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Architectural Joinery

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These pictures were taken at the Norwegian Heritage Museum in Oslo, of buildings transported from various sites and re-erected in the grounds of the museum. They are preserved as they were built. The museum restores and maintains the buildings on the site.

This first picture on the right shows a two storey store-house, made entirely from wood. It dates from the 1700s and was typical of rural buildings, where wood was widely available. The upper level is built with a characteristic overhang. There is an enclosed porch on the front with stairs up to the upper level. Such a store house would have been used to store food for the winter. It is raised above the ground, away from the snow.

The second picture shows a close up of the corner. You can see that stone footings are used, but then everything above that is made of wood. The base is made from very substantial beams that interlock at the corners with the upright columns. The joints and ends all slope outwards, to shed water and snow. The undercut posts fit into sockets in the beams resting on top of them. The walls are made from beams that are halved and hewed straight with an axe. Each is notched top and bottom, so that it interlocks with beams below and above. Where necessary, wooden pegs were used to fasten the joints together. The corner pillars are carved, as are the door posts.

The horizontal beams making up the walls interlock. Even though they may have been closely fitted at the time, they may not have been fully dry, so the gaps were probably filled with dried mud mixed with straw, to keep the weather out.

The roof on the building in the picture below is made of turf, which is an effective insulator. In the foreground is a vegetable garden with a scarecrow.

The next picture shows the detail of the roof at the passage between the parts of the building. Under the turf, you can see two layers of birch bark that are used for water proofing. The silver birch (Betula alba or Betula pendula) grows widely in Norwegian forests. The bark was probably stripped off while the tree was green, so that it was still flexible and could be flattened without cracking.

Silver Birch also had other uses – the bark was reputed to have medicinal properties, and the sap was used in drinks. The oil extracted from the leaves had a variety of uses, and contains some salicylic acid (the active ingredient in aspirin), so there was probably some foundation in the claims. The inner bark is edible and was used as a famine food. The wood is good for furniture, paper making, and charcoal.

The last picture shows the process of hewing beams from solid pine boles. The beam in the front has notches cut to a uniform depth. These are then cut away using a side axe. The beam at the back shows this in progress. The one in the middle is completed. These beams are intended for use in restoring a building surrounded by scaffolding in the background. The beams used for the walls of the turf-roofed building were probably made in this way too.

Usually, the wood used for building such as the walls was not seasoned. So allowances had to be made for shrinkage. This could be a problem if vertical timber columns are used in addition to the horizontal members making up the wall, so this needs to be allowed for in the design. (As wood dries, it shrinks more across the grain than lengthways, so the cross pieces can be expected to shrink more the vertical column.)

Silver Birch reference: http://www.ibiblio.org/pfaf/cgi-bin/arr_html?Betula+pendula