



# round wood timber framing



*Hammering a peg into a round wood joint with a home-made wooden mallet.*

## what is it?

Round wood is straight from the tree (with or without bark), without any processing, squaring or planking. Timber framing is creating the structural framework for a building from wood. The frame bears the load, then the walls are filled in with something else, which could be timber cladding, straw bales, wattle & daub, or bricks and mortar.

Traditional timber framing uses mortice and tenon joints secured with wooden pegs and wedges, all of which is traditionally done with hand tools (although commercial timber framers now use power tools).

Round wood timber framing is an older technique than square timber framing. The history of timber building goes something like this: lean-tos – timbers stay up by leaning on each other, and aren't fixed at all; then timbers lashed together – tipis evolved from this, as did basic shelters all over the world (knotting pre-dates stone tools and the use of fire; anthropologists have even recorded gorillas using basic knots in their nests); then metal tools were developed in the iron age, and jointing took off – people started experimenting with squaring timbers with axes, plus square joints; later, saws were invented, and round trees were sawn into square timbers. Simultaneously, the log cabin model was being used in Scandinavia. This doesn't involve making a frame, but building a load-supporting structure from the ground up by interlocking logs. In Britain, the classic timber framing style was cruck frames – triangles of round wood pegged together to

make an A shape. They can still be found in old barns and cottages. But they had to find very long pieces of wood, so people started making small squares and building them up to the right shape, then joining the squares diagonally to make a roof.

By now, everyone was squaring their timber, because a) it's more uniform, and removes uncertainty; b) all joints can be almost identical – you don't have to take into consideration the shape of the tree; unskilled people can then be employed to make standard joints; and c) right-angles fit better, joints become stronger, and you can fit bricks / wattle & daub in more easily. Everything is flat and flush.

## what are the benefits?

So round wood could be considered old-fashioned, but the reasons for resurrecting it are aesthetic and ecological. It looks pretty; it's a natural antidote to the square, flat, generic world that we build; it reconnects people with the forms of the natural world that are more relaxing to the eye; and it reminds us that wood comes from trees. Also, you can use coppiced wood and smaller dimension timber. If you use squared wood, you need to cut down mature trees and re-plant, but a coppiced tree continually re-grows. Plus round wood cuts out the industrial process of squaring timbers. People can use their own local woodlands to build with – it doesn't have to go off to a factory to be processed, and you don't have to get a mobile miller in, which saves a lot on transport, energy and associated emissions.

Round wood is 50% stronger than similar-sized squared timber, hence you need a smaller cross-section of round wood to do the same job, which saves wood. Traditional timber framing has a structural advantage if the joints are made of wood; in a fire, joints held together with metal fail



*Course participants after erecting a round wood extension over a cob oven and bench.*

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more quickly because metal conducts heat into the centre of the timbers – so your house will fall down more readily.

And finally, round wood timber framing has all the benefits of timber building – using wood is natural, renewable, biodegradable, locks up carbon and supports local woodlands.

### what can I do?

Start small – round wood is suited to a project in your garden / smallholding, and lends itself to DIY. Planners won't know what you're talking about, but it doesn't matter – it's building regulations that are important. If an architect specifies it properly, it will be OK. In Ben Law's book, *The Woodland House*, there are figures for loadings / size of timbers, and as regards building regs, the architects at the Greenwood Centre in Shropshire design and build round wood buildings, and there is one on site. Constructive Individuals in York know more about this too.

You can cut the timber yourself, or source it from timber yards. You will need a basic set of green woodworking tools – a side-axe (like a normal axe, but only has a bevel on one side); a froe (for splitting logs into lengths for making pegs); wedges and mallets (for splitting); a shave horse and draw knife (for making pegs); a rounder – like a large pencil-sharpener for pegs, or a dowel-maker – a piece of metal with a hole in, which you bash the peg through to get it to the right shape and size; maybe an adze or a curved chisel for scooping out parts of poles for joints; plus a hand-auger to drill holes. A bowsaw could be good too



*Ben Law's self-built, round wood timber frame house in the woods in Sussex.*



*Using a shave horse and draw knife to cut a peg roughly to size.*

for cutting the timber (or you could use a chainsaw, but it's greener with hand tools).

These tools will probably cost around £200 from woodland craft suppliers, and you can make your own shave-horse – see Mike Abbott's book, *Living Wood*, plus there are courses around the country that you can attend (see directory on Lowimpact.org - below). You can even make your own wooden roofing shingles.

NB: traditionally, oak and sweet chestnut are used if the structure is going to get wet or be in the ground, as they are the most durable. Heartwood is the durable part of the wood, so remove sapwood if it's going to be underground or in joints that are exposed to rain.

### resources

- [lowimpact.org/round-wood-timber-framing](http://lowimpact.org/round-wood-timber-framing) for information, courses, links & books, including:
- Ben Law, *Round Wood Timber Framing*
- Ben Law, *The Woodland House*
- Dan Ramsey, *Building a Log Home from Scratch or Kit*
- [youtube.com/watch?v=PHNF4wwg\\_w4](https://www.youtube.com/watch?v=PHNF4wwg_w4) – first of a series of eight videos showing how to build a round wood shed with a turf roof
- [ben-law.co.uk](http://ben-law.co.uk) – UK round wood timber framing pioneer

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