

CHILTERN
OPEN AIR
MUSEUM

*Where buildings come
alive through history*

Medieval Structures



Location:

- Arborfield Barn and the Daub Project.

Practical Guidance:

- The activity workshop will start at Arborfield Barn.
- Students will be provided with safety information at the start of the activity workshop.
- The cruck frame will be erected as a group.
- The daubing that the children will be doing will not contain any dung (unlike traditional techniques).
- Non-powdered vinyl gloves are available on request.
- Students will be asked to wash their hands thoroughly after this session.

Purpose and content of the activity session:

- During the session the children will be told a history of different building structures and materials used during this era.
- The children will be able to make their own 'cruck frame' and will also be able to take part in daubing a wattle wall.

The explanation will vary in emphasis having regard to the age, ability and current or recent schoolwork (e.g. Medieval Realms) or interest if known beforehand.

Medieval Timber-Frame Buildings – Historical Background

Most medieval buildings are timber-framed, either using a box or cruck frame construction. Cruck frames were thought to be only found in certain parts of the country, with London and the South East of England (being influenced by the continent) having more box-framed buildings. However new evidence suggests that cruck-framed buildings in this area were more common than originally presumed.

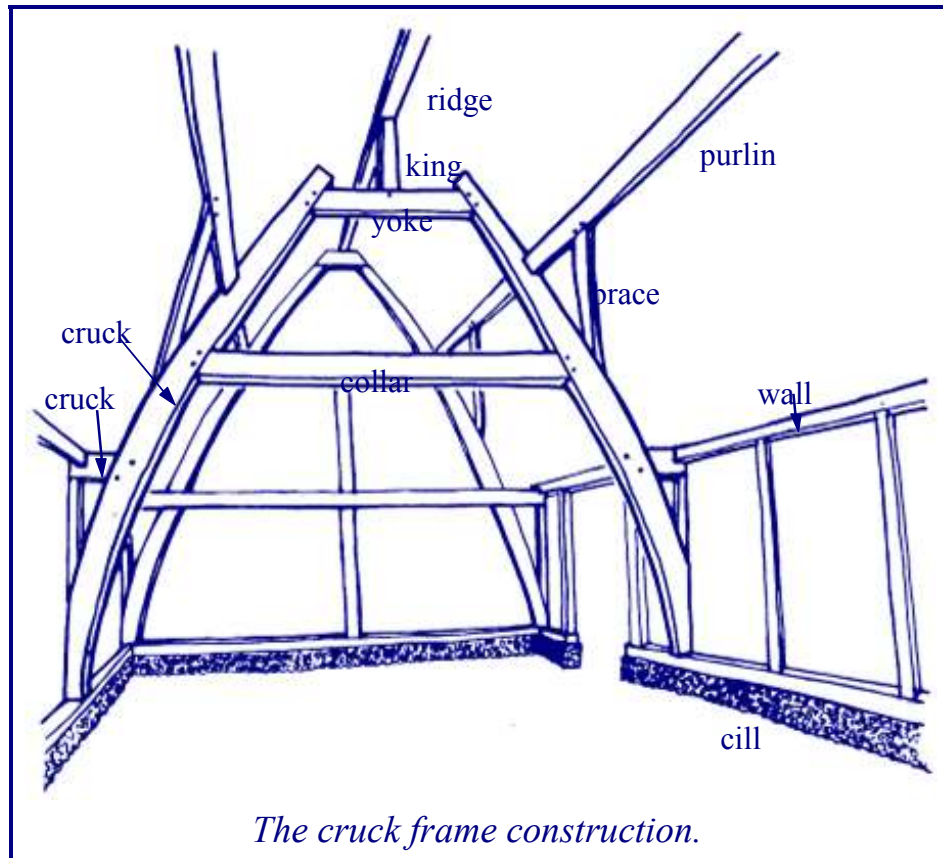
Box frame construction

As the name suggests a box frame is a construction composed of vertical and horizontal timbers forming a 'box-like' structure, This type of structure can generally be erected one timber at a time.

Cruck frame construction

Cruck frames were a very common technique in building and the majority of cruck buildings that survive today are excellent examples of the skills of carpenters.

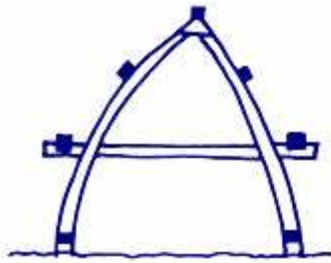
A cruck-frame consists of a pair of curved timbers (the cruck blades), which were often, but not necessarily, cut from one tree. A collar (and sometimes a tie-beam) join the blades together.



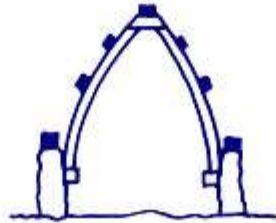
An advantage of this type of construction is that the cruck frames carry the roof load directly to the ground, with the wall frames using a lighter construction as the cruck blades support them.

Each cruck-frame has to be assembled on the ground and then reared or erected to a standing position. Once this is done then the heaviest and most difficult part of the building operation is over.

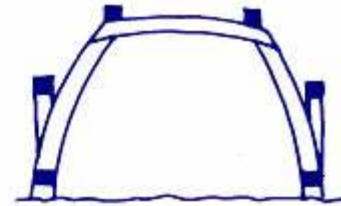
There are many different types of cruck-frames, some start at ground level (as at Arborfield Barn), whilst others start just below the wall plate level.



Full cruck-frames extend from the ground to the ridge.



Raised cruck-frames have their feet supported part way up the walls.



Base cruck-frames start at ground level but finish at the collar, which supports the main roof timbers.

Arborfield Barn is a three bay cruck construction made completely of oak (including the pegs which hold the joints together), with two closed full crucks at each end and two open full crucks inside. This barn dates from around 1500. Although the earliest known example of a cruck frame dates from the early 12th Century, this type of construction continued until the early part of the 18th Century in the North of England.

Wattle and Daub – Historical Background

This is an experimental project, designed to test and demonstrate different methods and mixes for filling the panels within a timber frame. The methods of construction illustrated here were in use during the Iron Age through to the nineteenth century, when factory produced materials became widely available.

The rectangular spaces between the timbers are filled with a woven lattice (wattle) of split chestnut. The wattle is covered with a wet mixture of clay and dung, which has dried to form a wind-proof, insulating wall. A layer of clay alone would crack badly as it dried (much like a muddy puddle); straw and other fibres in the dung help to bind the clay, reducing the cracking. Students can be asked to sniff the wall, to convince them daubed houses did not smell!