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Historical & Archaeological Interpretation

World of the Ancient Britons

How to build a Round House



Introduction

I have been involved with the designing and construction of Iron Age buildings on a number of sites since 1980. I still get enjoyment out of seeing a new building go up. Many people have asked me if there was a publication that would tell them how to build a round house, so here it is!

The following instructions are for a house 4 metres in diameter, a single ring of posts, and on a scale that can be built by school children under supervision. The principles can be expanded to construct a larger house if required

I wish you much success, and remember, the one that you build is also an experiment.

G. D. Freeman

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Front cover photo by G.D.Freeman

Origins of the Iron Age round house.

The round house design first appears in Britain towards the end of the Neolithic period (New Stone Age) around 2500BC. The round house was in use alongside other structures, both square and rectangular, and it is possible that it became a symbol of status within a class structure.

The round house continued to be popular up to approx 200AD when most of the Celts, who became tenant farmers under the Roman occupation, converted to living in Roman style housing. The round house is peculiar to Britain, as their use is not widespread on the continent.

Each house was built to suit the locality and the availability of materials. They were built of stone, wood planks, cob, turf, and wattle and daub. Roof frames were made of corbelled stone or wooden rafters. Thatch coverings were wheat straw, reed, heather, bracken, turf or wood shingles. The shapes of the houses were standard round house, courtyard house, or in parts of Caledonia, large stone towers called brochs.

So as you can see, there is a wide range of styles to choose from. This book is to help you build a standard round house, as found in most parts of the British Isles.



Photo by G.D.Freeman

House under construction

Materials

Try to make your house from materials gathered from around your location. Almost any timber can be used for the framework of the house, but if you can obtain a hardwood such as oak or ash, the house will last much longer. It is not important to strip the bark off, but if you wish to do so, it will prolong the life of the wood as there is nowhere for insects to hide. You can also char the bottom of the posts to stop them rotting in the ground. Thatching materials can be prepared by tying into small bundles called yealms.

Preparation

Marking out.

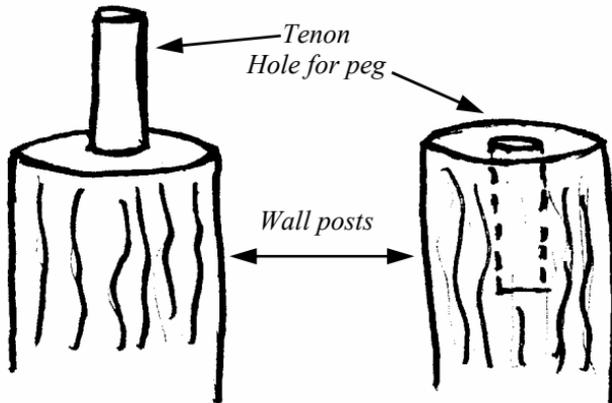
- Find a level area where you wish to build your house. Make sure you have an area of at least 6 metres in diameter.
- Put a peg in the ground to mark the centre of the floor.
- Prepare a length of cord with a loop tied in one end (big enough to put over the peg), and mark it at 2 metres.
- Put the loop over the peg and hold the cord at the 2 metre mark.
- Pull the cord tight and walk round and mark the floor with a circle. This gives you a 4 metre diameter floor area.
- The next important thing is to decide which direction the doorway is to face. In most excavations the evidence shows the general direction is between East and South so that the morning sun lights the interior of the house.
- Mark on the circle the position that you want the door posts. Put them at least 1 metre apart to make the doorway wide enough to get in and out of.
- The rest of the post positions are then marked on the circle. Make these 1 metre or less apart and spaced evenly, the number of posts is not critical.

Digging

- At the marked position for each of the posts, dig a hole the same diameter as the post. The depth of the hole should be approx 0.25 metre.
- If you are digging on a slope you must compensate for the slope by digging different depths to ensure the tops of the posts are level once they are placed in the holes.
- Do not throw away the earth removed from the holes as you will need some of it to in-fill around the posts

Wall-posts

- The posts for the wall should be 10-15cms in diameter, and 1.25metres long. This will give an internal wall height of 1metre with 0.25metre in the ground for support.
- The top of the post can be prepared in one of two ways depending on the practical skills of the builders.
- The first way is to drill a hole vertically into the top. The hole should be 2-3cms in diameter and 7.5cms deep. Make a wooden peg 15cms long and the same diameter as the hole. You can keep the surface of the peg quite rough as this will help it grip. Hammer the peg into the hole in the top of the post.
- The second method is to cut the top away to leave a tenon 7.5cms long at the end of the post. Once completed, the posts are dropped into the holes around the circle, and the loose earth packed around the base to hold the post firm in the ground.



Wall-plate.

- Timbers are cut to form the horizontal wall-plate.
- The length of each piece has to match the distance between the upright posts, plus the diameter of both of the posts.
- Both ends of the timber are cut into half-lap joints 10-15cms long, and then drilled with a 2-3cm hole to match the pegs (or the tenons) in the top of the upright posts.



Ends of wall plates showing half lap joints

Wall-plate erection.

- The timbers of the horizontal wall-plate are put into place on the top of the upright posts. Start at the doorway and put the wall-plate sections on alternate pairs of posts.
- Make sure that the flat ends of the half-lap joints face upward. The tenons or pegs should project upward through the holes in the ends of the half-lap joints. (If you want to flatten the underside of the joints they will sit better on top of the posts).
- Now place the other wall-plate sections face down across the gaps, locking the wall-plate into a complete circle.
- This pulls the top of the posts into place and creates a ring around the top of the wall, giving it great strength and enabling it to take the outward thrust of the roof rafters.

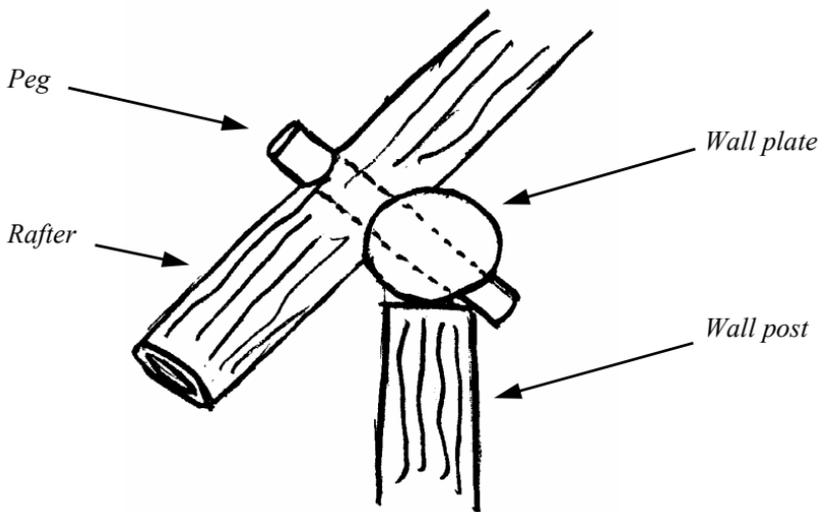
Wall Infill.

The wall at this stage consists of the upright posts topped with a circle. To make the wall a solid surface you will need a large quantity of flexible wood at least 2 metres long, so that it will be in contact with a minimum of three posts.

- Start at ground level at the doorway and work both ways around the

circle away from the door. Leave the doorway clear.

- Wooden rods of hazel, oak or ash, or pollarded willow, are woven in and out of the upright posts of the wall. At the doorway, try to get the thick ends of the wood against the door posts.
- Work your way upwards a layer at a time, with each layer woven in and out the opposite way to the previous layer. Continue upwards until you can get no more into the wall.
- You should have a wall that looks like a giant basket with a gap at the position of the doorway.
- It can help at the top of the wall if you temporarily remove the wall plate to get the last of the weaving in. Put the wall-plate back in place



when you

have finished.

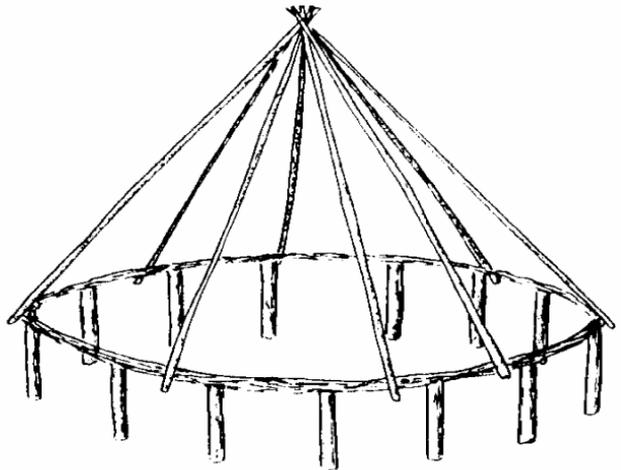
Roof-Rafters

- The main timbers of the roof are oak, cherry, ash or hazel. They need to be 3.5 metres long. Approx 0.5 metres from the bottom, cut a notch into the rafter. This is used to position and steady them where they contact the wall-plate.
- The construction starts with a tripod erected from the largest rafters. Lay three rafters out side by side on the floor. Tie the selected rafters together at the top with a piece of rope or cord. Lift the top end of the

rafters into the air and pull the bottoms apart to erect a tripod on the floor, inside the ring of the wall. Adjust the legs equidistant around the wall.

- Lifting the legs of the tripod one at a time, place the notch of the rafter onto the wall plate. (You may have to rotate the rafter to get the notch to the inside.)
- Drill a hole through the rafter and the wall plate and drive a wooden peg through them both.
- Repeat the procedure for the other two legs of the tripod.
- You should have the three rafters pegged equidistant around the top of the wall, at a pitch of between 45/60 degrees with about 0.5 metre hanging over the outside of the wall.
- The rest of the rafters are then lifted into place one at a time.
- Put one or two rafters on each section of wall-plate.
- Each rafter is drilled and pegged into place on the wall-plate.
- The tops of the rafters will rest in the top of the first three rafters that form the tripod.
- Make sure that you put two rafters, spaced well apart over the doorway. This safeguards anyone from walking into the bottom end of the overhang of a single rafter in the middle of the doorway!
- Once all the rafters are in place, they can be lashed together at the top where they rest in the tripod.
- Take care if you have to climb up to reach to tie the rafters together.

*Skeleton frame of
wall posts, wall
plate and rafters*



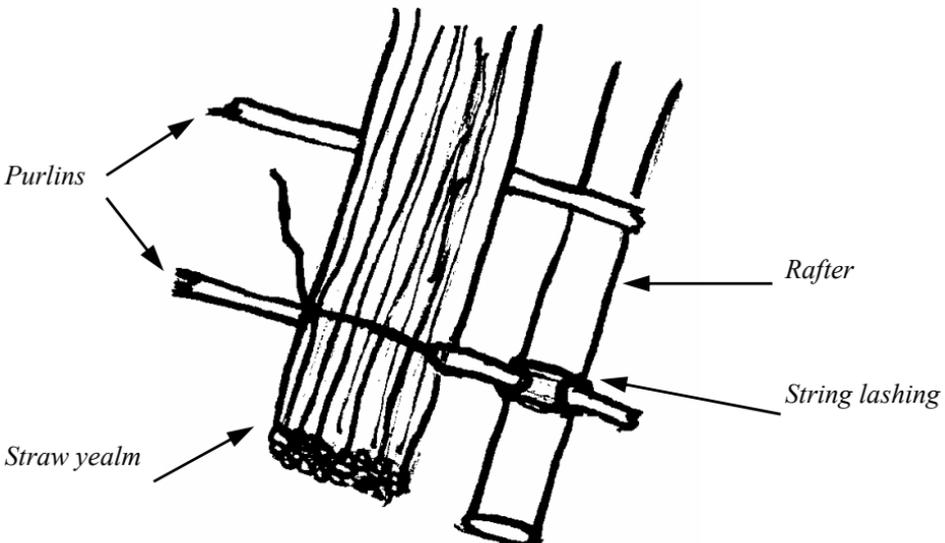
Roof Ring-beam.

This is extra and only needed if you are making a larger house than described.

- A ring of ash or hazel of about 1.5 metre diameter is constructed on the ground, and when completed, it is lashed into position inside the rafters approx 1/3 down the length.
- This is to eliminate any sagging of the rafters.

Thatching Purlins

- Concentric rings of hazel are lashed onto the outside of the rafters in horizontal layers approximately 25cms apart.
- The rings start at the bottom of the overhang of the rafters and continue up the full length, all the way to the top.
- They are positioned into notches cut into the outside of the rafters and held with a square lash.
- The cord used on the house should be of a natural fibre.
- A number of materials can be used ie. leather thongs. bramble, linen cord, bark strip, etc.(Baling sisal works well)
- These rings give you a surface to support and tie the thatch onto.



Roof thatch

- To provide a weather-proof cover to the house, the roof is thatched with a natural material, most times this will be wheat straw.
- The straw is tied onto the purlins in bundles called yealms
- The thatching is started from the bottom of the roof and proceeds in concentric layers up the roof, with each layer overlapping the previous one.
- This enables rain water to run down the roof without it soaking into the straw.
- If you have a local material to hand such as heather, bracken or reed, feel free to use that.

Wall Weather-proofing

- The surface of the wall must be made weather and wind-proof by coating the inside and outside of the wall with daub.
- The ingredients of daub are animal droppings (this acts as a cement), clay and earth, with straw or hair added to minimise cracking as it dries.
- All the ingredients are mixed together with extra water if required.
- Hand-fulls of the mix are thrown at the wall so that it gets well into the woven hazel.
- The surface is then smoothed over and left to dry. As it dries you will need to go over it a second time to fill any cracks.
- You can lime-wash (distemper) the walls to brighten the interior.

Internal layout

If you are building a larger house and wish to put internal fittings in, here is a guide to the basic layout of a round house, based on archaeological evidence.

Fire

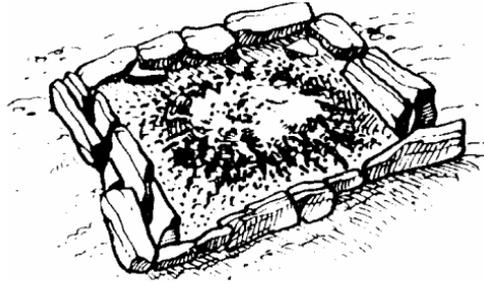
- The fire should be sited in the centre of the house.
- You can build a fire surround of clay to help control the fire and keep all the ash in one place, or you can use large flat stones as a fire base.



Two types of fire place
found in excavations

Oven

Some houses show evidence of having a bread-oven built in the house. They were normally placed to the left of the fire, as you look into the house. The ovens were built from clay and were dome shaped. They were approx. 60cms diameter and 90cms high, with an arched doorway cut in at ground level. It is operated by lighting a fire inside the oven to heat up the clay to the working temperature, (this is judged by how hot it is to the touch on the outside). Once up to temperature, a stone slab is placed inside on top of the fire. Bread can then be put in on top of the stone and the doorway of the oven closed up to retain heat.



Storage pits

A number of houses have storage pits dug into the floor. They should be no bigger than 0.5 metre diameter and 0.75 metre deep. These pits can be lined with a basket to stop the sides falling in. A wooden lid can be used to cover the pit. This will maintain a steady temperature in the pit, and it can be used for food storage.

Beds

Evidence for beds is slight, but they are mentioned in a small number of stories. The direct evidence is restricted to a number of internal post-holes, near the walls, inside the houses. They can be built as a platform off the ground, with a layer of hay or straw as a mattress, and covered with skins.

With a little care and effort you should now be able to build yourself a small round house. The scale is well within the capabilities of children, and can be built as a project at school.

I use a pre-prepared frame to teach with, and it goes up and down like a yo-yo. Several thousand 7-11 year olds have had fun building it over the years.

Good luck building yours, and may it give you years of pleasure.

If you would like to know more about Celtic Round Houses, here are some books to read, and sites to visit.

Iron Age Communities in Britain/3rd edition- Barry Cunliff
Routledge ISBN 0-415-05416-8 £75

Danebury/An Iron Age Hillfort Vo1 2- Barry Cunliffe
CBA ISBN Vo1 2 0-906780-29-2 £20

The Social Foundations of Prehistoric Britain- Richard Bradley
Longman ISBN 0-582-49164-9 £ ?

Britain before the conquest/Celtic Britain- Lloyd Laing
Granada ISBN 0-586-08373-1 £2.50

Hillforts of England and Wales -JamesDrye
Shire ISBN 0 -85263 -536 -2

Towns, Villages and Countryside of Celtic Europe
-Francoise Audouze/Olivier Buchsenscutz
Batsford ISBN 0 -7134 -6523 -9 £35.00

Museum of the iron Age, Andover - Excellent display of finds from Danbury Hill Fort.

Butser Ancient Farm, S. of Petersfield - Experimental site.

Chiltern Open Air Museum, Bucks - Round house in enclosure.

Castell Henllys Iron Age Fort, West Wales - Original site with good quality reconstructions.

Welsh Folk Museum, S.Wales - Enclosure with three round houses.

Craggaunowen Project, Ireland - A cranouge (a man made island) settlement.

Flag Fen, Peterborough - Large excavation with a very good museum.

Peat Moors Visitors Centre, Glastonbury - Small enclosure with two round houses.

New Barn Field Centre, Dorchester - Celtic farmstead, out buildings and animals.

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E-mail dfreeman@gallica.co.uk

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