting machinery demonstrations" at Falkland Estate. With over 100 attendees from all sectors it sought to highlight suitable machinery to enable cost effective and low impact working of small woodlands and smaller trees. Four different machines were demonstrated working in-forest, supported by a static demonstration of a Woodmizer sawmill manned by Keith Threadgall and firewood processing equipment from Caledonian Forestry Services. Coffee plus information on the grant were available indoors by the log burning stove - meaning everyone who came in left with a warm glow!

So, the timber you want is coming to market but unless you are pro-active it won't come to you. Regular liaison, possibly buying collectively then picking up and paying for your timber on time are all going to be increasingly vital if you want to secure your raw material.



Written by,  
**Derek Nelson**  
FCS Policy Advisor

## SCOTLAND / ITALY PROJECT DEVELOPMENT

The Italian Chair District is a collective, flexible and efficient network that accommodates contemporary influences without betraying its origins, taking cues from international trends and reworking cultural contributions from designers of diverse origins and education and combining these with solid experience and knowledge. It is also a "Made in Italy" supply chain certified ISO 9001, which is able to satisfy even the most demanding production requirements and inject designer creativity and architectural planning into pieces. A group of companies handing down artisan skill and experience at all stages of production, applying management methods that are quality certified and guaranteed. The know-how that has made the District unique leads not to uniformity but to an extraordinary wealth of expressions. This occurs because the requirements for an experience of various settings - home, contract, free time - are all different. Innovative interpretations of classic models and modern offerings are matched with tables and furniture accessories. The range of products manufactured by the Italian Chair District companies is huge: from sought-after design to modern chairs, from leather chairs to office chairs; a productive capacity that all comes with the guarantee of know-how that produces a unique mix of tradition and modern technology. Wood is a material that belongs to the sector's tradition, selected from forests that are subject to strict environmental control standards. This pioneer eco-friendly material is well-known and loved, natural and alive; it is worked with highly skilled techniques and enhanced by quality finishes; it comes alive again under the new aesthetic and technological dictates of design.

This extract from the Italian Chair Districts advertising literature is in essence the vision ASHS has for the Scottish timber sector over the next ten years. A 'Made in Scotland brand' which brings together our own highly skilled artisans, saw-millers and designers, utilizing our own forest resources, backed and supported by the government of the time, recognising its true economic contribution to the country as a whole. ASHS is now putting together a business plan and development strategy that will, we hope, see this vision come to light.



## ORGANISING THE SCOTTISH SMALL WOODLAND SECTOR

In 1998, Alison Dyke carried out a student project which found that there were some 350 people in Scotland collecting wild fruit, food and foliage from forests and wild places in Scotland and contributing some £400,000 to the Scottish economy(1). These part-time businesses were entirely unknown to the authorities and even to each other.

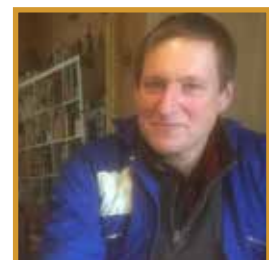
Scotland is full of small businesses. In March 2013 there were over 300,000 (2), contributing 34% of national turnover(2). They employ over 1M people throughout the country, providing 80% of employment in rural areas(3).

The small woodland business sector comprises small woodland owners, forest managers, forestry and harvesting contractors, sawmillers, furniture makers, woodworkers, joiners, builders, coppice workers, basket-makers, fruit/fungi/foliage collectors, firewood suppliers and many more. They are largely unnoticed and unrepresented.

Hardwood sawmillers were one of the first groups to get organised, setting up ASHS in 1999 with help from the Forestry Commission. Key FC staff realised that, after the collapse of the old small-scale sawmilling industry in the 1980s there was an important gap in the market for a small but significant Scottish raw material - homegrown hardwood. It was hard to deal with (and help) a lot of small businesses and so they encouraged ASHS to develop as a single voice for the industry. Other groups have set up on their own - Scottish Furniture Makers Association, Scottish Basketmakers Circle, Scottish Wild Harvests Association. Not all are trade associations, but they provide members with the knowledge that there are other businesses facing the same problems and opportunities. Members learn from each other and when needed, the organisations can speak on behalf of their sector to government.



The Scottish Government is committed to helping small businesses continue to be the backbone of the Scottish economy. People are working away to try and help these subsectors become more organised and benefit from trade associations in the way that ASHS has helped accelerate the growth of the small-scale Scottish hardwood industry. Maybe these disparate businesses will soon see themselves as part of a wide network of small businesses in Scotland, providing goods and services that bigger businesses can't, from resources that might otherwise be wasted and providing jobs and livelihoods across Scotland.



Written by,  
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(1) A Dyke & A Newton (1999) *Commercial Harvesting of Wild Mushrooms in Scottish Forests: Is it sustainable?* Scottish Forestry 53(2)

(2) *Small Business Survey Scotland 2014*. The Scottish Government

(3) *Resilient Economies, Resilient Communities FSB Manifesto Scottish Parliament Elections 2016*



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## OWNING A SMALL WOOD AS A LOCAL SYNDICATE

### *Old Grantully Castle Wood*

In 2004, a twenty hectare oak wood beside the River Tay near Aberfeldy, Perthshire came up for sale. It was a rare, near miraculous event - an affordable woodland property on our doorstep, in the land of unaffordable forests. Unusually, the owner decided not to put it on the open market, but to sell instead to local interests that appealed to his philosophy of using the wood for productive purposes. Rick borrowed the money to buy the wood, then set about finding four other owners, each putting in £10,000 in the form of a 20% share. Finding partners wanting to buy a share in the wood was easy; we could have sold the shares several times over within our part of Highland Perthshire. Hence a local, syndicate-owned woodland came into existence.

The intention from the start was to make the wood part of our livelihoods and so the syndicate included foresters, a mobile sawmill and a furniture maker. All our families immediately became equally involved; each with their different views on why the wood was valuable to them. When we all turn up with our children, there are 20 of us, plus various friends and dogs; and on those occasions it feels more like a community wood. But it is a privately owned and managed woodland.

### *Limited Company*

We chose to incorporate as a limited company, which has worked fine, though there may be other equally good or better options. Old Castle Wood Limited has 10 shares, with each of five families holding two £5000 shares. Being a limited company brings with it a small number of straightforward reporting requirements to Companies House that need to be attended to on time to avoid fines (we learnt this the hard way). Our annual accounts are absurdly simple and our AGMs are informal; indeed the time taken to expedite company formalities is less than the time spent eating our traditional AGM cake.

### *Collective Ownership*

We have gone 12 years managing the wood collectively without any noticeable friction between our members. In setting up the wood we made an effort to avoid obvious alpha males or females, which may help. None of the members were close friends at the

outset, and no internal cliques developed. And when we started we were all in our 30's and 40's and had maybe figured out what our personal weaknesses were, and made sure they were kept in check. Importantly, we are pretty relaxed about how much work - or how little - individuals do; and we don't seem to care if one person takes out more firewood than another. Whatever the reasons, good luck or good judgement, collective ownership has worked.

### *Syndicates - Strengths and Weaknesses*

Syndicate or group ownership of forestry is nothing new and exists in a variety of forms. Old Castle Wood Limited is at one end of a spectrum, where ownership is largely local and the people owning the wood also manage it. So what are the strengths and weaknesses of local syndicate ownership based on our twelve years experience?

Syndicates can be great; they bring more capacity, enthusiasm, skills, investment and much more fun. The most obvious strength is that more people are directly engaged and committed (i.e. the owners), than if the wood is owned by one person. We have this in common with community woods. This gives us the capacity to carry out basic management using our own resources. We effectively employ ourselves to do the loss-making maintenance activities. This is





mainly done at weekends, and input has remained at a level where this is fun, and doesn't seem like drudgery. We trade on the happy fact that it doesn't usually matter very much when woodland work happens, this year or next.

The downside with this arrangement is that it limits our ambitions, because unpaid effort, even by multiple committed owners is necessarily limited. Our management is quite good, but it wouldn't win any prizes. While we manage routine maintenance fairly well, we have been less successful with more committing or ambitious aspects of management, which is occasionally frustrating. One thing we notice is that when our "other" jobs are running full time, the wood does not get the attention it deserves. So to fully realise the potential of a wood, at least some of the owners have to put the wood on an equal par with other money earning activities. This is our current direction of travel.

### *Community Connections*

The other strength is that the wood has gradually become more relevant to local needs. The social networks that ten owners have within the community mean that a basic level of community engagement happens effortlessly, almost by default; and yet in running the wood, we have all the advantages of private ownership. Local people also get to know the wood in a different way when they know the owners. We have 4 km of paths in 20 hectares, so there is no problem getting to know our community users. Without any active encouragement on our part, things start to happen. Families and groups appear and ask to camp. Scouts do activities, school children do projects and various events needing a woodland setting happen. For example, the county archaeologist asked us to fell a large alder tree using only replica bronze-age axes, which turned into an excellent cardiac stress test. People ask to bury their pets, or to come in and cut firewood. While any of this could happen in other woods, it happens most frequently in ours because the social networks make it easy for everyone involved.

One advantage of this type of ownership model is that owners have a very direct control and a financial stake, which are good motivators. Being directly responsible for the wood keeps us on our toes. Our local networks are very efficient at letting us know and there is a problem (!) - say if a tree comes down over a track - and that feeling of personal responsibility gets you out of your armchair on a winters day to deal with it.

*“So, private ownership with a real community connection – the model that has much to recommend it.”*

### *Timber*

We have had a mobile sawmill in on two occasions, but have now switched to owning our own small low-tech bandsaw (Timbery M100), and are hoping that this will give us minimum costs and maximum flexibility in our sawing operations. We have started to thin the wood annually for small volumes of sawlogs, and planks are sold to Angus Ross's workshop in Aberfeldy.

Angus Ross Ltd employs two furniture makers and an apprentice, plus a part-time administrator and is a success story in what is a challenging profession. His business has slowly switched over to Scottish timber, and he now intends to source as much as possible of his timber locally. At the moment the wood is supplying about half of his timber requirements - and this is made possible because Angus's working methods involve a lot of steam bending of relatively short sections. This means we can operate with logs down to 1.8 m and Angus can select the best bits from these. Despite the unexciting quality of timber that our thinnings typically yield, Angus manages to produce world class furniture (<http://www.angusross.co.uk/about.html#craftsmanship>). The lesson here is that incorporating a local timber-using business into the ownership of the wood can have a huge benefit - what the rest of the forest industry world calls "vertical integration". Angus's phrase is "from woodland to workshop", and the local nature of his timber supply is now a selling point for his products.



### *The Bottom Line*

So what about trying to ensure the company bank balance stays in the black. First point to make is that our labour inputs don't appear on a balance sheet, and nor does most of our "income", which accrues mainly as tonnes of firewood used for heating our homes. This means that there is not much work for our accountant at the end of the financial year. We aim to pay for our modest ongoing capital costs via our sawlog sales. So far this approach has more or less worked out.







The bank balance benefitted in the early years with cash from (the much-missed) Scottish Forestry Grant Scheme which funded essential paths work, tree safety and thinning; but we have so far not made use of SRDP, which does not work well for small-scale owners like us.

### *A Financial Investment*

Locally, moderately attractive conifer woods are now selling in small lots at £8-9K per hectare thanks to the surreal marketing efforts of Woodlands.co.uk; so who knows what an attractive oak wood on the banks of the Tay would sell for now? Even at 8-9k per hectare, we could potentially sell the wood now for 3 or 4 times what we bought it for 12 years ago - such is the strength of interest in owning small woodlands. So if we were to eye the wood from an investment point of view, we have done very well; but this was not on our minds at the time - though of course it should have been.

### *The Land Reform Connection*

Of course 20 hectare woods are as rare as hen's teeth. This one only exists because of a special event - the historic Grantully Estate, seat of the Stewarts and Fotheringhams since the 1400's, being broken up and sold off in lots. This happened around 1980, and has left a legacy of beneficial local outcomes- some other small locally owned woodlands now exist, some former tenant farmers now own their own farms and small businesses now exist based in former estate houses. Our wood is an example of the type of outcome that could arise more widely if land reform ever got effective enough to encourage estate owners to dispose of some of their woodland to local interests.

### *The Long Term*

In the long term it would be nice to see the wood continue in roughly its current form and we think our ownership model is up to the task. When our generation passes on, it is likely that most, maybe all, of our children will have moved away or lost interest in the wood. At that point it would make sense for us, or maybe them, to sell the shares. The ideal outcome would be for those shares to get transferred onto the hands of mainly local people who, like us have a direct interest in the good management of the wood.



### *What Else We Get Out Of It*

When people ask us what our main management activity is, we like to reply "sitting round the campfire, eating sausages and talking about management". What we underestimated from the start was the sheer capacity the wood to engender high quality social time. The campfire scene with or without alcohol is great; work done in a group is always uplifting and renders even boring jobs entertaining; simply stepping into the wood crosses an indefinable threshold where outside pressures barely penetrate; and every parent who opens the car doors and watches their children bound off into the wood knows something very special is happening as the peace descends. Our women members, who mostly started with no forestry knowledge, are acquiring multiple forest worker skills; and several of us have picked up some basic furniture workshop expertise. We have had Piers Voysey's and Rachel Avery's legendary wedding (they are members), womens' outdoor yoga, forest-schools in a yurt, several comings-of-age, children reputedly conceived and cherished dogs laid to rest. Tonnes of kids have spent magical days in the wood, which would not have happened otherwise. All this is invaluable and makes financial considerations look trivial.



Written by  
Rick Worrell



## A JOURNEY TO OWNING A SMALL SCOTTISH WOODLAND

It was just another working day in September 2008 when we got the call from our lawyer to let us know the woodland was finally ours. We had driven past this particular woodland for years, on the way to our rented farm workshop in Ruskie near Stirling. This was the closest rentable space to Fintry we could find, at a price we could afford. We took that leap of faith in June 2002 to move our furniture-making business from our garage in Fintry into an old stone built stable fourteen miles away.

After six years or so in the stables, we needed more space and moved to a larger unit with a small yard within the same farm. We now had the space to set up our first sawmill (A large chainsaw), it wasn't long before we made the decision to invest in a basic band saw mill, a Hudson 36! Sharing premises with a large stone company had its advantages as we could borrow forklifts whenever we needed them. This allowed us to start building oak frames, something that had interested me since my travels across America & Canada. The forklifts were a necessity for moving large logs onto the saw mill and cut timber up to the old kiln we had managed to procure from a local tree surgeon. We were starting to build a log stock whenever the budget allowed and slowly we squeezed the boundaries of our small yard, which, quite rightly started causing issues with our landlord. It didn't take a lot of thinking to realise that we needed our own place with room to expand and the search for a woodland began.

The reasoning for a woodland rather than a building plot or an industrial unit was based on two things, firstly; economics i.e value for money per m<sup>2</sup>, we needed a lot of storage space, Secondly; the suitability of the space for this type of business meant, logically, it needed to be in a rural setting. Initially we searched online for companies who specialized in woodland sales and found a few within a fifteen mile radius of our home. These ranged from five acres to thirty acres. A couple of woodlands were potentially suitable and we looked into these more closely, only to find that they carried caveats which excluded any chance of building a workshop or pretty much anything on them. Watch out for this if you start looking for one, it seems to be quite common.

A funny thing happens when you focus on something more intently, you start to notice whatever it might be everywhere, in our case we noticed that we were actually surrounded by small woodlands. Exasperated by the legal restraints we had encountered with the woodlands we had looked at, we turned our attention to the ones on our doorstep. Obviously none of these were on the open market, so we set about finding out who owned them. The smallest and closest to our home was on the edge of the village. After some research we discovered it was owned by the previous Laird of Culcreuch Castle, Hercules Robinson who now lived on



**Dovetail**  
SCOTLAND

the Isle of Man. We managed to find an address and wrote an introductory letter with a verbal offer to purchase the 5 acre woodland from him for £6,000. This was positively received with the inclusion that we cover all the legal costs and deal with everything here in Scotland. The legalities, however dragged on for a year as he rarely replied to the lawyer's letters. It finally fell through when, due to ill health, Hercules transferred his estate to his son. He immediately tripled the price and we decided to withdraw! The next woodland was a mile outside the village on the Killearn road, but again it transpired that it too was not locally owned. It turned out the owner lived in South Africa. We wrote a similar introductory letter with an offer to them through their local factor. We never received a reply to this and after a good few months decided to move on. By this time we had noticed a small Oak woodland on our way to work, a mile outside the village on the B822 about 380 metres from the road. One weekend we decided to take a walk and have a closer look and found to our delight a beautiful ancient Oak woodland on a sloping site with 2 small natural spring burns running







through it with an acre field at its base. We discovered google pro, which is now free, about the same time; this allowed us to work out the area of the woodland to be approx 16 acres. This time it was owned by a local farmer and we arranged a face to face meeting and put forward our case to purchase it.

We were visited at our old workshop a couple of months later by the heads of the farming family. I think they may have been checking out the credibility of our story! Additional enquiries were made locally as to our characters and ultimately our suitability to be sold the land. At this point no money had been mentioned and it occurred to us that even if they said yes we might not be able to afford it. We finally received a call from the Head of the family to tell us that they would be happy to sell us the ground and to make them an offer. After a little negotiation we finally agreed on £20,000 + all legal fees which equated to another £1,500 and the responsibility of all the fencing. After our experience from the previous woodlands, we made a point of having our lawyer ensure that this was a straight transfer of title with no caveats which could restrict any future development. We had £7,000 in reserve and borrowed the balance

from the bank without much trouble and in September 2008 we finally became the proud owners of a 16 acre Ancient Oak woodland, which we have renamed Darach Mor (big Oak). This was of course only the beginning of our journey as we now had to get planning permission for roads and buildings on a green field site and of course find the money to fund it all.

As a qualified Civil Engineer prior to becoming a furniture maker, I was able to prepare all the CAD drawings for the access road, yard and workshop for the planning application. This all went through with surprising ease and we had permission before Christmas 2008. It would however be four years before we could finally hand over the keys to our rented workshop in Ruskie. Unfortunately the banks crashed just as we started looking for finance to start building. We had two options; sit it out until the things improved and banks start lending to small businesses again or find another way and push on. Rightly or wrongly we chose the latter! But that's another story!



Completed workshop





We have now been working full time from a temporary workshop within our own yard accessed by our own road since December 2012. We still however have a long way to go as we don't have any services as yet. Our power comes from a 33 KVA 3 phase diesel generator which works out at around £10 day to run. Sewage and water will, all going well be installed by June this year. Living only a mile away from the workshop has however saved us nearly 250h per year travelling and over £2,000 year in diesel which more than compensates at the moment for the cost of the generator. The cost of the loan to purchase the land, build the access road and set up the temporary porta cabin workshop is also less than we were paying in rent so all things considered it was the right decision.

Since moving the business across to Darach Mor we identified through Eamonn Wall & Co, (a woodland design & tree management company), that there are good grants available for planting new woodlands. We have subsequently managed to purchase another 24 acres around our existing woodland from the same farmers. With Eamonn's help we have just put forward our woodland grant application. This will allow us to access funds to cover the cost of deer fencing 35 acres including the existing oak woodland and plant approx 24,000 productive broadleaf trees. By the time this article is published we should be in full swing, fencing and planting. Removing the sheep and deer fencing the old woodland will now give it the chance to naturally regenerate, securing its future for generations to come. It is said that a nation becomes great when old men plant trees they will never shade under!

This journey is probably not for everyone but our story shows that it can be done even on a furniture maker's budget. The recipe is in essence simple; It starts with some determination, add stamina, a small helping of courage, some good friends, a strong supportive family and hard work and you are well on your way. We are looking forward to the next stage of our journey as we try to get permission for a house and watch the new woodland grow and take shape.

***Your future is limited only by your imagination so imagine big and make it happen!***

Written by,  
Steve Mclean

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



## WOODLAND SALES IN SCOTLAND, POST-REFERENDUM

In the run up to September 2014, there was some consternation that the market for forestry and woodland properties would struggle with the concept of an independent Scotland; however, this did not seem to have a significant impact on the woodland market. There was a modest hiatus around August and September but that, on reflection, could well be as much to do with the holiday period as political change.

The forestry market has since then continued to show great strength driven by people's interest in acquiring a real asset backed by the fundamental ownership of land and the growing of a renewable fibre resource.

The forestry investment market is primarily comprised of relatively large-scale coniferous plantations. With economies of scale and a well-developed commercial processing sector, this is where most of the forestry investment money is directed. For example, large-scale coniferous blocks in the Scottish Borders such as Auchencairn - 1,120 hectares of excellent quality conifer crops now in production, sold in 2015 at an average price of £11,150 per hectare; total sale price £12,500,000. For woodlands that are, as yet, untouched and comprise solid crops of spruce, perhaps 35 or 40 years old, the average sale price has been in the region of £20,000 per hectare, reflecting the high quality of timber available for harvesting.

At the smaller scale, there are a variety of woodlands, still most commonly of coniferous mixture but with broadleaved elements. We have marketed woodlands ranging from 3 hectares in size upwards. In this sector of the market there are opportunities to acquire woods at more modest prices and often more in the way of mixed species.

Croft Wood extended to only 3.4 hectares. Situated south of Pitlochry, it was an interesting opportunity to acquire a small woodland containing a wide variety of species, many of them mature and of great amenity value; and some timber value, including one or two venerable oaks. This sold at just over £13,000 per hectare.



At a slightly larger scale, woodlands at Clifton and Black Sea, close to the Solway Firth, comprised 12.4 hectares of very mixed woodland; species were predominantly native, including Sessile oak, birch, rowan, alder, sycamore and hazel. These woodlands offered considerable amenity and enjoyment value, alongside conservation, and sold at around £8,100 per hectare.



Moving up to slightly larger woodlands, the sale of Wester Loch to the south of Hawick, offered an opportunity to buy 23 hectares of mixed conifer planting, mainly Sitka spruce but also some semi-mature Scots pine, planted around a hill lochan, with associated wetland. This is a classified SSSI and offered a very private woodland property located in a panoramic upland setting. This sold for £65,000. At about the same size, Quarter Wood, just under 20 hectares, was a parcel of clear-felled land, ready for replanting. This has sold at a price of £2,284 per hectare. This sale is a useful guide to the sort of land values that can apply to forestry land. Quarter Wood offered a new owner the potential to establish a woodland to their own design, subject to approval through the Forestry Commission.



View SW up the Glenholm valley taken from within the site

Occasionally, there is an opportunity to buy woodland with a house or other building. Currently on the market is Cumrie Farmhouse and Woodland near Huntly. In total, 46 hectares, including a traditional farmhouse and steading conversion, the woodland element comprises mixed broadleaves and conifers planted in 2002. With landscaped areas of open ground, there is considerable scope here to develop a very attractive long-term woodland property. The guide price is £390,000.







There is, therefore, a wide variety of woodland and forestry property regularly coming to the market. If you are interested in considering woodland ownership, it is well worth keeping an eye on our website - [www.johnclegg.co.uk](http://www.johnclegg.co.uk) - so that you can see new properties as they arrive. Sometimes woodlands are offered for sale in lots and it may be that the overall woodland is of no interest or is too large for you to consider, but the smaller lots might be attractive.



As with all property there are some fundamental aspects to check including the access rights and any specific burdens associated with the land. Sporting and mineral rights will normally be included in the title. Woodland management can be as complex or simple as you desire. Under the SRDP system, there are grants available to support forestry management, including new planting. Please refer to the Forestry Commission website - [www.forestry.gov.uk/scotland](http://www.forestry.gov.uk/scotland) for details.

In conclusion, while we had some concerns that, post-Referendum, the forestry market might be uncertain the past 18 months have shown it to be robust with continued interest from a wide range of potential purchasers. As we move towards Spring there will be new properties coming to the market.

For further information, please contact us on 0131 229 8800 or at [edinburgh@johnclegg.co.uk](mailto:edinburgh@johnclegg.co.uk).



Written by  
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John Clegg & Co



## MACHINERY MAKERS NEWS PAGE

### Introduction to Manufacturers News page

The idea for this page came through Keith Threadgall, Woodmizers representative in Scotland and a long term member of ASHS. In the interests of neutrality, the Full Circle editing team offered this news platform to Trak Met UK, Loglogic, Marshal Logging (UK agents for Serra sawmills), Logosol, Just Saws and Saws UK Ltd (UK agents for Forester Sawmills) and Felder UK. Only Felder, Woodmizer and Timbery took up the offer, which included a ½ page paid advert per entry at £200.

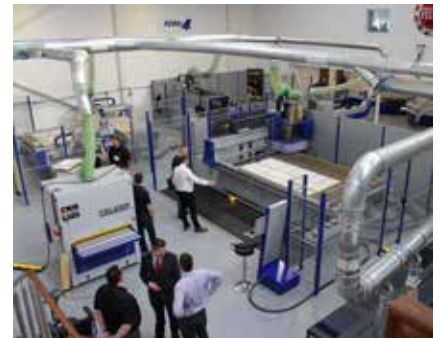
ASHS will always try to offer an unbiased view on any products or services advertised in this journal. It is up to individual readers to determine the suitability and select the right product for their purposes.

***If other manufacturers would like to make use of this space in future editions please contact the editing team.***



### Brand New Felder Showroom and Facilities

Felder Group UK have recently built a state of the art showroom benefiting from an increase in 500 square metres. In April they showcased their extended showroom with a mezzanine floor, office and training centre at a spectacular grand opening event. Industry press, a selection of VIP guests and company partners attended the opening.



Felder UK have ensured that their facilities are second to none and the new showroom benefits from quality products. Leading specialists in compressed air technology Air Power UK Ltd, provided the air supply and the Woodwork Dust Control Company Ltd, leaders in dust control technology provided the dust extraction. The renovation includes a brand new kitchen, board room table and reception desk, which were manufactured by Felder customers, Edward Williams Furniture and Greenacre Property Ltd.

"The new showroom is bright and effective letting you focus on the machines, the whole renovation project has come together and the showroom looks amazing," said owner of Edward Williams, Adam Howe. To see how a machine from the Felder Group could benefit your business visit [www.felder-group.co.uk](http://www.felder-group.co.uk) or call 01908 635 000



Timbery is a sawmill brand already well known in North and South America, and now is available in Europe! Timbery sawmills enable hobbyists and entry-level sawyers to get started with their own sawmill, offering low priced sawmills (from £2,700), bandsaw blades (10 blades from £85!), board edgers, and all-in-one blade maintenance equipment. Timbery products are CE certified and made in the USA and Europe. [www.timbery.eu](http://www.timbery.eu)



In February, Wood-Mizer's WM1000 sawmill with 1.6m log diameter capacity was installed in Scotland! New Wood-Mizer sawmill models will be released to the market in early 2016, so visit our new mobile-friendly website to stay updated with the latest news and customer success stories from sawyers around the world! [www.woodmizer.co.uk](http://www.woodmizer.co.uk)







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Birch Ply drawer box



## ‘MAKER VS MACHINE’

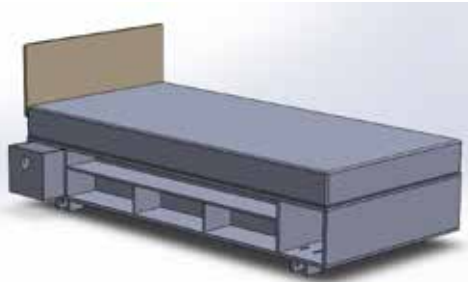
*“If you use a CNC to make furniture you are not a proper furniture maker”...* It’s a comment that you see on woodworking forums and hear in discussions with designer - makers all over the world. If you have a furniture business however then unless it is making chairs out of green timber dragged out of the forest by a horse, the chances are the wood you are using will see a piece of machinery during the making process. It could just be a planer, table saw or hand router but where do you draw the line? As more and more people are using CAD the next logical step is to use the electronic files you have already created and have them machined on a CNC machine. Prior to owning a CNC any jobs I had drawn in CAD were printed off on paper with dimensions which I would transfer to the wood/template/jig in the traditional pencil and ruler fashion.

When running a one man operation the dream is to find efficient ways of working where everything goes together first time without a problem and the customer receives a nice product which they can’t pay you for quickly enough. The reality isn’t quite like that as you know and I can assure you that buying a CNC router will not make your working life easier overnight. It can frustrate you just as much as any other machining operation and destroy timber just as quickly if not quicker than planers and saws. The amount of timber wastage when using solid timber is also higher on a CNC than say that of cutting things on a band saw, on the flip side if you are using sheet materials then you can nest components together to make the most of a sheet of ply or dare I suggest MDF.

*So I hear you asking is it really worth it?* And the answer is yes if you would like to create a slightly different revenue stream and probably not if you are focusing solely on solid wood individually crafted furniture. The main advantages of using the CNC as a sole (or small group) designer - maker are: repeatability, accuracy, speed of manufacture, adding value to designs with engraving/decorative routing and you don’t have to pay them wages.

The biggest advantage I find is if you have already created a 3D model of your design to show to a customer. You then have a starting point from where you can process your CAD model into 2D components via Computer Aided Manufacture software (CAM). Again this all depends on the type and size of the job. Converting 2D drawings into components that are cut out on the CNC doesn’t happen by magic, it takes time to modify your 2D generated CAD drawings using a CAM package into something that resembles what you want it to look like after it has been machined on a CNC. Rebates have to be accounted for, tools have to be assigned, are the pieces too small - how will I hold the workpiece? The list goes on. File conversion and machine set-up is often the biggest time component in doing the work on a CNC and can often be 95% of a job. If you are going to be making 100’s of them then it is worthwhile but a one-off is debatable unless you are charging for set-up time.





**So why did I do it?** I was contemplating how I could make things quicker or take on slightly bigger jobs, something that a CNC would be useful for. Having previously worked as an engineer I had lots of CAD and CAM experience so it wasn't too daunting a prospect to manipulate the files etc. The daunting prospect was buying and installing a machine. Then fate stepped in with a particular project to quote for 10 art gallery benches in a particular style that would be an ideal candidate for CNC machining. I couldn't find anyone locally who was keen to do the CNC machining for me and it was going to be a pain getting materials delivered elsewhere and working on prototypes in someone else's workshop before pressing the button and cutting out multiple parts. I took a bit of a gamble and bought a machine directly from China (this is a whole different story) to do the bench project. It is a fairly basic machine with one spindle (router) an 8' x 4' bed with extraction and a vacuum pump to hold the workpiece to the bed. The machine cost around £15,000 by the time it was installed albeit I did most of the installing and hired an electrician to wire everything up. It requires an old PC with windows XP to run the CNC control software called Mach3 which you can buy for £150, although other CNC control software is available for similar money. This software is mainly aimed at hobbyists but is more than capable of doing what an individual maker would require of it. Similarly CAM software aimed at hobbyists will do more than you will need on a daily basis.

So the control/software element is not too expensive and most people can get their hands on an old computer for nothing or very little. You may think that £15,000 is a lot of money and I would agree with you but I took out a 4 year loan on £12,000 (my original budget!) which works out at about £230 a month. My thinking here was surely I could make £230 a month on the CNC. The alternative was buying a machine in the UK for £35k with a very similar specification. For £35k you get it installed by the supply company but you still have to lift it in place and they give you a few days of training. A few days of training might get you started but it will by no means cover everything that you need to know.

**What about support?** The machine I bought is built using components that are used on pretty much every CNC machine and are available in the UK - a pre-requisite of buying the machine. The machine did come with a year's warranty (from when it was put on the boat!) which I basically assumed was worthless considering the distance, although the company were helpful after the purchase and still reply to my queries two years later - albeit the language barrier can cause a problem. I ask most of my questions on a CNC forum which will generally point you in the right direction.

**What have I used it for?** Apart from the bench project I have made bits of kitchens, cabinets, beds, tables, signs, gifts, shaped worktops and lots of other items. Jig making is good on the CNC as the accuracy it can achieve is very good and you can cut lots of jig components out of sheet material and incorporate handles etc. It is also useful if you use a domino machine; you can machine your domino slots in one half of your component and do the others with the domino, using the CNC'd one as a template. Birch ply drawers are great to make on the CNC as you can basically make sides, back and front with finger joints and grooves for the base. Make the joints snug and a bit of glue and you have one solid drawer which you can almost assemble straightaway. It's not everyone's cup of tea especially makers who prefer to hand cut dovetails, but they are aesthetically pleasing and when working to a tight budget are a win for the customer and you.



Completed Opium table with curved legs - made jig for shaping rails on spindle using CNC.



As an individual maker you are often working alone and even if you have a panel saw for ripping sheet materials the CNC wins here as you only have to move the sheet onto the CNC bed once, cut your components out and remove the much lighter pieces - saves a lot of manual handling of heavy boards. I have a sheet material rack close to the CNC which allows me to wrestle them onto the machine by myself. I also located the CNC so that a pallet of sheet material can be delivered and sit right next to it which allows me to move a sheet over without any help.





Home bar - every item has had some parts cut out on CNC - the rest done by hand

You are still never going to compete with IKEA and I am guessing that you probably don't want to but it is possible to make some very nice products on a CNC. There is another avenue of design/manufacture starting called open source furniture making which I personally think is a good idea. Websites are file sharing CNC layouts, generally on a sheet of birch ply which can be assembled almost immediately to make a pre-designed piece of furniture. A member of the public can contact a manufacturer listed on the website for a price on available designs. Generally they are encouraged to try and choose a manufacturer as close to them as possible. The payment is made through the website and a percentage of the cost goes to the designer. The obvious benefits being there are not loads of flat packed furniture lying in stock and they can be made in the country where people are buying them.

So to re-cap buying or even using a CNC is not going to make your fortune overnight but when used in conjunction with other machinery/techniques it can prove to be very useful and versatile. It has allowed me to take on much bigger jobs involving sheet materials which I would normally have thought twice about as my workshop is mainly set up for solid timber furniture. Furniture makers are by nature problem solvers and find various ways to do the same job. A CNC can be put to use in a variety of ways to help your business by combining a machine to do laborious work with existing hand skills to make unique products.

### ***Machinery Suppliers - UK***

Biesse - [www.biesse.com](http://www.biesse.com)  
 SCM - [www.scmgroup.com/en](http://www.scmgroup.com/en)  
 Multicam - [www.multicam.com/](http://www.multicam.com/)

### ***Machinery Suppliers - China***

Omni-Tech - [www.omni-cnc.com/](http://www.omni-cnc.com/)  
 cncrouter/  
 Jinan Quick CNC - [www.quick-cnc.com/en/12-cnc-router](http://www.quick-cnc.com/en/12-cnc-router)

***CNC Control Software*** (You may or may not need this depending on the machine)  
 Mach3 - [www.machsupport.com/](http://www.machsupport.com/)  
 UCCNC - [www.ncdrive.com/UCCNC.html](http://www.ncdrive.com/UCCNC.html)

### ***CAM Software***

Artcam - [www.artcam.com](http://www.artcam.com)  
 Vectric V-Carve Pro - [www.vectric.com](http://www.vectric.com)  
 Enroute - [www.enroutesoftware.com](http://www.enroutesoftware.com)

### ***3D CAD Software***

Inventor - [www.autodesk.co.uk/products/inventor/overview](http://www.autodesk.co.uk/products/inventor/overview)  
 Solidworks - [www.solidworks.com/](http://www.solidworks.com/)  
 SketchUp - [www.sketchup.com](http://www.sketchup.com)

### ***CNC Cutter Suppliers***

Cutwell - [www.cutwel.co.uk/](http://www.cutwel.co.uk/)  
 Wealden - [www.wealdentool.com](http://www.wealdentool.com)  
 Titman - [www.titman.co.uk/](http://www.titman.co.uk/)  
 Ebay - [www.ebay.co.uk](http://www.ebay.co.uk)

Open Source Furniture Making  
 - [www.opendesk.cc](http://www.opendesk.cc)



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