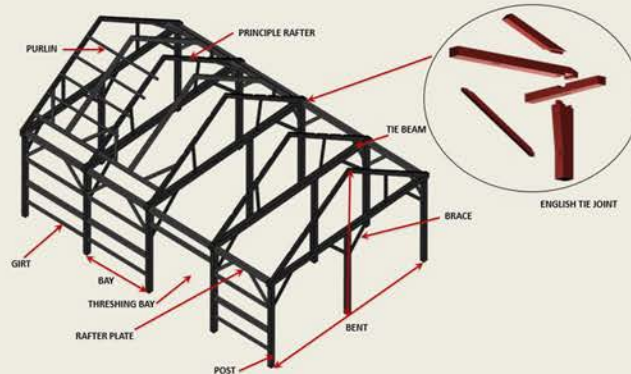


Historic Construction Methods

Built for Farming Using Medieval Timber Framing



Barn X used a medieval technique for timber framing called the "scribe rule." This frame, from the quality of its hewn surfaces to the fit of its joints, is exceptionally well constructed.



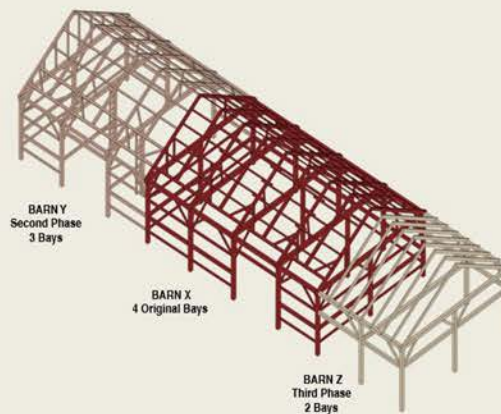
The complete structure, Barn X, Y, and Z, was built using three different framing methods over a span of three centuries.



The English tie joint in Barn X is a complex and effective joint which joins a post, rafter plate, tie beam, and principle rafter in one location at the top of the post. It often required that the post be gun stocked, joweled, or flared at its top to accommodate all the joinery required for this connection.



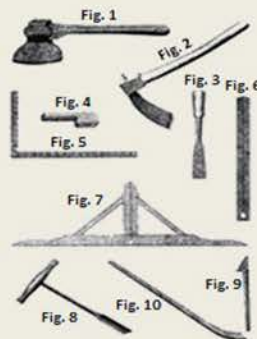
The heavy timber framing system in Barn Y utilized a simpler joining method known as "square rule" framing. Each joint is cut to a uniform layout plan and many small parts are interchangeable. Note the squared cutaway portions on the post. Many of the members were riven or split from straight grained oak instead of being sawn.



Using the scribe rule method, each mortise and tenon joint is skillfully cut and no parts are interchangeable. This method can be recognized by the Roman numeral-like marriage marks that occur at joint locations. These marriage marks were necessary to identify mating pieces when it was time to assemble the frame since each joint was individually marked out and cut. Tree nails and wood pegs were used to secure the joints.



The roof system features braced purlins that may be a signature feature designed by the original joiner/builder. This unique and ingenious roof framing system deals with the engineering issues associated with the barn's roof and upper walls.



The type of carpenter's tools used in constructing a timber frame:

- Fig. 1 carpenter's hatchet or broad axe
- Fig. 2 adze
- Fig. 3 chisel
- Fig. 4 mortise/tenon gauge
- Fig. 5 framing square
- Fig. 6 plumb rule
- Fig. 7 level
- Fig. 8 auger
- Fig. 9 hookpin
- Fig. 10 crowbar



Barn Z's two-bay addition attached to the original Barn X is an example of a different and simpler layout of heavy timber frame members developed in the mid-19th century.